Waste Wise Communities:
The Future of Solid Waste Management in Kitsap County

Kitsap County Department of Public Works
Solid Waste Division

Preliminary Draft
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Acronyms and Abbreviations

1999 Plan	Kitsap County Comprehensive Solid Waste Management Plan, December 1999
BOCC	Kitsap County Board of County Commissioners
CALF	closed and/or abandoned landfill
C&D	construction and demolition debris
CFC	chlorofluorohydrocarbon
CIP	capital improvement program
Ecology	Washington State Department of Ecology
EOW	every other week
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FTE	full-time employee(s)
GHG	greenhouse gas
HDPE	high density polyethylene (i.e. plastic #2)
HHW	household hazardous waste
KCC	Kitsap County Code
KCHD	Kitsap County Health District
KRCC	Kitsap Regional Coordinating Council
LDPE	Low density polyethylene (i.e. plastic #4)
LEED	Leadership in Energy & Environmental Design
LQG	large quantity generator
MRW	moderate risk wastes
MRWMP	Moderate Risk Waste Management Plan
MSW	municipal solid waste
MTCA	Model Toxics Control Act, WAC 173-340
MQG	medium quantity generator
$MMTCO_2e$	million metric tons of CO_2 equivalents
NWPSC	Northwest Product Stewardship Council
OFM	Office of Financial Management
OVSL	Olympic View Sanitary Landfill
OVTS	Olympic View Transfer Station
PET	polyethylene terephthalate (i.e. plastic #1)
Plan	Kitsap County Comprehensive Solid and Hazardous Waste Management Plan
PBDE	polybrominated diphenyl ether
PHARM	Pharmaceuticals from Households: A Return Mechanism (committee)
PP	polypropylene (i.e. plastic #5)
PS	polystyrene (i.e. plastic #6)
PRC	Poulsbo Recycle Center
PCB	polychlorinated biphenyls
PVC	polyvinyl chloride (i.e. plastic #3)
RAGF	Recycling and Garbage Facility
RCW	Revised Code of Washington
RI/FS	Remedial investigation/feasibility study
SEED	Sustainable Energy and Economic Development
SEPA	State Environmental Policy Act
SQG	small quantity generator
SWAC	Solid Waste Advisory Committee
WAC	Washington Administrative Code
WDOR	Washington Department of Revenue
WGA	Waste Generation Area
WISHA	Washington Industrial Safety and Health Administration
WUTC	Washington Utilities and Transportation Commission

Glossary

backhaul	The act of using a vehicle to transport recycled materials on the return trip of a delivery.
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 WAC-173 308. 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.
climate change	Any significant change in measures of climate (such as temperature, precipitation, or wind) 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 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 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. See Figure 11-1. 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 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 and recycled.

Glossary

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 RCW 70.105 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.
land clearing 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.
Level 1	A service area designation in Kitsap County, in which residents receive curbside recycling services.
Level 2	A service area designation in Kitsap County, in which residents do not have access to curbside recycling but are provided with the use of drop-off recycling services at Recycling and Garbage Facilities.
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.
multi-family	Comprised of three or more combined dwelling units.
municipal solid waste	A subset of solid waste which includes un-segregated 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: Dangerous wastes other than wastes excluded from the requirements of WAC 173-303, Dangerous waste regulations, in WAC 173-303-071 such as household hazardous wastes; 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), RCW 70.105D, Hazardous waste cleanup – Model Toxics Control Act, WAC 173-340, the Model Toxics Control Act cleanup regulation or a remedial action taken under those rules; nor 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.
problem wastes	(a) Any solid material removed during a remedial action, a dangerous waste site closure, other cleanup efforts, or other actions, which contain hazardous substances, but are not designated dangerous wastes; (b) Dredge spoils resulting from the dredging of surface waters of the state where contaminants are present in the dredge spoils at concentrations not suitable for open water disposal and the dredge spoils are not dangerous wastes and are not regulated by Section 404 of the Federal Clean Water Act (PL95-217); or (c) Waste abrasive blasting grit or other material used in abrasive blasting. Common aggregates include, but are not limited to silica sand, utility slag, or copper slag. Waste abrasive blasting grit does not include blasting grit that will be re-used for its intended purpose. WAC 173-304-040.
recyclable materials	Those 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.
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 RAGF. 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), 173-303-082(2), and 173-303-090(4), as amended.
solid waste	Putrescible and nonputrescible solid and semi-solid wastes including garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, and recyclable materials. RCW 70.95.030.
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.
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. WAC 173-350.
white goods	Appliances, such as washing machines, dryers, ranges, refrigerators, etc.

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

Waste Wise Communities: The Future of Solid Waste Management in Kitsap County is a Comprehensive Solid & Hazardous Waste Management Plan (Plan) 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
Rebecca Asencio	Commercial
Stephanie Bailey (Chair)	City of Port Orchard
Denise Bauman	City of Poulsbo
Terry Bickel	Waste Management
Dean Church	Alternate - Bainbridge Disposal
Heather Church	Bainbridge Disposal
Kinley Deller (Co-Chair)	North Kitsap
Robert Dressel	Organics Management
Holly James	Alternate – Commercial
John P. Lacy	NAVFAC Northwest
Paul Lucas	City of Bremerton
Dave McCoy	City of Bainbridge Island
John Poppe	Central Kitsap
Daniel Roloff	South Kitsap
Dave Stanley	Alternate - Bainbridge Disposal
George Thompson	Alternate - Waste Management
Vacant	Port Gamble S'Klallam
Vacant	Suquamish Tribe
Ex-Officio Members	
Jan Brower	Kitsap County Health District
Taisa Welhasch	Ecology – Northwest Regional Office

1.2 DOCUMENT SUMMARY & 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. Navy Region Northwest. Solid waste handling includes management, storage, collection, diversion, transportation, treatment, use, processing, and final disposal. Recommendations address municipal solid waste, 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 $4,630,000. 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 decade, yet problems remain. According to the Washington Department of Ecology (Ecology), recycling rates are increasing, but so is solid waste generation, even when considering the growth in population. Toxic substances remain prevalent in our environment as evidenced by mercury found in fish, polychlorinated biphenyls (PCBs) in whales, and the flame-retardant polybrominated diphenyl ether (PBDE) in human breast milk (Ecology 2004). 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: municipal solid waste, recyclable material, special waste, and MRW.

Municipal solid waste (MSW) is the largest category of solid waste. It includes all garbage and construction 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 Recycling and Garbage Facility (RAGF).

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 municipal solid waste.

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

Finally, **moderate risk wastes** (MRW) are hazardous wastes produced by households and businesses, and other entities in small quantities. Household hazardous waste by definition is excluded (WAC 173-303-071(c)), and "small quantity generator" (SQG) waste is excluded provided it meets generation and accumulation limits, and is managed in a manner that does not pose a threat to human health or the environment (WAC 173-303-070(8)(a)(b)). It 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 2009 through about 2015. 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 Revised Code of Washington (RCW) 70.95 requires local government to maintain current solid waste management plans. RCW 70.105 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 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 wastes generated in areas governed by the Suquamish and Port Gamble S'Klallam Tribes.

Four Navy Region Northwest installations (Puget Sound Naval Shipyard, 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 wastes 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 RCW 70.95 and to provide a local hazardous waste management plan in accordance with RCW 70.105.

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; and
- 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 with Kitsap County designating the County as the lead planning agency for solid and MRW management. Memoranda of Understanding 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 Interlocal Agreements and Memoranda of Understanding can be found in Appendix B. Resolutions of adoption can be found in Appendix C.

1.3.4 Plan Development Process

In order to develop this Plan, technical research, analysis, and recommendations were prepared and discussed with Solid Waste Division staff, the Kitsap County Health District (KCHD), the SWAC, the Kitsap Regional Coordinating Council (KRCC), Public Works Directors, City Councils, the Board of County Commissioners, Ecology, and public interest groups. This participatory, interactive process was undertaken in order to prepare and build consensus for the Plan.

Early public participation was largely focused on the SWAC. The Board of County Commissioners appoints SWAC members, who 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. The SWAC provides guidance to the Solid Waste Division 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. SWAC meetings are open to the public, and meeting notices are published two weeks

before each meeting. SWAC agendas and meeting notes are posted at www.kitsapgov.com/sw.

Additional public involvement included the following:

- development of an online interested parties email list
- public outreach via booths at festivals and fairs
- public outreach via speaking engagements with local community groups
- online posting and public comment tool
- State Environmental Policy Act review

The Plan was adopted by participating cities, tribes, and by the Board of County Commissioners in meetings open to the public.

1.3.5 Status of Previous Plans

This Plan supersedes all previous solid and hazardous waste management plans, including the most recent, the *Kitsap County Comprehensive Solid Waste Management Plan, December 1999* (1999 Plan).

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, and
- 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 herein, may require a Plan revision. Plan revisions may be proposed and adopted using the following process:

- Plan revisions may be proposed by the Solid Waste Division, participating cities and tribes, stakeholders and interested parties, and/or Kitsap County residents. Solid Waste Division staff is available to provide assistance as needed.
- Solid Waste Division 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 Solid Waste Division will then submit to the SWAC for discussion.

- Following SWAC input, the Solid Waste Division will submit the proposal and the draft recommendation to the participating jurisdictions for feedback.
- The Solid Waste Division will then forward the proposal, including SWAC and the jurisdictions' feedback, and the Solid Waste Division's final recommendation to the Board of Commissioners.
- The Board of Commissioners will review the proposal and approve or disapprove it. If the Board of County Commissioners approves the proposal, the Solid Waste Division will prepare a Plan revision for adoption by the Board of County Commissioners and the participating jurisdictions affected by the revision.
- Upon adoption of the Plan revision by the Board of County Commissioners and participating jurisdictions affected by the revision, the revised Plan will be submitted to Ecology and/or 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 franchise 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; and
- 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; and
- 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) 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.

Figure 1-1
Recycling Symbol

In the 1980s and 1990s the focus was on the "three-legged stool" of waste reduction and re-use, recycling, and market development, as symbolized by the familiar recycling icon (Figure 1-1). Kitsap County's single and multi-family curbside recycling programs were phased in between 1990 and 1995 and have been continually refined since that time. The Household Hazardous Waste 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 Waste Wise Communities Plan incorporates these ideas and reflects Kitsap 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.

The Solid Waste Division developed a vision and mission statement to guide planning and implementation activities. The Solid Waste Division and the SWAC then identified 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. 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 Solid Waste Division. 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 Solid Waste Division 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 1-2
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 Waste Wise Communities 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 percent 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 products' life-cycle, including end of life management
- Provide customers information and education to implement recommended waste management practices; and
- Support the five key initiatives of the State's Beyond Waste Plan, including:
    - increased diversion of organic materials
    - increased use of environmentally preferable building, construction, operation, and de-construction practices
    - improved management of small-volume hazardous wastes
    - improved management of industrial wastes, and
    - improved measuring of progress

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 decade support sustainability. For instance, Kitsap County has been an active leader in waste reduction and recycling efforts for many years. Single and multi-family curbside recycling programs were phased in between 1990 and 1995, and programs have been continually introduced and refined since that time. As of 2007, Kitsap County businesses and residents were recycling approximately 31% 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 preparing this Plan, the Solid Waste Division acknowledges state and local plans and policies that have emerged since 1999 that incorporate elements of sustainability. The predominant theme is the increasingly explicit recognition of sustainability as a multi-disciplinary multi-pronged approach to conserving our natural environment. The trend is moving away from the traditional concept of managing disposal capacity and collecting recyclables towards a model that sees managing wastes as one of several important elements needed to manage limited resources efficiently, and considers economic life-cycle costs and environmental benefits in decision-making.

In addition to Kitsap County Resolution #091-2009, Supporting Sustainability Efforts in Kitsap County, other regional and local plans and policies support and strengthen the framework for this Plan, and reinforce the goals and principles first established in the 1999 Plan. The most pertinent state and local plans and policies are summarized below.

Sustainable Washington

In 2003, The Governor's Sustainable Washington Advisory Panel developed *A New Path Forward: Action Plan for a Sustainable Washington*. The Action Plan featured eleven recommendations, each identifying specific action steps to promote vibrant communities, strong economies, healthy ecosystems, and a sustainable way of life in Washington State. Of the eleven recommendations, the following are relevant to this Plan.

- Establish "green building" standards for state and public sector construction projects *(Recommendation 5)*
- Use purchasing power to build demand for sustainable products *(Recommendation 6)*
- Create incentives for sustainable development through tax shifting *(Recommendation 8)*
- Empower local governments to pursue sustainable development *(Recommendation 9)*
- Build awareness—engage and inform stakeholders about sustainability *(Recommendation 10)*
- Define, document, and communicate progress toward the sustainability vision *(Recommendation 11)*

The Action Plan also presents a number of visionary strategic outcomes for 2030, including the following:

- **No Waste By 2030.** What used to be thought of as wastes will actually have become resources to be cycled into new goods or services, or substances that can be harmlessly reabsorbed into our natural systems.
- **Toxic materials** will be systematically eliminated from our state.
- **Costs paid in full**. Innovative methods of shifting taxes are currently being designed and implemented around the world to more accurately reflect the true costs and benefits of our inputs and activities on natural and social resources. Smart regulations can also be used as incentives for positive change. By 2030 we will take responsibility for the costs of all the inputs, goods, and services we make and use.

Executive Order 05-01, Sustainability and Efficiency Goals for State Government

In 2005, a revised executive order was issued that established numerical sustainability and efficiency goals for state government. Kitsap County and participating jurisdictions may wish to consider using this as a model for the development of local goals. Eight goals (each including detailed sub-goals) were adopted. Goals specific to solid waste management are listed below:

- Agencies incorporate green building practices in all new construction projects, and in major remodels that cost over 60% of the facility's assessed value.
- Agencies shall take all reasonable actions to reduce the life-cycle impacts of paper products and achieve specific goals.
- Agencies shall take reasonable actions in support of paper product goals.

- Agencies shall achieve further gains in energy efficiency.
- Agencies shall include specific information in Sustainability Plan Progress reports.

Executive Order 07-02, Washington Climate Change Challenge

In 2007 an executive order was issued that, among other things, established the following greenhouse gas GHG emissions reduction and clean energy economy goals for Washington State:

- By 2020, reduce greenhouse gas emissions in the state of Washington to 1990 levels, a reduction of 10 million metric tons below 2004 emissions;
- By 2035, reduce greenhouse gas emissions in the state of Washington to 25% below 1990 levels, a reduction of 30 million metric tons below 2004;
- By 2050, the state of Washington will do its part to reach global climate stabilization levels by reducing emissions to 50% below 1990 levels or 70% below our expected emissions that year, an absolute reduction in emissions of nearly 50 million metric tons below 2004;
- By 2020, increase the number of clean energy sector jobs to 25,000 from the 8,400 jobs we had in 2004; and
- By 2020, reduce expenditures by 20% on fuel imported into the state by developing Washington resources and supporting efficient energy use.

Washington Climate Action Team

According to Washington's Climate Action Team (CAT 2008) Washington is diverting about 48 % of the solid waste generated in the state to re-use, recycling, and beneficial use applications. Though the exact greenhouse gas (GHG) emission reduction this represents is unknown, it is several million metric tons of CO_2 equivalents ($MMTCO_2e$) per year, probably more.

This Plan is designed to support implementation of the following "most promising" Climate Action Team priorities and recommendations related to the management of solid waste:

- **Beyond Waste.** The goal of the Beyond Waste work group was to implement Recommendation AW-3, significantly expand source reduction, re-use, recycling, and composting, and to build on what is best and most successful in the current waste management system by targeting products and organic materials with the largest GHG emission reduction potential. This work group focused on both reducing the amount of waste that Washingtonians produce and increasing the portion of recycled material that is otherwise discarded.

- **Energy Efficiency and Green Buildings.** The goal of the Energy Efficiency and Green Buildings work group was to achieve significant GHG emission reductions in Washington's built environment both directly through reduced use of carbon-based energy as well as indirectly by reducing the use of GHG-intensive products (recycled-content products tend to be much less GHG intensive than similar products made from virgin materials). This work group also aimed to strengthen the energy efficiency and green building sectors and thus contribute directly to the Green Economy job goals articulated in Executive Order 07-02.

- **Transportation.** Transportation accounts for nearly half of total emissions in Washington. The goal of the Transportation work group was to make recommendations to achieve significant reductions in transportation-related GHG emissions and to recommend tools and best practices to achieve the per capita vehicle miles reduction goals enacted in the 2009 Climate Action and Green Jobs bill (ESHB 2815).

The Climate Action Team believes that pursuing recommended strategies to prevent and recycle even more waste will result in at least a measurable $MMTCO_2e$ per year being reduced. The goal is to expand source reduction, re-use, recycling and composting, and build on what is best and most successful in current waste management system, by supporting statewide implementation that targets products with the largest GHG reduction potential.

2006 Kitsap County Integrated Comprehensive Plan

The basic philosophy underlying this Waste Wise Communities Plan is also consistent with the principles of sustainability articulated in the *2006 Kitsap County Integrated Comprehensive Plan*.

In cases where the Plan recommends the construction of new facilities or renovation of existing ones, the design and materials will incorporate policies from the *2006 Kitsap County Integrated Comprehensive Plan*. For example:

- Enhance neighborhood safety, aesthetics, and livability. (Goal 31).
- Promote environmentally sustainable neighborhood development. (Goal 34)
- Encourage the use of natural building materials by developing a list of preferred materials appropriate to the northwest climate. (Policy POSK-161)
- Wherever possible, building materials and systems should be used that meet the established standards and practices of the U.S. Green Building Council and Leadership in Energy & Environmental Design (LEED) program. (Policy POSK-162)
- Encourage low impact development methods for handling stormwater including minimizing soil disturbance, soil enhancement, bioswales, green roofs, rain catchment systems, pervious pavement, and narrower streets. (Policy POSK-163).

The Waste Wise Communities Plan recommendations involving transportation of waste (i.e. collection, transfer, or rail-haul) are consistent with the energy and environmental goals of the *2006 Kitsap County Integrated Comprehensive Plan*. For example:

- Ensure clean air by coordinating land use, economic, and transportation planning to minimize or reduce pollution emissions or concentrations (Goal 16).

Washington's "Beyond Waste" Plan

Ecology released a statewide waste and toxics reduction plan in November 2004 (Ecology 2004). Commonly referred to as "Beyond Waste", it adopts a vision in which society transitions to a point where waste is viewed as inefficient and most wastes have been eliminated. This transition is expected to take 20-30 years or more, and will contribute toward society's long-term economic, social, and environmental vitality. In the short term (over the next five years) Beyond Waste focuses on five areas: industrial waste, small volume hazardous waste, organic materials, green

building, and measuring progress.

Beyond Waste will transform the environmental regulatory climate in Washington as toxic ingredients or wastes are eliminated at the source by either safely returning materials to the environment or efficiently recycling them into industrial processes. This transformation will slowly do away with the hidden cost of hazardous materials that are paid by society in the form of increased health costs, environmental clean-up costs, and degraded ecosystems.

If wastes and toxics are not generated in the first place, then nothing is left to regulate. The result will be less cost for industry, less government regulation, new global markets, a very competitive market economy, and a better, cleaner environment.

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 carpet, paint, pharmaceuticals, and other materials, while working on a long-range strategy that is not specific to particular products.

1.4 SUMMARY OF RECENT CHANGES IN SOLID WASTE REGULATION AND POLICY

Several new rules have been adopted since the previous solid and MRW plan was developed. Several 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 the Washington Administrative Code (WAC) 173-350 and WAC 173-304. By state regulation, solid waste regulation and enforcement is delegated to local jurisdictional health authorities. Therefore, Kitsap County Board of Health Ordinance 2004-2 adopts and amends WAC 173-350, WAC 173-304, and WAC 173-351 by reference and governs solid waste facilities in Kitsap County.

The rules set 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 regulates landfill disposal of a new category of wastes called inert wastes.

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 municipal solid waste is regulated by local jurisdictional health authorities

under a separate rule, WAC 173-351, Criteria for Municipal Solid Waste Landfills. As of 2008, this rule is in the process of being revised.

1.4.2 Recyclable Materials—Transporter & Facility Requirements

RCW 70.95, Solid Waste Management Reduction & Recycling Act was amended by the Legislature in 2005 to require transporters of recyclable material to register with Ecology, transport recyclable materials 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). In addition, Ecology can require financial assurance for recycling facilities if Ecology determines it is necessary. A regulation, WAC 173-345, implementing the statute was recently proposed for adoption.

1.4.3 Electronics Product Stewardship

The Environmental Protection Agency (EPA) determined that disposal of electronic wastes into municipal solid waste 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 may not charge consumers to drop off materials and is financed by manufacturers of the electronic equipment. Rules to implement this law, WAC 173 900, Electronics Product Recycling Program, were adopted in October 2007. The new system became effective January 1, 2009.

1.4.4 Revenue-Sharing Agreements

A recent addition to state law (RCW 81.77.185) allows waste collection companies to retain up to 30 percent 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 2008, only a few such agreements had been approved and only in more populated areas with larger volumes of waste and recyclables (e.g. King, Pierce and Snohomish Counties).

1.4.5 Tire Fee Reinstated

In 2005, RCW 70.95 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 new fee is also intended to clean up unauthorized tire dumps and to help prevent future accumulations of tires. The fee is expected to raise $4.4 million per year and will expire in 2010.

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.

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. Kitsap County Code 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 ten dollar 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 (RCW 70.95M) 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 in 2008. The Act is designed to protect children from lead, cadmium, and phthalates in products they use everyday, provide consumers with information to make safer product choices for their children, and put Washington on track to addressing the many other hazardous chemicals in children's products. The 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.

1.5 REFERENCES/RESOURCES

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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 1999 and 2009 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.

Urban areas comprise incorporated cities totaling approximately 56.7 square miles (Bainbridge Island, Poulsbo, Bremerton, and Port Orchard). Unincorporated Urban Growth Areas total an additional 38.4 square miles. Three cities, Poulsbo, Bremerton, and Port Orchard, are surrounded by Urban Growth Areas. The designated Urban Growth Areas are listed below:

- Kingston
- Poulsbo
- Silverdale
- Central Kitsap
- East Bremerton
- West Bremerton
- Gorst
- Port Orchard
- Utility Local Improvement District #6 (ULID #6)
- South Kitsap Industrial Area (SKIA)

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 disposed?
- What sectors produce which types of waste?
- 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 comes 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 analyzed existing population patterns and projected growth rates in order to produce the *2006 Kitsap County Integrated Comprehensive Plan* (BOCC 2006). The Washington State Office of Financial Management (OFM) produces high, medium, and low population estimates in *Population Trends for Washington State and Growth Management Population Projections (OFM 2008), which are summarized in Table 2.1.*

Facility Data
Recycling facilities and facilities with solid waste handling permits are required to submit Annual Reports to KCHD 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 availability of waste composition data specific to Kitsap County is somewhat limited, so the Plan relies upon studies by Ecology and by other counties.

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
- multi-family households
- commercial generators
- self-haulers (includes both residential and commercial sources)

2.4 POPULATION PROJECTIONS

Within this Plan, OFM high and OFM medium estimates are used to conservatively represent the high and low end of possible population growth, and Kitsap County's estimate from the *2006 Kitsap County Integrated Comprehensive Plan*, which falls between them, is used to represent the County's estimate. When population is mentioned in this document, it refers to the County's estimate as a shorthand, 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. Each projection is based upon the most recent U.S. census data from 2000. 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 - Med. Est.[1]
2000	231,969	232,902	231,969
2005	240,400	248,186	240,400
2008	248,399[3]	258,884	247,689[3]
2010	296,494	266,214	249,050
2015	316,624	285,765	262,052
2020	347,255	307,377	283,242
2025	371,972	331,571	299,073
2030	396,879	359,239	314,610

[1]Data from "Growth Management Population Projections 2000 to 2030." High and Medium Estimates. http://www.ofm.wa.gov/pop/gma/projections.asp; Data 2001 to 2007 from "2007 Population Trends for Washington State." http://www.ofm.wa.gov/pop/poptrends/
[2]Data from Kitsap County Motor Vehicle Excise Tax Population Assessment (Kitsap 2007a)
[3]Population estimated using the average annual population growth between 2011 and 2030 (i.e., 1.47% for high projection, 1.18% for medium projection).

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 1999). In 2007, 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 2009). Nearly all of the solid waste handled for disposal in Kitsap County was exported to Columbia Ridge Landfill and Recycling Center in 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 Household Hazardous Waste Collection Facility under terms and conditions of Interlocal Agreements 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's Columbia Ridge Landfill and Recycling Center in 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 1992 and 2003 *Waste Characterization Studies* (Ecology 1993 and 2003). In both studies, counties were grouped according to geographic, economic, and demographic similarities. Sampling and surveys conducted in certain counties were assumed to represent the composition of disposed MSW in counties of similar demographic make-up. Thurston County completed a waste composition study in 2004 (Thurston County 2005). Because of its similarity to Kitsap County, all data used in this plan related to the composition of disposed waste is derived from the Thurston County study.

Table 2.2 provides a comparison of estimated composition of disposed MSW in percent by weight, between the Kitsap County and the statewide average.

Table 2.2
Estimated Composition of Disposed MSW in Percent by Weight, 2003 - 2004

	Kitsap County[1]	Statewide (2003)[2]
Construction & Demolition Debris	23.0%	13.5%
Glass	2.7%	4.0%
Metal	6.7%	7.5%
Organics	18.0%	25.1%
Other	15.5%	13.7%
Paper	17.8%	23.7%
Plastic	14.6%	11.6%
Special	2.0%	0.9%

[1] Based on 2004 Thurston County Waste Composition Study
[2] Ecology 2003 Washington State Waste Characterization Study

2.7 SOLID WASTE GENERATION FORECAST

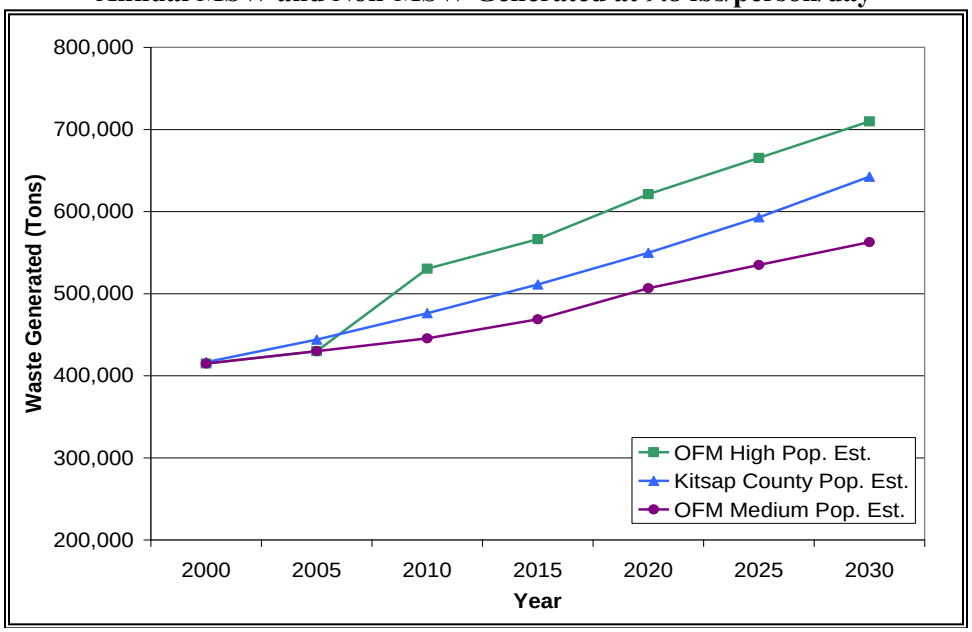
Ecology tracks a number of figures to show how much waste is generated in Washington State. Ecology estimates a 2006 statewide generation rate of approximately 14.98 pounds per person per day (Ecology 2007). This figure includes all MSW and non-MSW wastes disposed, recycled, and diverted. Non-MSW waste includes construction and demolition wastes, landclearing debris, tires, petroleum-contaminated soils, and industrial wastes that often do not enter the municipal solid waste system. "Diverted" is defined as non-MSW waste that is not landfilled, but which is put to other uses not considered to be "recycling" or "beneficial use," terms which are defined by state law.

Kitsap County's total waste generation rate differs from the statewide rate due to its unique mix of urban and rural densities, demographics, and the local economies. Based on data reported to Ecology, the actual 2006 total waste generation rate for Kitsap County (MSW plus other non-MSW wastes) is approximately 9.8 lbs per person per day (Newman 2008).

Figure 2-1 forecasts total waste generation in the County through the year 2030 based on a total waste generation rate of 9.8 pounds per person per day and utilizing the OFM 2007 high and medium population estimates to calculate the high and low end of possible waste generation, and Kitsap County's population estimate from the *2006 Kitsap County Integrated Comprehensive Plan*, to calculate the medium waste generation estimate.

Total generation rates are important for planning purposes because they provide a total picture of waste generation for the County as a whole, and help the County to target existing and new waste reduction, recycling, re-use, and composting programs to reduce overall resource consumption in all sectors.

Figure 2-1
Annual MSW and Non-MSW Generated at 9.8 lbs/person/day



Note: The jump in waste generation for the OFM High population estimate in 2007 is due to the transition in data sources from actual population trends in Kitsap County to projections provided by OFM.

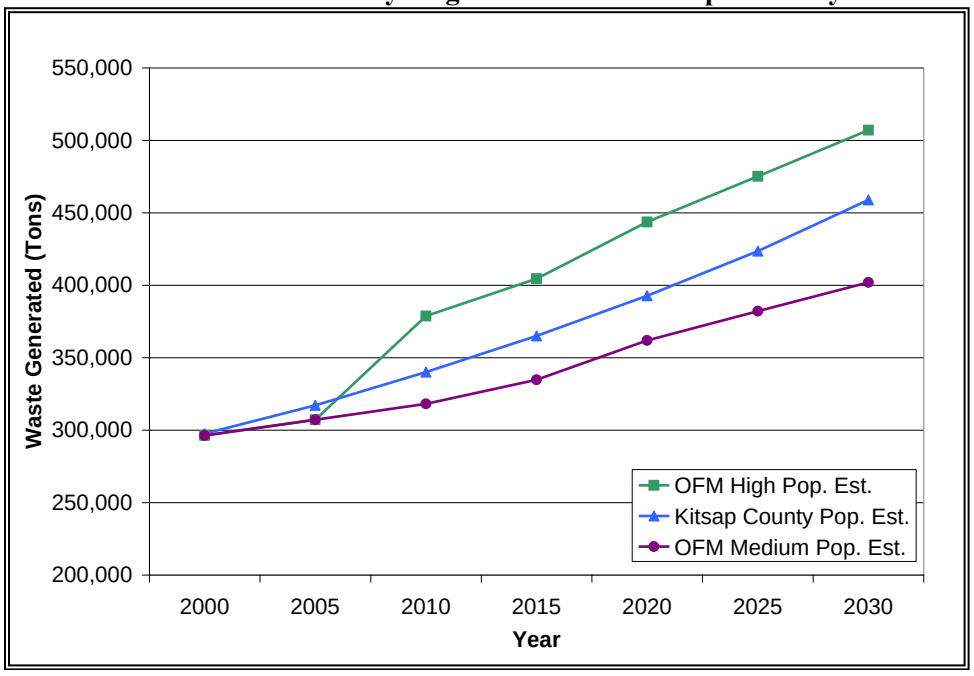
Ecology also estimated a 2006 statewide generation rate of 7.97 pounds per person per day (Ecology 2007) for MSW and recycled waste. Based on data reported to Ecology for counties with semi-rural characteristics similar to Kitsap County, the actual 2006 MSW generation rate appears to be slightly less than 7 pounds per person per day (Newman 2008).

Figure 2-2 forecasts MSW waste generation in the County through the year 2030 based on a waste generation rate of 7 pounds per person per day and utilizing the OFM high and medium estimates to calculate the high and low end of possible waste generation, and Kitsap County's estimate from the *2006 Kitsap County Integrated Comprehensive Plan* to calculate the medium waste generation estimate.

This information helps the County to target existing and new waste reduction, recycling, re-use, and composting programs to reduce resource consumption in these sectors. Generation totals also help the County plan for any public facility improvements necessary to handle significant increases in waste or recycling volumes in the future. Actual population growth depends on a variety of factors, and the upper and lower estimates present a presumed range of likely scenarios.

Finally, Kitsap County tracks waste generated by County residents and businesses that is handled through one of the County-owned or contracted facilities (RAGFs and OVTS), or by waste and recycling haulers operating under WUTC permit. For 2006, Kitsap County figures for self-haul, commercial, and residentially collected MSW disposed indicate a waste generation rate of approximately 5 pounds per person per day (Kitsap County 2007).

Figure 2-2
Annual MSW & Recycling Generated at 7 lbs/person/day



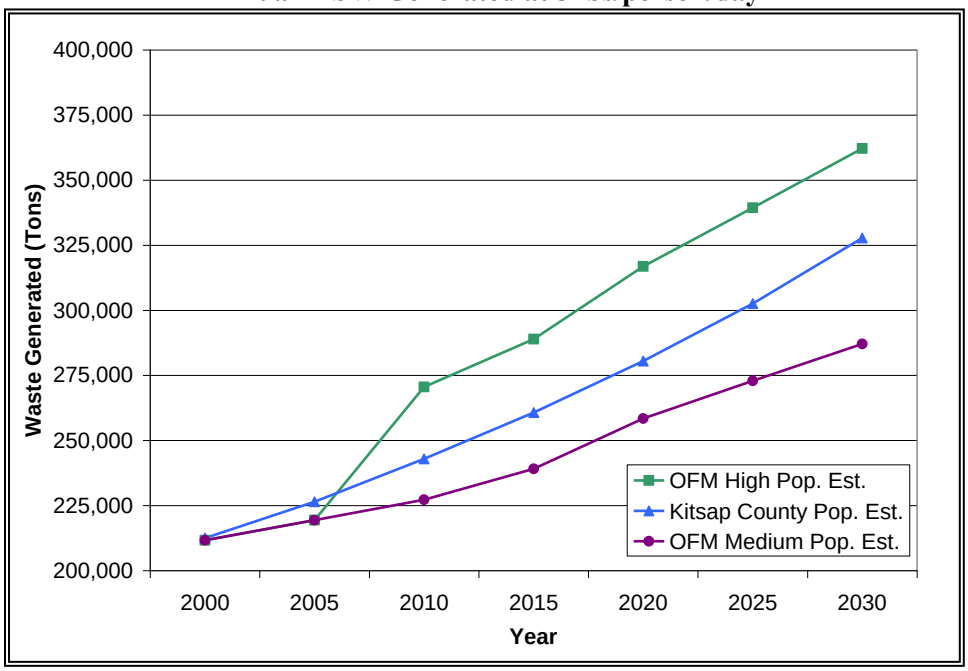
Note: The jump in waste generation for the OFM High population estimate in 2007 is due to the transition in data sources from actual population trends in Kitsap County to projections provided by OFM.

Figure 2-3 forecasts MSW waste generation in the County through the year 2030 based on a waste generation rate of 5 pounds per person per day and utilizing the OFM high and medium estimates to calculate the high and low end of possible waste generation, and Kitsap County's estimate from the *2006 Kitsap County Integrated Comprehensive Plan* to calculate the medium

waste generation estimate. When the 5 pounds per person per day estimate is projected through 2030, the waste increases approximately 21%. Though this increase is significant, the current solid waste system can accommodate this increase without exceeding capacity.

MSW generation totals are important for planning purposes because they provide the picture of waste generation for wastes typically handled by County-owned facilities or contracted facilities (RAGFs and OVTS). The information helps the County plan for the public facilities necessary to handle the wastes, and allow for recycling, anticipated or planned in the future. The information also helps the County set levels of service and rates at County-owned or contracted facilities.

Figure 2-3
Annual MSW Generated at 5 lbs/person/day



Note: The jump in waste generation for the OFM High population estimate in 2007 is due to the transition in data sources from actual population trends in Kitsap County to projections provided by OFM.

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 1990s Ecology started tracking "diverted" waste, which includes those materials which are recovered for uses other than recycling.

According to Ecology, Kitsap County generated approximately 291,084 tons of MSW in 2008. Of that amount, approximately 197,413 tons were disposed, and 93,671 tons recycled, equating to an MSW recycling rate of approximately 32 percent. When non-MSW wastes are considered in addition to MSW, Kitsap County generated approximately 391,841 tons in 2008. Of that, approximately 197,413 tons were disposed, and approximately 194,427 recycled or diverted, equating to an overall waste recycling/diversion rate of approximately 49 percent (Ecology 2009).

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.

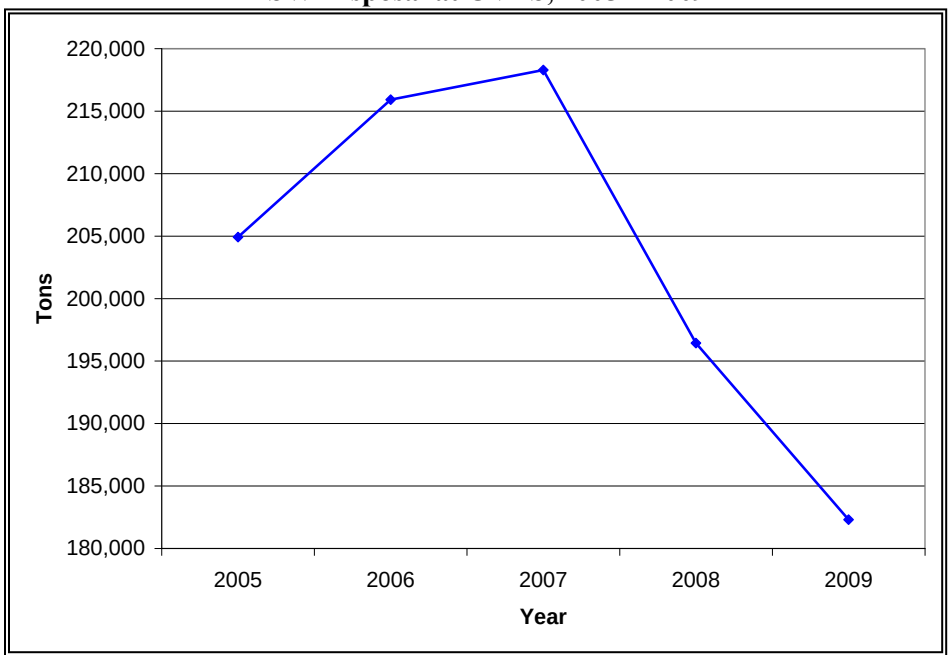
2.8.2 Changes in the Waste Stream 2007 – 2008

As shown in Figures 2-4 and 2-5, the Solid Waste Division observed a decrease in disposal and recycling tonnages between 2007 and 2009. Tonnages are down approximately 10% year-over-year.

Some of the decline is likely the result of environmental awareness on the part of the businesses and residents of Kitsap County and the impact of the Solid Waste Division and other programs. But the largest portion of the decline is attributed to a slowed economy. Waste generation and economic conditions tend to correlate. This association makes sense because in a slowed economy, construction, remodeling, retail, and other sectors also slow, which results in less waste generation.

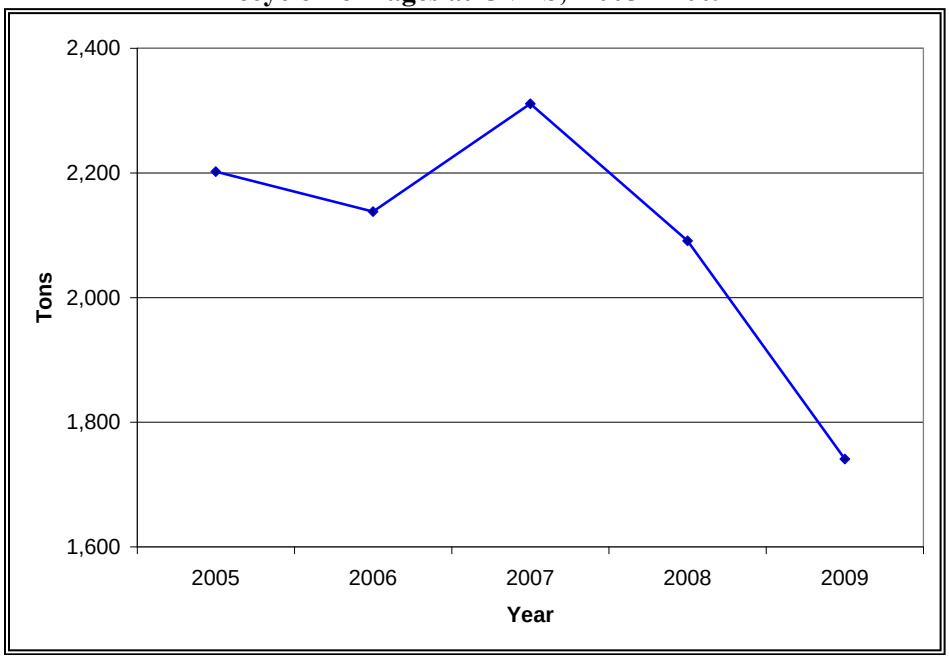
The Solid Waste Division continuously monitors trends in recycling and disposal as part of its program planning activity. Tonnages impact costs and revenues, capital facilities, operations and maintenance, and program design. Recent data will be used in combination with the waste projections discussed throughout this Chapter as new programs and policies are implemented.

Figure 2-4
MSW Disposal at OVTS, 2005 – 2009



Source: Kitsap County 2010.

Figure 2-5
Recycle Tonnages at OVTS, 2005 – 2009



Source: Kitsap County 2010.

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CHAPTER 3 - WASTE REDUCTION & RECYCLING

3.1 INTRODUCTION

This chapter discusses Waste Reduction & 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 Solid Waste Division can take to reduce the volume, toxicity, or life-cycle impacts of materials in the waste stream?
- Are existing programs sufficient to achieve Solid Waste Division recycling and diversion goals?
- How should the Solid Waste Division'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

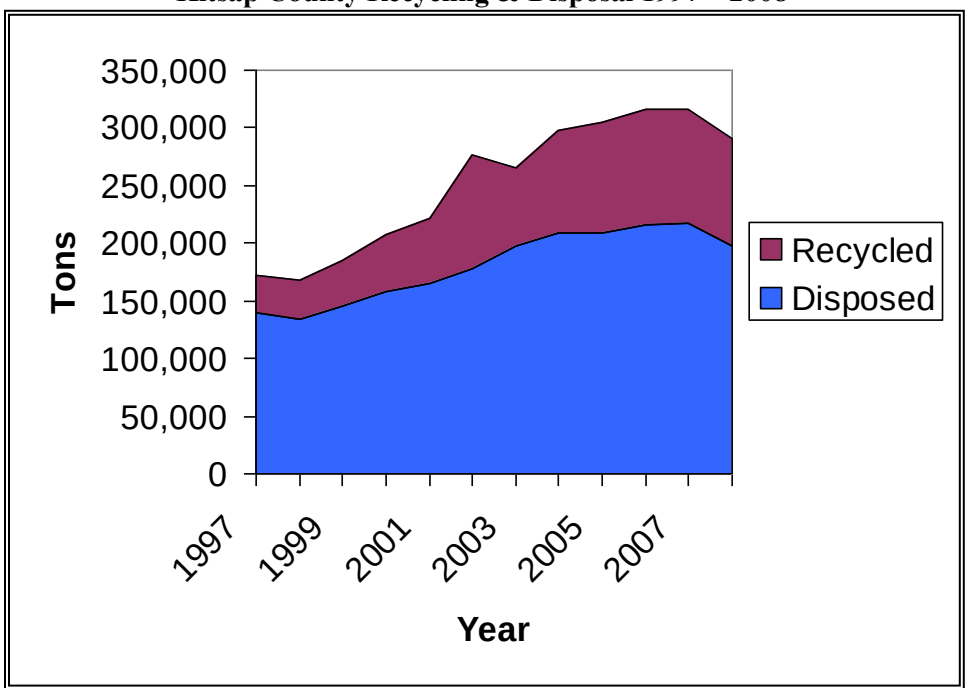
The waste quantities in Kitsap County are increasing every year as the population expands. Currently over 300,000 tons of waste are generated annually. Recycling rates have been improving steadily, from 9.5% in 1990 to 31% in 2007. However, waste generation has also been increasing. Figure 3-1 illustrates the trends in waste generation, recycling and disposal.

On a per capita basis, it is estimated that Kitsap County residents and businesses generate between 5 and 9.8 pounds per person per day of waste and recyclables, depending on what is counted and how it is measured (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
Kitsap County Recycling & Disposal 1997 – 2008



Source: Peters 2008a and Ecology 2009.

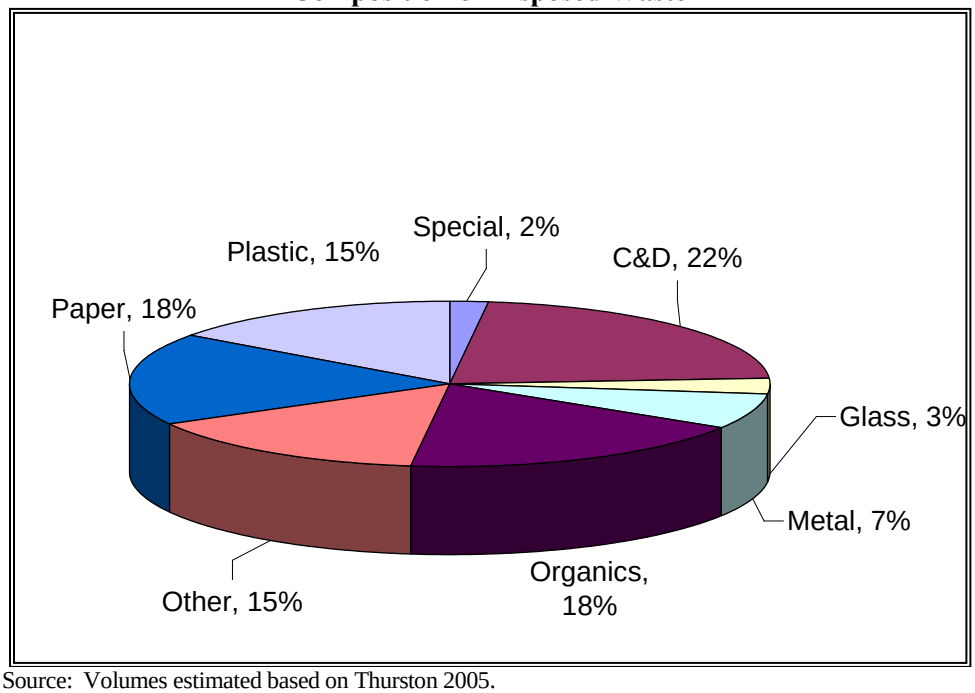
Figure 3-2 shows the estimated composition of the disposed waste stream. This is a "snapshot" of the waste based on a study done in Thurston County, a community with similar characteristics to Kitsap County.

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

- Construction & demolition debris (C&D) (22%)

- Organic materials (18%)
- Paper (18%)
- Plastic (15%)

Figure 3-2
Composition of Disposed Waste



Source: Volumes estimated based on Thurston 2005.

Each potentially recyclable material above represents over 15% (by volume) of materials found in disposed waste. C&D, organic materials, and paper are good prospects to target for additional diversion away from disposal. Plastic lacks developed markets at this time, but should conditions change in the future, could be targeted as well.

Kitsap County currently recycles or diverts approximately 31% of its waste stream. This plan considers strategies to reduce waste generation and toxicity, as well as strategies to increase diversion. Organic materials are discussed in Chapter 4. C&D is discussed in Chapter 5. Glass, paper, plastic, and other "household" recyclables are discussed in this chapter.

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. 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 a 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. Not only is this inefficient and costly, but 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 acomprehensive **systems understanding** of our interactions with nature and search for inefficiencies at all stages. With this understanding, wastes can be thinking. 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 support 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.
- Educate consumers to demand products that are less toxic and/or result in less waste when they reach the end of their useful life.
- Continue 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.
- Support community efforts to re-use durable goods and building materials through expanded donation and sales opportunities
- Support for Built Green, 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

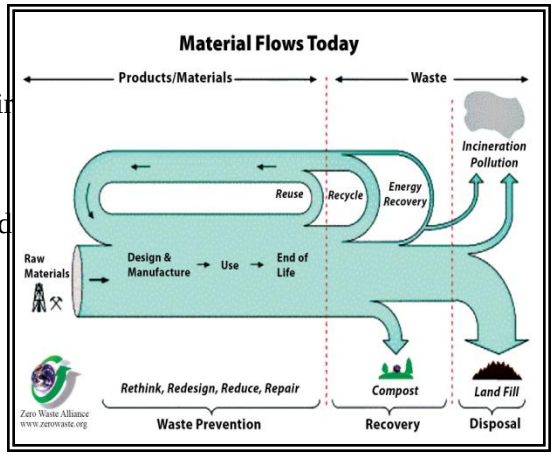
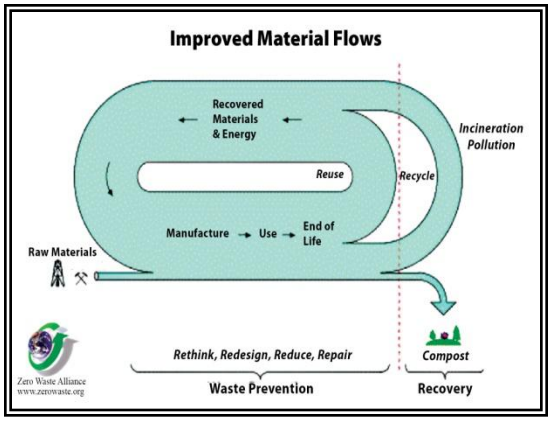


Figure 3-4
Improved Material Flows



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. Washington State is a national leader in enacting product stewardship legislation.

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

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

Four major accomplishments of the NWPSC in 2007 were:

- Substantial involvement in the passage of Washington State's product stewardship law that makes computer, monitor, and television manufacturers responsible for financing and implementing a collection system for their products. A successful electronic waste recycling program was implemented statewide beginning January 1, 2009.
- Providing expert advice and guidance in the formation and development of a California Product Stewardship Council and a Midwest Product Stewardship Council.
- Leadership role in Pharmaceuticals from Households: A Return Mechanism (PHARM), a regional committee developing a take back program for unwanted/unused medications. The pilot launched at Group Health clinics in November 2007 has expanded to Bartell's Drug Stores.
- Continued leadership role in the national paint stewardship dialogue.

3.2.3 Recycling

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

- Generation
- Collection
  - Residential (Single and Multi-family)
  - 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 Kitsap County Code, the following recyclable materials are designated as a minimum list of designated recyclables that must be included in curbside recycling service and

collected from single- and multi-family customers when set out as specified:

- Clear, amber, and green glass food and beverage containers
- Tin-coated steel cans
- Aluminum cans
- Scrap metal with dimensions less than 2 foot by 2 foot and less than 35 pounds
- Newspaper including glossy advertisements and inserts that are delivered with the newspaper
- Mixed paper including mail, magazines, catalogs and 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, egg cartons, milk cartons, and juice boxes
- Corrugated cardboard
- Plastic bottles, jugs, and dairy tubs (no lids)

This list can be revised over time according to the following factors, as determined by the Solid Waste Division and solid waste haulers:

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

3.2.5 Process to Revise List of Designated Recyclables

The Solid Waste Division 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 Solid Waste Division will prepare recommended language for adoption by the BOCC and City Councils for those cities who contract for waste collection services. Following approval, Kitsap County Code and the applicable municipal codes are revised accordingly, and haulers and other service providers are notified regarding implementation of the new requirements.

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, Navy housing, 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

Figure 3-5 provides a visual representation of existing Level 1 (i.e., "Urban") and Level 2 (i.e.,

"Rural") service areas, as defined in Kitsap County Code Chapter 9.48. As shown in the map key, the current curbside recycling area is depicted with light green shading; darker green "dots" (often contiguous) depict single family residences within the curbside recycling boundary area. Gray "dots" depict single family residences outside of the current curbside recycling boundary.

Curbside garbage collection is currently available countywide. Curbside collection of household recyclables is available to 88% of the single family and duplex dwelling units countywide. This represents 100% of customers located in the incorporated areas, and the 59% of households located in unincorporated areas within the Level 1 service boundaries.

The 12% of households located in the Level 2 service area can recycle their materials by self-hauling them to one of the RAGFs or to OVTS.

3.2.8 In-house Programs

Waste Wise Kitsap

Kitsap County Code 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

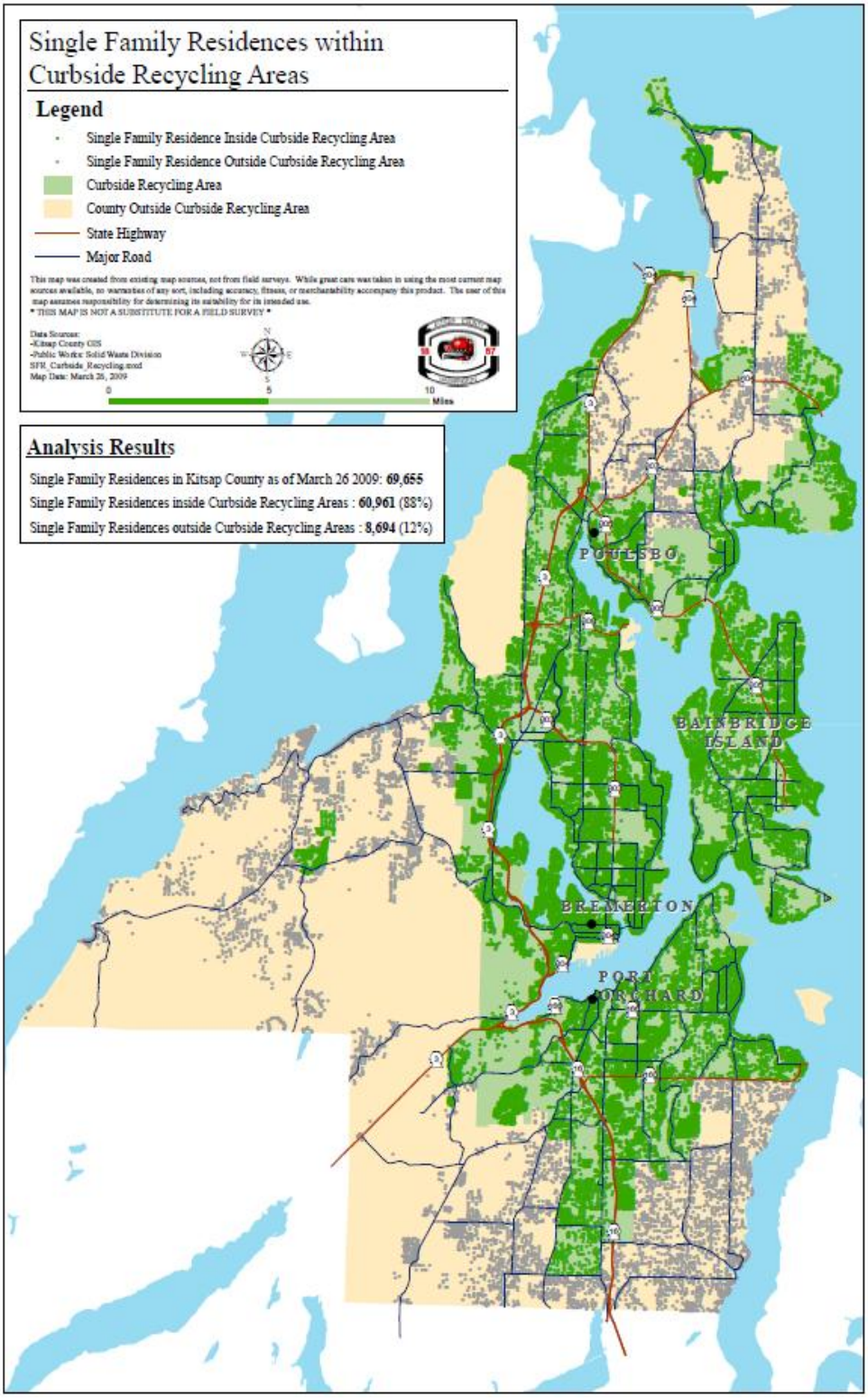
An electronic Waste Exchange enables employees from County departments to donate or obtain surplus items for re-use by other departments. The Waste Exchange intranet site encourages regular visits as a way for departments to save money. Program success is tracked to determine the amount of money saved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

3.2.9 Processing

Peninsula Recycling, a privately operated recycling company owned by Waste Management 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 recyclables are transported to OVTS, where they are consolidated and loaded into large trailers and transported to an out-of-county material recovery facility.

Figure 3-5 Curbside Recycling Service Areas



3.2.10 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.

Table 3.1 summarizes collection of various wastes and recyclables in incorporated and unincorporated areas.

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 franchised haulers are more limited in their ability to influence rate structures because rates for franchise haulers are set according to WUTC standards and guidelines.

Figures 3-6 and 3-7 show the percentage of recycling and garbage contributed by each major sector in Kitsap County.

Single Family Residential Curbside Recycling Program Participation

Single family residents generate 45% of the waste and 24% of the recyclables collected in Kitsap County.

Curbside recycling service is available to all single and duplex dwelling units inside the Level 1 Service area, or 88% of households in Kitsap County and the incorporated cities. In 2007, customers within the Level 1 service area had their three bin curbside recycling service replaced with a single 64 gallon cart. To date it appears that this change has resulted in improved participation, set-out rates, and volumes collected. Quantifying the impact of shifting the collection method can be completed once sufficient data have been collected.

Of the 88% of residents who live in the Level 1 Service Area and have curbside recycling and garbage service available to them, approximately 87% have chosen to sign up for it. Actual use (as measured by set-out rates) of the curbside program is consistently observed at 74%, except in Bainbridge Island where participation is higher, at 91%.

Additional increases are also possible in the volume of recyclables managed as recyclables instead of garbage as shown in Figure 3-8. These increases could be achieved by enhanced promotion, education, and outreach, by encouraging more residents to sign-up for curbside collection services, and by making curbside collection of recyclables more widely available.

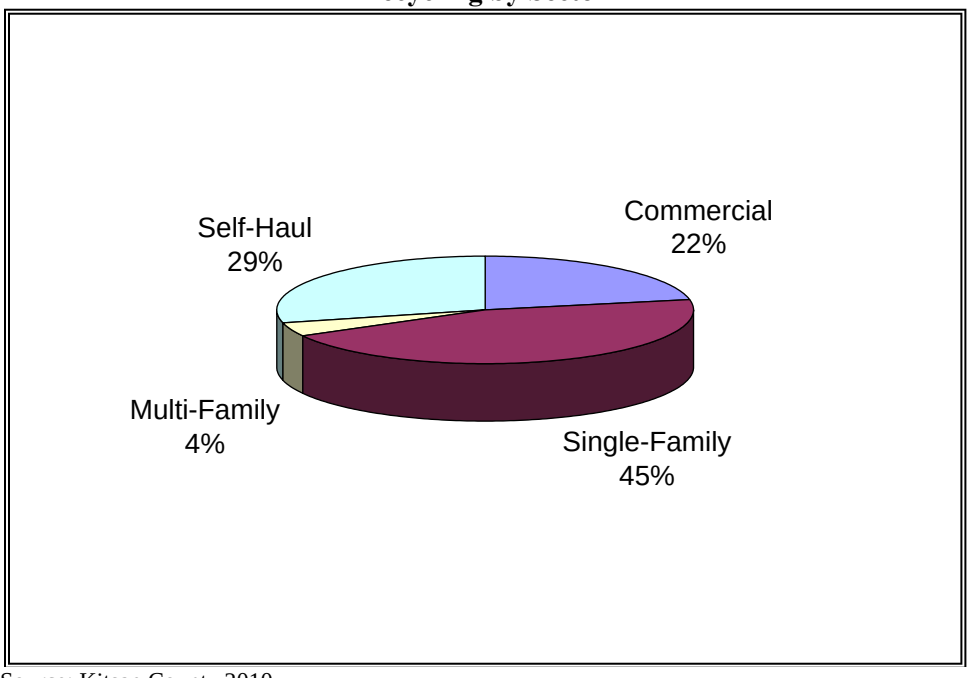
Increasing the availability of curbside recycling by making it available county-wide, and increasing the participation rate among voluntary subscribers, can also have a positive impact on diversion. It would also reduce the number of road trips to the RAGFs and to OVTS, producing fewer GHG emissions.

Table 3.1
Current Collection Services in Incorporated and Unincorporated Areas

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

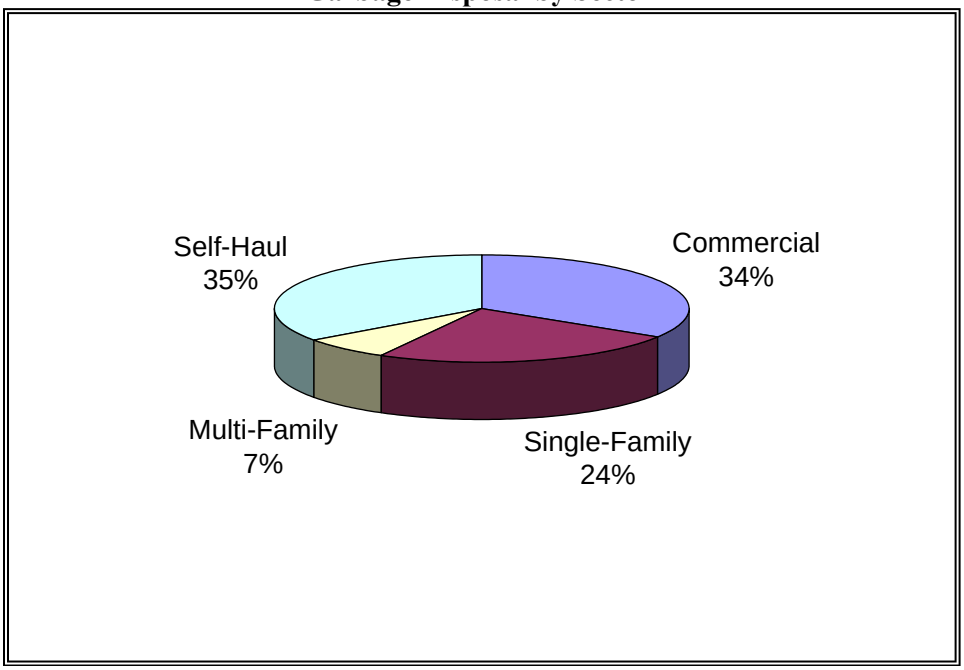
[1]Fruit and vegetable waste only.

Figure 3-6
Recycling by Sector



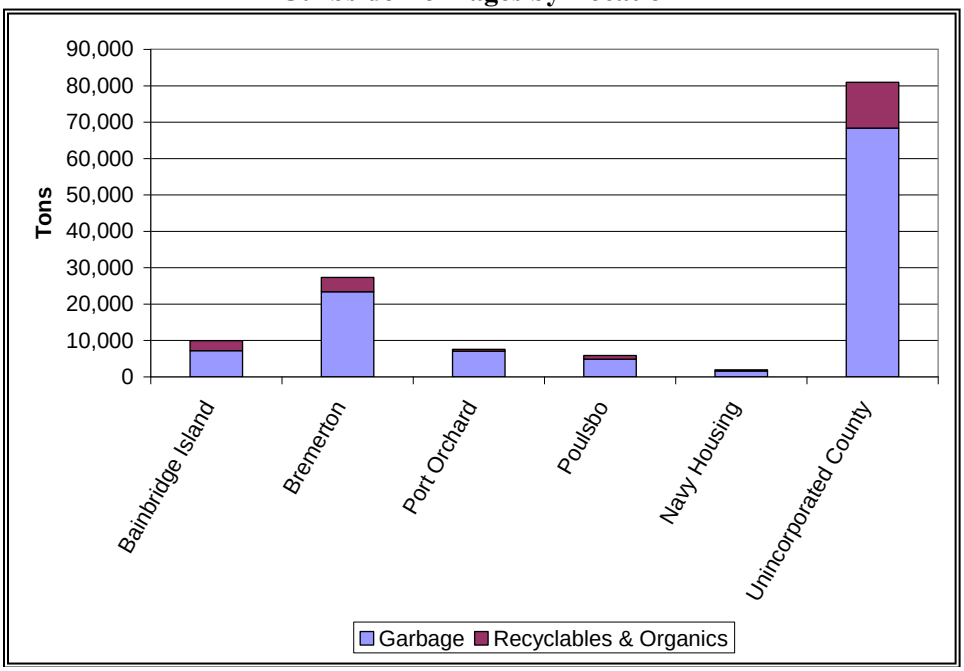
Source: Kitsap County 2010.

Figure 3-7
Garbage Disposal by Sector



Source: Kitsap County 2010.

Figure 3-8
Curbside Tonnages by Location



Source: Kitsap County 2010.

Multi-family Curbside Recycling Program Participation

Multi-family residents generate 4% of the waste and 6% of the recyclables collected in Kitsap County (Kitsap County 2008).

All multi-family buildings with 3 or more living units are charged for and provided with curbside recycling service in the Level 1 service area. Participation in multi-family recycling programs varies greatly between apartment complexes, but is generally low.

Many communities find the implementation of effective multi-family programs to be a challenge. Multi-family recycling and refuse collection tend to be regulated like the commercial sector, but the waste generated is more like the residential sector. Part of the challenge in the multi-family 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 no control over the actual recycling and disposal behavior of the tenants. A two-pronged approach including tenant education and oversight of property managers/owners is necessary to overcome these barriers. To facilitate use and collection, recycling carts should be placed in the same location as garbage dumpsters.

National studies verify that participation in recycling programs by apartment dwellers lags behind single-family programs. The Solid Waste Division conducted a multi-family recycling study, with the goal of increasing both participation rates and the quality of materials collected. The study recommendations were to provide better signage at collection locations to encourage use of single stream carts, and to increase the cart size to 96 gallons.

Commercial Recycling Programs

Commercial garbage represents approximately 34% of the waste and 22% of the recycling in Kitsap County.

Current commercial recycling rates in Kitsap County are low and offer significant potential for improvement. Participation or set-out data specific to Kitsap County is currently unavailable, but anecdotal information indicates that businesses find limited availability or flexibility in the commercial recycling services offered and 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 require haulers to provide or regulate commercial recycling services. Therefore Bainbridge Disposal, Waste Management, 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

Self-haulers account for 36% of the garbage and 29% of the recycling in Kitsap County.

The self-haul recycling program is designed to provide recycling opportunities to residents and small businesses in rural areas. The County owns a system of RAGFs, the Poulsbo Recycle Center (PRC), and OVTS. Self-haul recyclables are accepted free of charge at each facility.

RAGFs are located conveniently throughout the County. Approximately 12% of Kitsap residents live within the Level 2 Service Areas and do not have access to curbside collection of recyclables. This leaves self-hauling of recyclables as the only option for some residents.

The most common reasons customers give for self-hauling instead of signing up for curbside collection are that they have a large volume of garbage, they are going to the RAGF to recycle so they bring their garbage in the same trip, they perceive curbside collection as "too" 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.
In addition to the items collected in curbside collection programs, the RAGFs offer self-haul service for used clothing, white goods, and scrap metal. OVTS and the Bainbridge Island RAGF 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.

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, among others. 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 Waste Management, who has the contract to haul, process, and market the

County's recyclables. In addition, residential customers of WUTC-regulated haulers share in any financial benefit associated with processing and selling curbside recyclables. Customers receive a credit on their bill which reflects positive returns (if there are any) from marketing recyclables collected at the curb.

3.2.11 Promotion, Education & Outreach

The Solid Waste Division 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, an internet capable kiosk, theater and 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 Solid Waste Division 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.
- Expanding curbside recycling boundaries so that service is available county-wide.
- Adding items to the list of materials that can be collected and processed in curbside recycling carts.
- Adding items to the list of materials that can be collected and processed at the RAGFs and OVTS.
- Using city solid waste contracting authority to specify the availability and minimum materials to be collected from commercial accounts within city boundaries, and encouraging WUTC haulers to provide affordable recycling services to commercial accounts in unincorporated areas of the County.
- Requiring single family residential customers to pay for garbage and recycling service and/or including recycling service as part of the cost of garbage service.
- Ensuring that new multi-family 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.
- Developing voluntary and/or mandatory programs to increase the effectiveness of multi-family 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.

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 the commercial sector.

6) Work with haulers 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 lifecycle 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) Expand the availability of curbside recycling countywide.

2) 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.

3) 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) Use adaptive management, 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.

4) 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) Sponsoring or promoting re-usable products and waste exchange programs such as 2Good2Toss.

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 that publicly recognize individuals, businesses, and agencies that exercise leadership and accomplishment in waste reduction, recycling, and environmental protection.

5) 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.

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

7) Set rate structures at Recycling and Garbage Facilities 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.

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

9) 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.

10) 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) 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.

11) Work with city and county agencies to adopt building and zoning ordinances that incorporate technical review requirements to assure that adequate recycling space and screening enclosures are included in new or remodeled multi-family and commercial projects prior to issuing permits, and require the recycling companies to pick up this material at the designated area.

12) Distribute County-developed education materials to multi-family complexes on an annual basis. Support the adoption of rate-based incentives that encourage participation.

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

14) 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.

15) Work cooperatively with commercial recycling service providers to develop a methodology for monitoring the diversion of recyclables from the commercial waste stream.

16) If statewide waste diversion goals are not reached by 2015, 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.

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CHAPTER 4 - ORGANIC MATERIAL

4.1 INTRODUCTION

Organic material such as food and yard waste represents approximately 18 – 27% of the waste stream depending upon the measurement method and community environment. 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, 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. Some people even recover energy by turning organic materials into bio-diesel or using small scale anaerobic digesters. 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 retains water and supplies humus, nutrients and beneficial micro-organisms.

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. This chapter incorporates information from an organic waste management study completed by the Solid Waste Division in 2006 (Solid Waste Division 2006), stakeholder input, and analysis of experiences elsewhere in Washington State and the Pacific Northwest.

4.1.1 Planning Issues

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

- What actions should the Solid Waste Division 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" (70-95.010(10) RCW)?
- Are existing programs sufficient to achieve Solid Waste Division recycling and diversion goals?
- How can the Solid Waste Division 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 Solid Waste Division 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 Solid Waste Division support emerging energy technologies that make use of organic materials?
- How can the Solid Waste Division support the Puget Sound Clear Air Agency's recommendations related to further restrictions of outdoor burning?

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
WAC 173-350, Minimum Functional Standards for Solid Waste Handling (MFS)	Kitsap County Health District Ecology – Solid Waste Program
WAC 173-216, State Waste Discharge Permit Program	Ecology – Water Quality Program
WAC 173-220, National Pollutant Discharge Elimination System Permit Program	Ecology – Water Quality Program
WAC 173-240, Submission of Plans and Reports for Construction of Water Facilities	Ecology – Water Quality Program
WAC 173-400, General Regulations for Air Pollution Sources	Puget Sound Clean Air Agency
WAC 173-308, Biosolids Management	Ecology – Solid Waste Program Kitsap County Health District (via MOU with Ecology)
WAC 197-11, State Environmental Policy Act	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).

Composting yard debris and the vegetable component of food waste at home creates compost.

Composting reduces waste, avoids 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.

In addition, 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 (EPA 2008a).

Composting is also an attractive 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 (EPA 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 construction & demolition debris (C&D), is described in Chapter 5, C&D.

The amount of organic material generated in Kitsap County is significant. Between about 200,000 and 470,000 tons of organic materials were generated in 2006 (Solid Waste Division 2006). The wide range in tonnage estimates is due to uncertainty about the amount of organic material generated that is not disposed of in the municipal waste stream, most notably, landclearing debris, which is estimated at 120,000 to 380,000 tons generated a year, depending on construction activity.

Recycling and Diversion Rate

Organic material (not including wood) accounted for approximately 27% of all waste disposed in the municipal waste stream in 2006. Table 4.2 summarizes estimated amounts or ranges of organic material generated, recycled, and disposed in Kitsap County in 2006.

The commercially hauled residential, self-hauled commercial, self-hauled residential, and restaurant sectors account for over 84% (36,755 tons) of the organic material (not including wood) disposed in the municipal waste stream (Solid Waste Division 2006).

Organic Material Projections

By 2030, the population of Kitsap County is expected to increase to about 359,000 from about 259,000 in 2008 (Kitsap County 2007). This Plan assumes that organic material generation will rise along with population, primarily in the food, compostable paper, and biosolids categories. The generation of landclearing 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. As a result, this Plan assumes that yard debris generation will rise, but at a rate lower than the anticipated rise in population.

Table 4.2 shows an analysis of the composition and sources of organic materials in Kitsap County's waste stream in 2006 and 2007. Table 4.3 summarizes estimated organic material generation rates at four points during the period 2008 to 2030, based on 2006 organic material tonnage estimates, and mid-range population projections developed by Kitsap County. The projection uses a medium estimate for landclearing waste.

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 (PSCAA 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. Among the many advantages of home composting is that it reduces cost to homeowners and to local government while helping citizens make an active commitment to sustainable living.

The Solid Waste Division 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 organic materials in the trash. The Solid Waste Division also provides support and education to encourage use of both options.

Approximately 5,000 tons of yard debris and 33,000 tons of food waste is disposed each year, while approximately 32,000 tons of yard debris and 220 tons of food waste is recycled. This implies a diversion rate of 87% for yard debris and 1% for food waste (Solid Waste Division 2006). The Solid Waste Division suspects that the 87% reported diversion rate for yard debris is much higher than it is in reality, and that much of the reported diversion actually consists of burning, dumping, and other less desirable handling methods (Peters 2008).

The Solid Waste Division sees a need to increase participation in home composting, particularly when the ban on burning residential yard debris is expanded. Current activities include working with schoolchildren to turn lunch scraps into compost in the recently launched Food to Flowers program, support for Master Gardeners – Master Composters training, teaching natural lawn and gardening techniques, and helping residents reduce dependence on fertilizers and pesticides (thereby reducing their exposure to toxics and reducing the toxicity of the waste stream).

Table 4.2
Organic Material in Kitsap County (2006/2007) in Tons

TONS	Food[1]	Land clearing	Yard Debris	Biosolids[2]	Compostable Paper[1,3]	Fisheries	Total
Total Generation	32,780 --- ---	120,000 to 380,000	37,539 --- ---	10,000 --- ---	6,042 --- ---	455 --- ---	206,816 to 466,816
Recovery	223	67,245	32,479	10,000	0	455	110,402
Home Composted[4]	unknown	N/A	unknown	N/A	unknown	N/A	unknown
Burned[4]	N/A --- ---	50,000 to 310,000	unknown --- ---	N/A --- ---	Unknown --- ---	N/A --- ---	50,000 to 310,000
Disposal	32,557	N/A	5,060	0	6,042	N/A	43,659
Grocery stores	2,186	---	82	---	137	---	2,405
Schools	378	---	503	---	112	---	993
Restaurants	9,479	---	34	---	372	---	9,885
Wholesale - nondurable	93	---	31	---	26	---	150
Correctional facilities	71	---	1	---	45	---	117
Assisted Living	186	---	2	---	118	---	306
Military - common dining	612	---		---		---	612
Military (residential)	804	---	241	---	356	---	1,401
Military (nonresidential)	101	---	86	---	108	---	295
Hospitals	423	---		---	202	---	625
Self-hauled residential waste	6,034	---	1,608	---	665	---	8,307
Self-hauled commercial waste	598	---	509	---	641	---	1,748
Commercially hauled residential waste	11,592	---	1,963	---	3,260	---	16,815
Recycle Rate	1% --- ---	56% to 18%	87% --- ---	100% --- ---	0% --- ---	100% --- ---	53% to 24%

Source: Solid Waste Division. 2006.

[1]Residential collection of vegetable waste and food-soiled paper is available in burn ban areas since 2005. The Solid Waste Division reports that sign-ups for yard/food waste collection service and awareness of the program's existence is currently low (Peters 2008). See Table 4.5 for 2007 estimates of recovery through the combined yard /food waste collection program.

[2]Burning and home composting are not appropriate management methods for biosolids.

[3]Compostable paper includes paper towels, paper plates, waxed paper, tissues, and other papers that were soiled with food during use (e.g., pizza box inserts).

[4]Reliable information is not available for the amount of waste burned or home composted in Kitsap County. According to several surveys, a large percentage of Kitsap County residents compost to some extent at home. However, no numerical data exists to quantify an estimate of how much is diverted.

Table 4.3
Projected Organic Material in Kitsap County in Tons

Year	Food	Land clearing	Yard Debris	Biosolids	Compostable Paper	Fisheries	Total Tons
2006	32,780	250,932	37,539	10,000	6,042	455	337,748
2012	35,645	256,599	40,820	10,874	6,570	495	351,004
2018	38,853	262,394	44,494	11,853	7,161	539	365,295
2024	42,503	268,320	48,674	12,966	7,834	590	380,888
2030	46,766	274,380	53,556	14,267	8,620	649	398,237

Collection

As good as it is, composting at home is not for everyone. Therefore, the Solid Waste Division also ensures the availability of curbside yard waste collection and drop-off recycling opportunities throughout the County.

Waste Management and Bainbridge Disposal offer optional, fee-based curbside yard and vegetative food waste collection to households within the permanent burn ban boundaries shown on Figure 4-1. Yard debris, vegetable food and garden waste, 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 the same material as garbage (90 gallons of yard debris collected at curbside costs less than 32 gallons of garbage).

Participation in the curbside program is relatively low, as shown in Table 4.4. Some possible reasons for the low sign-up rate is that even though it may save them money, customers may perceive the program as an extra charge over and above garbage collection service, 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 to 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 possible advantage to them.

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

Processing

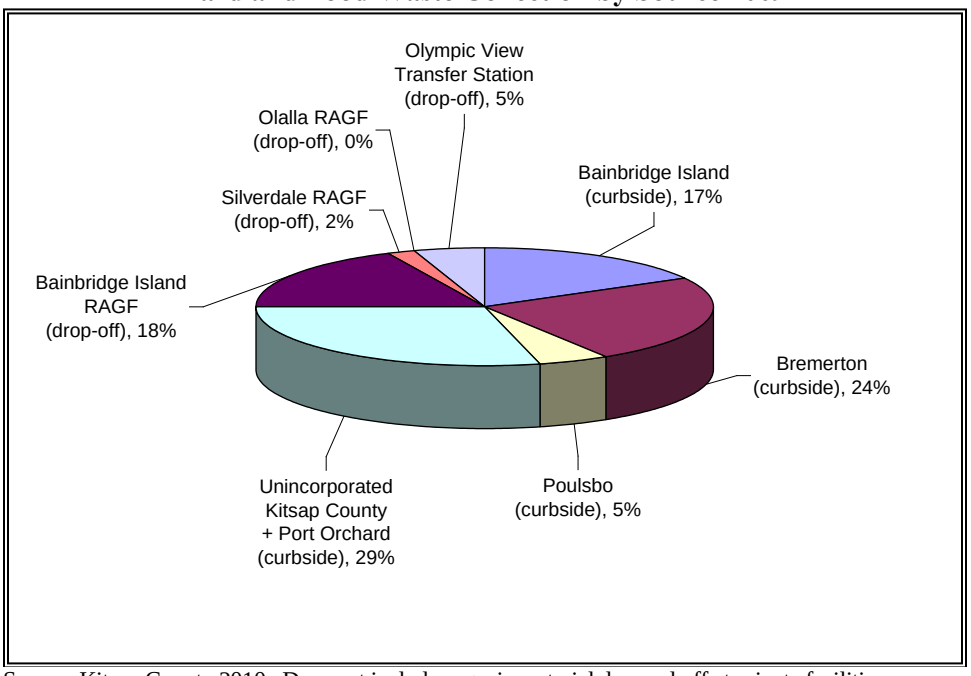
The Puget Sound Clean Air Agency expanded the landclearing debris burn ban countywide in September 2009. It is estimated that 50,000 to 310,000 tons of landclearing debris had been burned annually (Solid Waste Division 2006). Table 4.5 lists area businesses that accept landclearing debris or offer mobile chipping and grinding services. These businesses offer an alternative to burning.

Table 4.4
Household Participation in Kitsap County Yard Debris and Vegetative Food Waste Collection Program

	Un-incorporated Kitsap County	City of Bremerton	City of Port Orchard	City of Poulsbo	City of Bainbridge Island	Total
Total households	58,382	9,920	2,095	2,493	7,976	80,866
Garbage accounts	39,778	8,785	1,830	2,547	5,816	58,756
Yard waste accounts (service)	3,510	2,149	185	891	760	7,495
Yard waste accounts % of garbage accounts	9%	24%	10%	35%	13%	13%
Yard waste accounts % of total households	6%	22%	9%	35%	9%	9%

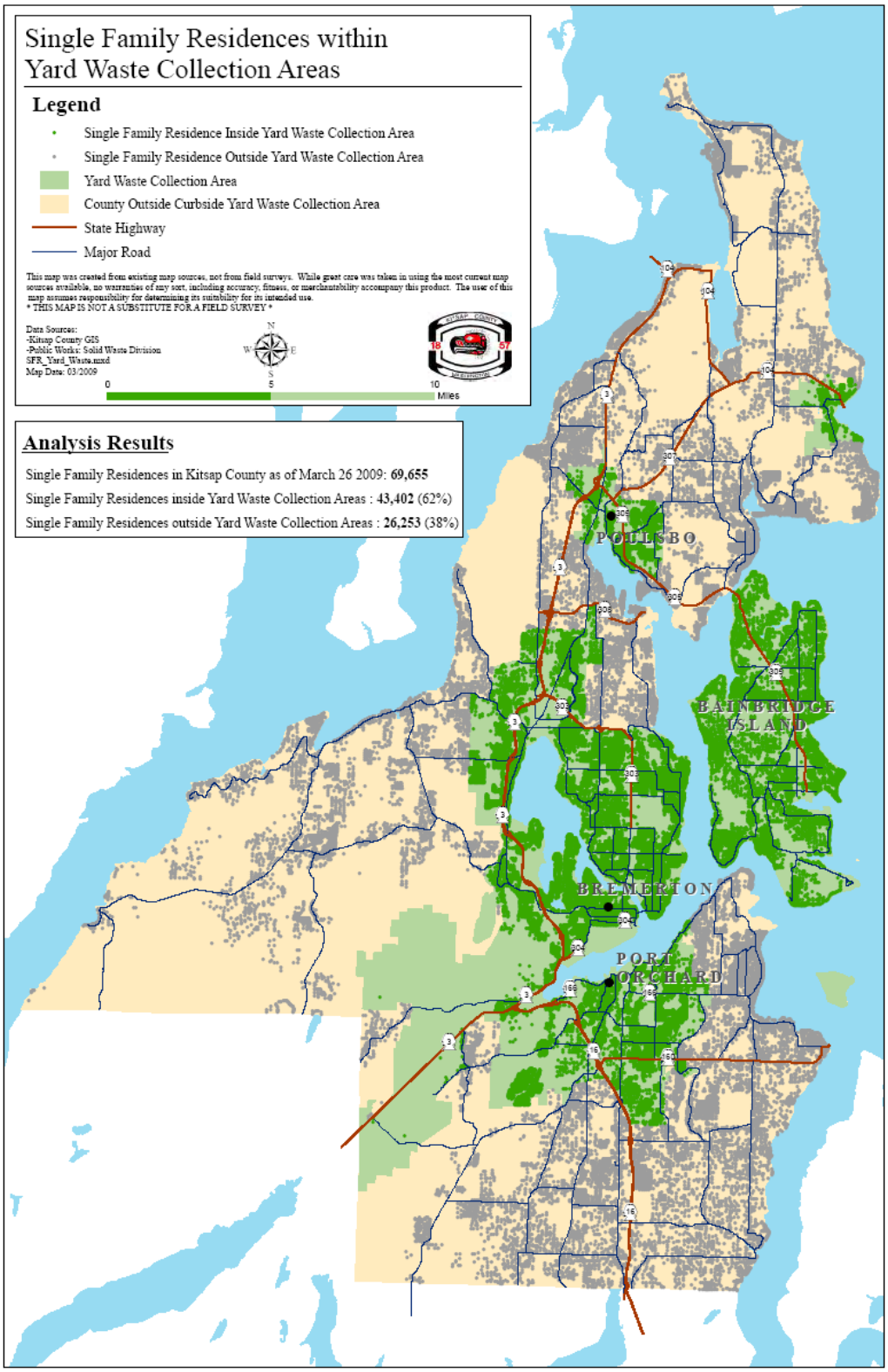
Source: Kitsap County 2008

Figure 4-1
Yard and Food Waste Collection by Source 2009



Source: Kitsap County 2010. Does not include organic material dropped off at private facilities.

Figure 4-2
Existing Curbside Yard and Vegetative Food Waste Collection



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 reuse end markets.

Current conditions favor hog fuel as an end market for landclearing debris due to the shortage of post-industrial fiber for biomass combustion boilers and high energy prices.

Table 4.5
Land-Clearing Debris Recyclers, 2009

Location	Comment
A&L Topsoil, Poulsbo	Small stump grinder, limited capacity
Emu Compost Facility, Hansville	New facility, large capacity
The Soil Factory, East Bremerton	Limited capacity
Tucker's Topsoil, Suquamish	No solid waste permit, located on tribal land
North Mason Fiber, Belfair	Large capacity
Peninsula Topsoil, Belfair	Large capacity, grinding capability
Allen Shearer Trucking & Landscape, Belfair	Limited capacity, mostly processes material from own projects
Allen Shearer Trucking & Landscape, Belfair	$2,000 - $3,500 per acre
Cleaver Construction, Poulsbo	$2,000 - $3,500 per acre
Emu Composting, Kingston	$2,000 - $3,500 per acre
Outback Hauling, Poulsbo	$2,000 - $3,500 per acre
Rainier Wood Recyclers, King County	$2,000 - $3,500 per acre

Source: Puget Sound Clean Air Agency 2009.

4.2.3 Promotion, Education & Outreach

The Solid Waste Division 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, an internet capable kiosk, theater and 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.

- Expanding the types of materials accepted in residential and commercial collection programs to include meat, fish, and dairy.
- Providing food waste collection service to groceries, restaurants, institutional kitchens, and other large scale generators of relatively uncontaminated food waste.
- Provide 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.
- 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 70-95.010(10) RCW which specifies that local government should work toward eliminating disposal of residential and commercial yard debris in landfills by 2012.

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

3) 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.

4) 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) Expand organic materials collection programs by adding additional compostable papers and foods to the existing collection service. To achieve additional diversion, include meat, fish, and dairy waste in the program.

b) Educate Kitsap residents about the greenhouse gas reduction benefits associated with composting and replacing synthetic petroleum-based fertilizers with compost.

c) Evaluate methods of increasing participation in curbside organic materials collection services, and then implement the selected options.

d) 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 wastes, into composting and/or energy production.

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

7) Continue to coordinate activities with the KCHD 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 wastewater 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 2015, 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.

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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.

Construction and demolition (C&D) debris represents 23% 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.EPA 2009a.) 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 Solid Waste Division recycling and diversion goals?
- How can the Solid Waste Division encourage C&D waste reduction and diversion and support the development of local C&D processing capacity?
- What should the Solid Waste Division'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 debris consists of the materials generated during the construction, renovation, and demolition of buildings, roads, and bridges. 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 23%, by weight, of the disposed waste stream in Kitsap County. (Thurston County 2005) This means that increasing C&D recycling can have a significant impact on reducing disposal.

Of the C&D debris that is recycled, heavy materials such as asphalt and concrete represent 64%. 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. 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, yet 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.

151 tons of asbestos were handled at OVTS in 2008, a 53% decline from the previous year. The year-over-year decline could be the result of a reduction in asbestos abatement activities, an increase in improper management, increased diversion to out-of-county facilities, or other factors.

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 growth of the internet has greatly enhanced this process. Building materials are advertised for free or for sale via the County's webpage link to Ecology's 2Good2Toss website and on online community websites. Used building materials are also advertised for sale on Craigslist, online classifieds, in print media such as the Little Nickel, and are for sale at the annual Kitsap County Home and Remodel Show.

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. Builders Bargains, 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, 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 (EPA 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 Leadership in Energy and Environmental Design (LEED) and Built Green™ are fast becoming 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 (RCW 39.35D).

The Home Builders Association of Kitsap County manages the local Built Green™ program, which sets standards and manages a certification program that is designed for residential construction. Approximately 30-40 builders per year participate in the program, and about 950 properties are registered in Kitsap County (HBA KC 2008).

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.

Imaginative and useful "design for disassembly" ideas that came out of national life-cycle Building Challenge design competitions have included:

- A **recreational building** that breaks into 3 parts for transportation by truck to a new site
- The **green mobile home** with detachable rooms allowing for additions or remodeling
- A **plug-in home** with a specialized connector joint, allowing components to be unplugged quickly and without damage
- **Zip tape** that allows drywall to be easily removed and re-used

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 jobsite
- 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. Wastes, such as creosote-treated wood, gypsum, and roofing, are often disposed, since no recycling options are available.

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. Companies transporting commercial recycling are required to register with the Department of Ecology (WAC 173-345), and obtain a common carrier permit through the Washington Utilities and Transportation Commission (WUTC) (RCW81.80). The source-separated recyclable materials must be taken to a recycler, not to a solid waste transfer station or landfill. Regulations regarding transport of source-separated C&D recyclables to a materials recovery facility have not yet been finalized.

Several companies have identified themselves as C&D recyclers and/or haulers serving Kitsap County, including Allen Shearer Trucking & Landscape Supplies, Bainbridge Hauling, Bainbridge Disposal, Democon, Glacier Recycling, Waste Management, Inc., and the City of Poulsbo. Most of these businesses serve the southern two-thirds of the County, but some offer collection services in areas to the north if generators are willing to pay a premium for hauling (typically for projects where LEED Green Building Rating System certification is important). This list may not be all-inclusive, nor does it constitute an endorsement of their services by the Solid Waste Division. Only Bainbridge Disposal, Waste Management, Inc., 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.

To date, no private operator has chosen to develop an in-county C&D sorting facility. Therefore the Solid Waste Division is considering the option of working with Waste Management 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. In order to support increased C&D recycling, the Solid Waste Division is also considering offering a reduced rate for "clean" C&D debris (i.e. C&D debris loads that are not contaminated with other garbage) delivered to OVTS. This would give generators an incentive to separate C&D debris from garbage.

Table 5.1 lists the major facilities that handle specific source-separated C&D materials. To date, there is no facility with the ability to separate co-mingled C&D so more of it can be recycled.

Table 5.1
Selected Processors of C&D Materials Serving Kitsap County

Material	Processor
Asphalt/concrete	Ace Paving, Allen Shearer Trucking & Landscape Supplies, Kitsap Reclamation and Materials, Peninsula Topsoil, Fred Hill Materials, Recovery 1, Glacier Recycle
Gypsum	New West Gypsum, Recovery 1, Glacier Recycle
Metals	Navy City Metals, Kitsap Recycling (pickup service), Horseshoe Lake Auto Wrecking, Lee's Recycling, Recovery 1, Glacier Recycling
Clean wood	Allen Shearer Trucking & Landscape Supplies, North Mason Fiber, Emu Composting Facility, Recovery 1, Glacier Recycling, Rainier Wood Recyclers
Used building materials	Builders Bargains, 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 & 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 Washington State Recycling Survey, approximately 104,928 tons were recycled in 2006 (Powell 2008). Asphalt and concrete are processed at several locations including Ace Paving, Allen Shearer Trucking and Landscape Supplies, Kitsap Reclamation and Materials, Fred Hill 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.

An alternative worthy of consideration is to consolidate source-segregated gypsum for shipment at a facility such as OVTS so that transportation costs can be shared among users.

Metals

Naval facilities are the largest generators of scrap metal in Kitsap County. According to Ecology data, approximately 17,956 tons of ferrous metals and 2,969 tons of nonferrous metals were recycled in 2006, though the percentage of metals generated as C&D was not reported (Powell 2008). These metals are generated primarily from ship deconstruction.

Clean Wood

Clean wood includes urban wood such as pallets and crates, and wood from construction projects. Clean wood is recycled in large quantities in Kitsap County. According to a 2006 organic waste study, approximately 35,000 tons of clean wood were generated, of which 52% was recovered for recycling (Kitsap 2006). 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 Emu Compost Facility (Kitsap 2006). North Mason Fiber alone estimates it can chip at least 50,000 tons of clean wood waste per year into hog fuel (Kitsap 2006).

The demand for clean wood generated in Kitsap County is currently strong due to high fuel prices and shortage of virgin wood sources. The primary market for recycled clean wood is currently biomass fuel (hog fuel) but strong demand also exists for secondary wood fiber products.

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

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.

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. The Northwest Product Stewardship Council (of which Kitsap County is a member) is working to strengthen the market for recycled carpet and potentially to attract private processors to operate here in the Pacific Northwest.

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) Partner with other public, private, and non-profit entities to encourage adoption of green building techniques by residents, builders, contractors, building owners, and government agencies in order to leverage the environmental benefits that can be gained by adopting a multi-disciplinary approach to resource management.

3) Develop incentives and rate structures that encourage green design, construction, and de-construction, and to identify and support removal of regulatory barriers that inhibit implementation of environmentally preferable construction and demolition practices.

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 Home Builders Association of Kitsap County 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 2015, 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.

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CHAPTER 6 - PROMOTION, EDUCATION, AND OUTREACH

6.1 INTRODUCTION

The Solid Waste Division 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, household hazardous waste, 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 Solid Waste Division best enhance existing programs by using new technologies and marketing methods to communicate most effectively with target audiences?
- How can the Solid Waste Division monitor the effectiveness of various promotion, education, and outreach initiatives?
- What should the Solid Waste Division'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?

6.2 EXISTING PROGRAM ELEMENTS

Summaries of existing Solid Waste Division promotion, education, and outreach programs are provided below (Kitsap County 2008). Outreach programs currently target residents, students, and businesses.

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

Kitsap 1

Kitsap 1 provides one-stop service for customers who need information about Solid Waste programs. They provide information about where to take solid waste and recyclables, hours of operation at various facilities, resources for household hazardous waste and business waste management, and answer assorted inquiries related to garbage and recycling. Kitsap 1 provides breaking news during emergencies and inclement weather, and serves as a clearinghouse for publicity related to the Public Works Department's programs.

Solid Waste Division Website

The Solid Waste Division 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 24/7 information on many topics of interest.

School and Youth Activities

The Solid Waste Division 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. Solid Waste Division school programs align with the Essential Academic Learning Requirements.

Ongoing communications are mailed and emailed to school principals and teachers. The Solid Waste Division partners with other state and local agencies including the City of Bremerton, Olympic Educational Service District #114, Puget Sound Energy, the E3 consortium for comprehensive environmental education (E3 Washington 2009), and others in order to coordinate school and youth education programs.

Waste Wi$e @ Work Sustainability Technical Assistance Program

A variety of recycling collection services are available to Kitsap County businesses. The Solid Waste Division provides web-based technical assistance to help users determine the best options to prevent waste, increase recycling, and increase the use of environmentally preferred products. This program has the potential to expand and offer telephone or on-site consultation.

Waste Wi$e Communities

Waste Wi$e Communities is a branded waste reduction and recycling initiative that targets residents, businesses, not-for-profit organizations, and schools. In 2009 one of Waste Wi$e Communities' major initiatives was an 8-page newsletter delivered to single and multi-family households throughout Kitsap County. The well-received newsletter provided useful information about Solid Waste Division programs, alternatives to the use of toxics, and tips for preventing waste.

Recycling Consortium

Through the Recycling Consortium, Kitsap County and other Puget Sound jurisdictions work together to increase recycling rates by reviving community commitment to recycling. Seattle Public Utilities initially coordinated this group as part of an awareness campaign prior to the enforcement of their ordinance prohibiting paper in garbage cans.

2Good2Toss

The 2Good2Toss program operates on behalf of the twenty Washington cities and counties who are members. It promotes re-use and reduces the amount of good, useable materials that would otherwise be disposed. The 2Good2Toss website is a venue for residents and businesses to sell or give away used household items, surplus business fixtures, and building materials. Residents or businesses from Kitsap County and residents of the North Mason School District may use the Kitsap County portion of the website. Success is tracked by monitoring waste diverted, avoided GHG emissions, dollars saved by avoiding transportation and disposal costs that would have occurred if the items were disposed instead of

exchanged, and the number of users who choose to receive additional information about waste reduction and recycling programs.

Environmentally Sustainable Lawns and Gardens

Healthy plants grown in healthy soil need less water, fertilizer, pest control, and maintenance. This program emphasizes proper soil preparation and the use of drought and disease resistant plants, and grass seed that are well adapted to local conditions.

The website ftp://kcwppub3.co.kitsap.wa.us/pw/sw/default.htm includes information on native plants suited to Kitsap County soils and conditions. It also includes information on pesticide-free controls for home and garden pests. The Natural Yard Care booklet provides a variety of ideas for sustainable lawn and garden management. The Down To Earth booklet is a step by step guide on how to compost.

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 Northwest Product Stewardship Council (NWPSC), a regional planning group of local governments from Western Washington and Oregon who develop and share promotional materials to help educate the public about stewardship programs. Current NWPSC projects address electronic wastes, paint, mercury-containing products, and unused medications.

Green Cleaning

This program teaches about greener alternatives to household chemical cleaners. Demonstrations of green cleaning products take place at County departments and community events, including septic workshops that are held in partnership with the Surface and Stormwater Management Program, KCHD, and Washington State University Extension Service.

Small Quantity Generator Technical Assistance Program

SQG technical assistance is shared between the Solid Waste Division and KCHD. Program activities are discussed in Chapter 11. Key promotion, education, and outreach activities are summarized below.

Business Pollution Prevention Program: KCHD's Business Pollution Prevention Program includes the following elements: providing business with onsite technical assistance; the EnviroStars program; SQG education and outreach; and SQG complaint response and enforcement.

Onsite Business Technical Assistance: KCHD staff conducts business technical assistance visits at selected businesses, industry sectors, or specific locales each year.

EnviroStars: KCHD's EnviroStars Program 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. Businesses may become certified at a 2 to 5 star rating. Recognition includes certificates, window decals, use of the EnviroStars logo for marketing, and free publicity. Since the program began in 1997, more than 100 businesses have been certified by EnviroStars.

Education and Outreach: KCHD provides education and outreach for businesses through presentations to business groups, training workshops, and participation in booth events where SQG information is provided to businesses.

Special Events

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

- Earth Day
- America 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, Solid Waste Division 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 countywide 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 applicable regulations.

5) Seek out partnerships with other public, private, and non-profit entities as appropriate to reaching 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 KCHD Business Pollution Prevention Programs 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.

6.5 REFERENCES/RESOURCES

E3 Washington. 2009. Website accessed at http://www.e3washington.org/about-e3-washington/objectives-outcomes

Kitsap County Department of Public Works, Solid Waste Division. 2008. *Kitsap County Department of Public Works, Solid Waste Division 2007 Annual Report.* Prepared by the Kitsap County Department of Public Works, Solid Waste Division.

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 Questions

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

- Are existing programs sufficient to achieve Solid Waste Division recycling and diversion goals?
- Does the current level of service for curbside recycling meet the needs of all Kitsap County residents?
- What means are available to reduce the use of fuel and the greenhouse gas and other emissions associated with collection?
- 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 County encourage customers to use available curbside collection services instead of self-hauling their typical household wastes and recyclables?

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 WAC 81.77 and WAC 480.70. Collection from commercial customers is regulated under RCW 81.80. Both statutes are administered by the Washington Utilities and Transportation Commission (WUTC).

Under RCW 81.77, 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.

The 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 unincorporated area 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 Solid Waste Division will re-evaluate whether mandatory collection of curbside garbage should be considered. This would require the formation of a solid waste collection district pursuant to RCW 36.58A.

Recycling: Curbside recycling has been available since 1994. It is available to all single family residential units located in the Level 1 Service Area. This represents 88% of the County's residential properties.

Where curbside recycling service is available, participation is voluntary, and the cost of curbside recycling is included in the cost of garbage service. Recycling helps customers reduce the level of garbage service that they would otherwise need, thereby saving them money on the cost of their garbage bill.

Approximately 8,700 households are located in the Level 2 Service Area, and do not have access to curbside recycling service. In order to recycle, these residents must self-haul to a facility such as the RAGFs, OVTS, or the Poulsbo Recycle Center.

Yard and food debris: Curbside yard and food waste collection service is available to the 62% of single family residences in the County, which are located inside of the residential burn ban boundary. The 26,200 households located outside of the residential burn ban boundary do not have access to curbside yard and food waste collection. Therefore, these residents must compost n-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. Waste Management collects residential 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 (OFM 2009).

Table 7.1
Residential Collection Service Summary

Area	Service Provider	Garbage		Recycling		Yard & Food Debris
		Frequency	Container Size	Frequency	Materials Collected	
Level 1 Service Area Unincorporated Kitsap County	Waste Management	Voluntary: weekly, every-other-week (EOW), monthly, or on-call pick-up	20, 32-gallon cans; or hauler-provided 32, 64, or 96-gallon cart	EOW single stream recycling: hauler-provided 64-gallon cart	Aluminum & steel cans, mixed paper, all plastic bottles, jugs, & dairy tubs, glass, newspaper, magazines, & cardboard	Inside burn ban boundary, EOW grass, leaves, branches <4" diameter and <4' long, houseplants, windfall fruit, vegetable food waste, shredded paper
Level 2 Service Area Unincorporated Kitsap County	Waste Management	Voluntary: weekly, every-other-week (EOW), monthly, or on-call pick-up	20, 32-gallon cans; or hauler-provided 32, 64, or 96-gallon cart	Curbside collection not available	Curbside collection not available	Curbside collection not available
Bainbridge Island	Bainbridge Disposal[1]	Voluntary: weekly and monthly	20, or 32-gallon can	EOW single stream recycling: hauler-provided 64-gallon cart	Same as Level 1 Service Area	Same as Level 1 Service Area
Bremerton	Waste Management	Mandatory: weekly	20, 32-gallon can or hauler-provided 36, 64, or 96-gallon cart	EOW single stream recycling: hauler-provided 64-gallon cart	Same as Level 1 Service Area	Same as Level 1 Service Area
Port Orchard	Waste Management	Mandatory: weekly	hauler-provided 32, 64, or 96-gallon cart	EOW single stream recycling: hauler-provided 64-gallon cart	Same as Level 1 Service Area	Same as Level 1 Service Area
Poulsbo	City of Poulsbo – garbage; Bainbridge Disposal – recycling and yard debris	Mandatory: weekly	10, 20, or 32-gallon can	EOW single stream recycling: hauler-provided 64-gallon cart	Same as Level 1 Service Area	Same as Level 1 Service Area

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

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, RCW 81.80 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 recycling service is available on a limited basis in the unincorporated area. For instance, paper and cardboard recycling is readily available, but many businesses find that mixed container recycling is cost-prohibitive. Collection of yard debris or food waste from commercial generators is not widely available, but may be expanding as processing capacity becomes available in the north-end, so that haulers can begin to offer affordable collection service. The ability to divert food waste from restaurants, groceries, and industrial kitchens into composting or energy recovery programs depends on healthy processing and collection systems.

7.2.3 Self-Haul System

In 2007, approximately 37% of all garbage in Kitsap County was disposed via the self-haul system by people who deliver materials directly to the RAGFs or OVTS. 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.

Rates at the County-owned solid waste facilities that serve self-haulers are codified in Chapter 9.16 KCC. The most recent change went into effect in August 2001. Services have been expanded and costs have increased since that time. A Solid Waste Rate Study is proposed so that revenue needs can be more fully analyzed and the impact of rate structures on ratepayers can be analyzed.

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. The cost of providing self-haul service went up significantly in 2009.

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 Solid Waste Division 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 small 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)** Work with the Puget Sound Clean Air Agency and WUTC to assist haulers to take measures that increase mileage and reduce emissions.
- **c)** Promote operations and maintenance procedures that reduce fuel use and decrease emissions associated with heavy equipment and rolling stock, through existing public-private partnership contracts.

2) Expand availability of curbside recycling countywide.

3) 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. To achieve additional diversion, include meat, fish, and dairy waste in the program.
- **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.

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) 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.

6) 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

Office of Financial Management (OFM). 2009. Annexations and Municipal Boundary Changes, website accessed at http://www.ofm.wa.gov/pop/annex/annexrpt/default.asp

CHAPTER 8 - TRANSFER SYSTEM FOR WASTE AND RECYCLABLES

8.1 INTRODUCTION

This chapter evaluates the transfer system for waste and recyclables. Kitsap County has six facilities for the purpose of receiving and transferring solid waste and recyclables. There are four drop-box facilities, known as Recycling & Garbage Facilities or RAGFs, one facility that accepts recyclables but does not handle wastes, and the Olympic View Transfer Station (OVTS). They are listed below as follows:

- Bainbridge Island RAGF
- 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. They include small businesses and individuals who haul their own wastes and recyclables rather than using curbside collections services. Customers at RAGFs unload wastes by hand and place them into open-top roll-off containers.

OVTS accepts wastes from self-haulers and from commercial vehicles (i.e. garbage trucks) that are designed to tip wastes on to a floor where it can be pushed with a loader into a larger transfer container. Bainbridge Island RAGF is designed to accommodate self-haulers and the commercial vehicles operated by Bainbridge Disposal. Due to size and permit constraints, other commercial tipper trucks are not accepted at Bainbridge Island RAGF.

Wastes collected at the RAGFs are hauled in roll-off containers to OVTS where they are compacted into larger rail-compatible containers for delivery to an out-of-state landfill. Curbside recyclables are hauled to a material recovery facility where they are processed for delivery to out-of-county recyclers. Specific materials that are source-separated and collected in smaller quantities, such as sharps, oil, antifreeze, fluorescent lights, and appliances are managed under separate contracts.

8.1.1 Planning Issues

The significant planning issues facing the transfer system include:

- 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 County encourage customers to use available curbside collection services instead of self-hauling their typical household wastes and recyclables?
- It is less costly to the system overall if customers deliver wastes directly to OVTS instead of to the RAGFs. Should the County use rate structures to encourage delivery of larger loads and loads of source-separated C&D waste directly to OVTS?

- On per ton and a per customer basis, Olalla is more costly to operate than other facilities. It is also located within the service radius of OVTS. Should the County consider reducing hours or eventually closing the Olalla RAGF and directing customers to use curbside collection services and OVTS in its place?
- A new self-haul area would improve wait and processing times for commercial and self-haul traffic, and would open up space where source-separated C&D materials could be recovered. Should the County support the addition of a separate scale and tipping area dedicated to self-haulers at OVTS?

8.2 EXISTING PROGRAM ELEMENTS

The RAGF facilities charge customers based on the estimated volume of inbound waste material instead of weight because they are not equipped with scales. OVTS is equipped with scales, and weighs inbound materials. Recyclables other than white goods are accepted at no charge. Table 8.1 lists materials accepted at 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, but the layout of the Silverdale RAGF makes it difficult to manage the number of customers without resulting in long lines and wait times.
- In general, PRC and the RAGFs are aging, and would benefit from upgrade and refurbishment. Traffic circulation patterns are less than optimal and attendant facilities are minimal.
- The addition of a separate scale and tipping area dedicated to self-haulers at OVTS would improve wait and processing times for commercial and self-haul traffic, and would open up space on the transfer station floor where recyclable C&D materials or other recyclables could potentially be recovered.

Bainbridge Island Recycling and Garbage Facility

The Bainbridge RAGF is owned by the City of Bainbridge Island, and operated by Bainbridge Disposal. Bainbridge Disposal hauls the collected waste and a portion of the recyclables to OVTS and Peninsula Recycling. Commercially collected waste is mechanically tipped into a roll-off container, while self-haulers hand unload wastes into another roll-off container.
Though the Facility is referred to as a Recycling and Garbage Facility, it is permitted as an intermediate disposal facility, a category of regulation that is designed for facilities that accept mechanical tippers. The existing solid waste handling permit contains a compliance schedule to bring it into full compliance.

The following site needs were observed during a 2008 site visit, and might be considered for improvement:

- Fall-hazard protection is needed in the waste-handling area.
- Traffic circulation is awkward, with some traffic conflicts between curbside collection trucks and self-haulers.
- Construction of a storm water control system (natural drainage swale) began in 2008, along with building a roof over the waste containers as a means of limiting generation of contact water.

Table 8.1
Materials Accepted at County Owned or Operated Facilities

Material	Bainbridge	Hansville	Olalla	Silverdale	Poulsbo	OVTS
Commercial waste	✓					✓
Self-haul waste	✓	✓	✓	✓		✓
Tires						✓
Electronics	✓					✓
Household recyclables	✓	✓	✓	✓	✓	✓
Yard debris	✓		✓			✓
Scrap metal	✓			✓	✓	✓
Sharps	✓	✓	✓	✓	✓	✓
Used oil	✓	✓	✓	✓	✓	✓
Used antifreeze	✓	✓	✓	✓	✓	✓
Household & vehicle batteries	✓	✓	✓	✓	✓	✓
White goods	✓	✓	✓	✓	✓	✓
Fluorescent bulbs[1]					✓	
Used oil filters	✓	✓	✓	✓	✓	✓

[1]In 2009, Kitsap County began a pilot collection program for compact fluorescent bulbs at each of its facilities. PRC and HHWF will continue collection of fluorescent tubes and bulb collection will be added at the other RAGFs.

Hansville Recycling and Garbage Facility

The Hansville RAGF is owned by the County. The Solid Waste Division operates the Facility and Waste Management hauls the garbage and recyclables to OVTS under the terms of a contract (Kitsap County 2008b). Residential self-haulers comprise the majority of users, though some small to medium-sized companies use this Facility.

In May 2008, Emu Compost opened a composting facility adjacent to the Hansville RAGF. Yard waste is now directed to Emu rather than the Hansville RAGF. This change is expected to reduce operational costs at Hansville and will free up space that could be used for other waste handling or recycling activities.

The following site needs are recommended for consideration:

- The existing attendant booth is in poor condition and provides minimal functionality.
- Utilities, including municipal water and internet connections, would improve workflow and employee comfort.
- Traffic circulation is awkward, with little control of flow, and poor visibility.
- The recycling area is unpaved.
- Security is minimal and the site experiences minor thefts and vandalism.

Olalla Recycling and Garbage Facility

The Olalla RAGF is owned by the County and operated under contract by Waste Management, who also hauls garbage and recyclables to OVTS under the terms of a contract (Kitsap County 2008b). Olalla manages the least waste and handles the fewest customers of any of the RAGFs. As a result, operating costs exceed revenue and it is subsidized by other facilities in the solid waste system.

The roadway leading to the Olalla Facility was closed due to major construction beginning in July 2008. During construction, customers located east of Highway 16 continued to use Olalla, while those located west of the highway were re-directed to OVTS. Construction was completed in October, 2009. Capital improvement needs for Olalla RAGF were not analyzed as part of this Plan, pending a further analysis of customer use patterns following reopening of the access road.

Poulsbo Recycle Center

PRC accepts recyclables from self-haul residential customers. Garbage is not accepted. The County owns and operates the Facility and Waste Management hauls the recyclables to Peninsula Recycling under the terms of a contract (Kitsap County 2008b).

Operating costs at this Facility exceed revenues because materials (except for appliances) are accepted at no charge. PRC is popular, and even though exact figures are unavailable, customers arrive steadily throughout the day.

The following site needs are recommended for consideration:

- The site is difficult to secure and has experienced the theft of metals and some attendant booth break-ins. Site fencing and security improvements are needed.
- The existing attendant booth, a skid-mounted 8 ft x 10 ft building, is in poor condition and provides minimal functionality.
- The recycling area is unpaved and becomes rutted and muddy with heavy use.

Silverdale Recycling and Garbage Facility

The Silverdale RAGF is owned by the County and operated under contract by Waste Management, who also hauls garbage and recyclables to OVTS under the terms of the same contract (Kitsap County 2008b). Silverdale is heavily used. It is second to OVTS in terms of tonnage and number of customers.

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

The following site needs are recommended for consideration:

- Current use exceeds the design capacity, resulting in lines and long wait times.
- Multiple closely-spaced intersections and crossings reduce the amount of queuing space and pose traffic hazards.
- Traffic circulation is awkward, with little control of flow and poor visibility.
- Roadway turning radii are too tight for "doubles" (truck pulling two containers).

- The Facility was not designed to handle heavy loads and high traffic volumes, which results in significant degradation of the roadway, curbing, and waste container rails. The recycling area and waste tipping 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 provides minimal functionality.
- The recycling yard is unpaved, potholed and muddy, and may impinge on a right-of-way belonging to another owner. There is a need to clarify property lines, easements, and buffer zones.
- The site is difficult to secure and experiences theft, illegal dumping, and break-ins. Site fencing and security improvements are needed.
- County-owned property adjacent to the Facility may be available for facility expansion or remodeling.

Olympic View Transfer Station (OVTS)

As recommended by the 1999 Plan, OVTS was built to replace OVSL and to implement the export of waste via rail. OVTS opened the day after OVSL closed in 2002. OVTS is owned by the County and operated by Waste Management under terms of a contract that includes operation of the Facility and disposal of Kitsap County waste in an out-of-state landfill (Kitsap County 2000).

All garbage and curbside-collected household recyclables generated in the county are handled at OVTS. OVTS also accepts garbage from portions of Mason and Pierce counties, 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.

Garbage is compacted into intermodal shipping containers that are placed on rail cars at OVTS. Loaded rail cars are transported by the Puget Sound and Pacific Railroad to Centralia, where the Kitsap cars are joined with those from other locations and transported by the Union Pacific Railroad to Arlington, Oregon. From Arlington the containers are truck-hauled to the Columbia Ridge Landfill for disposal.

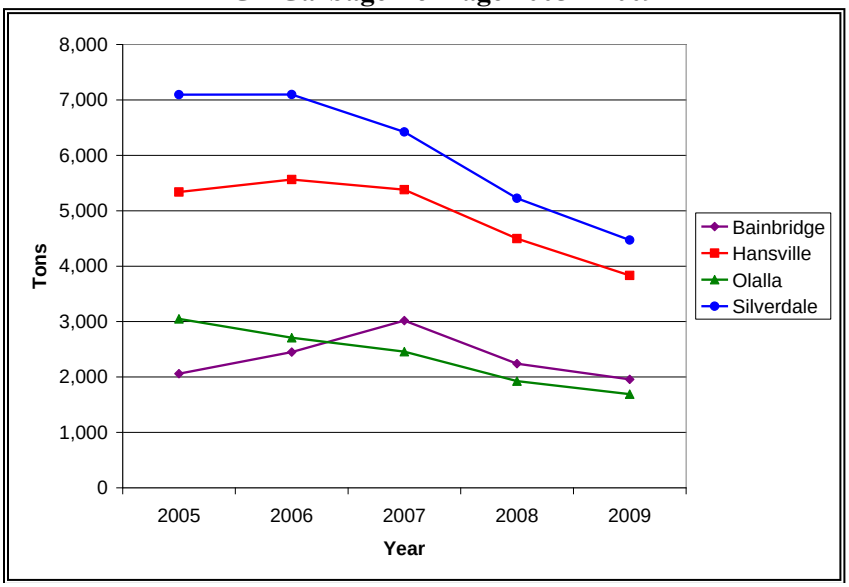
The following site needs are recommended for consideration:

- There is significant queuing preceding the single exit scale resulting in long wait times to exit OVTS on a regular basis. Based upon experience, a single exit lane can reasonably process 40 – 50 vehicles per hour. Based on a 2004 – 2005 internal Solid Waste Division study and daily logs from 2008, peak hourly vehicle loads represent 14% of the daily volume, and the number of self-haul vehicles per hour exceeds the design capacity on both weekdays and weekends. Due to data limitations, the commercial vehicles that share the exit lane were not included, although they add to the loading.
- In 2008, OVTS handled 400 self-haul vehicles per day on weekends and 325 vehicles per day on weekdays. The extra time needed to process self-haul vehicles slows down commercial traffic on weekdays, and results in long wait times on weekends, when the majority of customers are self-haulers.

8.2.1 Tonnage Trend Analysis

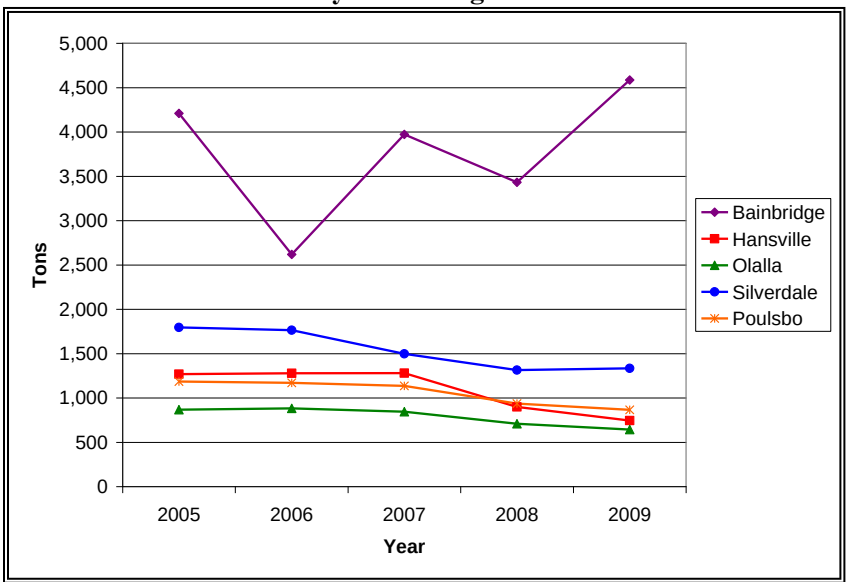
Figures 8-1 through 8-4 summarize the quantities of garbage and recyclables that passed through the transfer system in recent years.

Figure 8-1
RAGF Garbage Tonnage 2005 – 2009



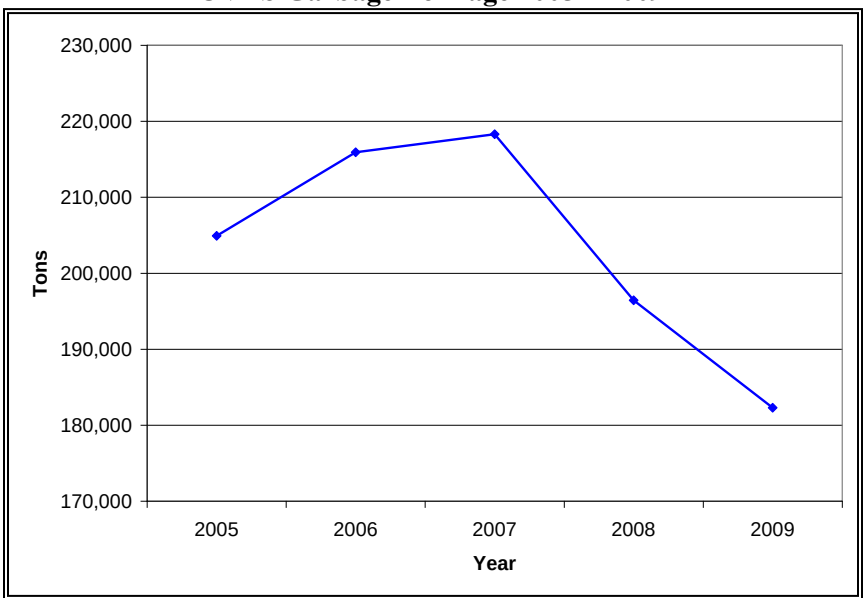
Source: Kitsap County 2010.

Figure 8-2
RAGF Recycle Tonnage 2005 – 2009



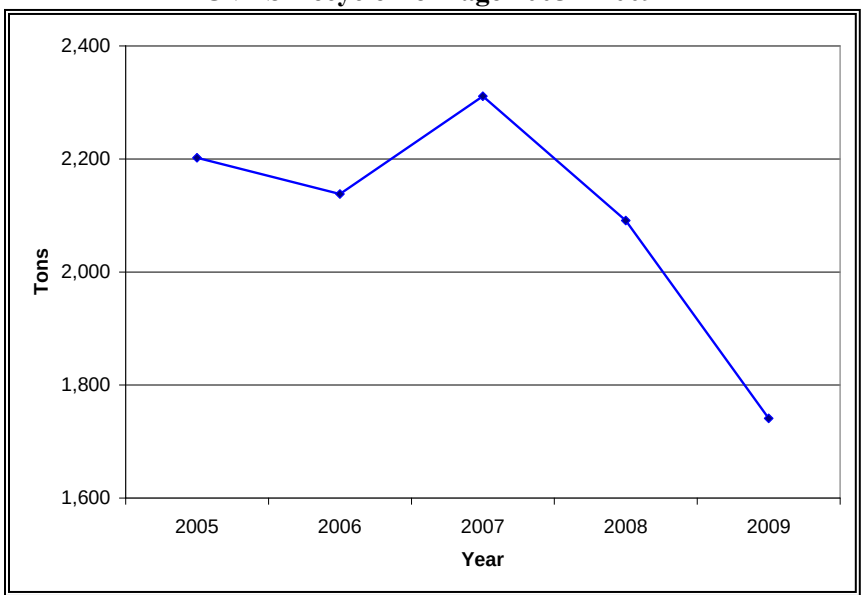
Source: Kitsap County 2010. Bainbridge figures appear higher than expected because they include curbside tonnage from Poulsbo and Bainbridge Island routes.

Figure 8-3
OVTS Garbage Tonnage 2005 – 2009



Source: Kitsap County 2010.

Figure 8-4
OVTS Recycle Tonnage 2005 – 2009



Source: Kitsap County 2010.

The following general self-haul trends have been observed:

- Garbage tonnage at Olalla RAGF has decreased about 45% between 2005 and 2009.
- Garbage tonnage at OVTS experienced a large increase between 2005 and 2007 but fell between 2007 and 2009.
- Recyclables tonnage remained consistent at all facilities.

8.2.2 Contractual Analysis

Bainbridge RAGF: The Solid Waste Division continues to provide HHW support services at the Bainbridge RAGF. The Solid Waste Division pays for the collection, recycling, and disposal of used oil, antifreeze, household batteries, and medical sharps, but does not receive any off-setting revenue.

County-owned RAGFs: Waste Management and Kitsap County operate under the terms of a contract for the operation and maintenance of the Silverdale and Olalla RAGFs, and for hauling waste and recyclables from the Hansville, Silverdale, and Olalla RAGFs and PRC (Kitsap County 2008b).

OVTS: Waste Management and Kitsap County operate under the terms of a contract that provides for the development and operation of OVTS, and for disposal of the County's solid waste at the Columbia Ridge Landfill & Recycling Center in Arlington, Oregon (Kitsap County 2000). The contract allows the County, at its sole discretion, to terminate the operations portion of the Agreement and exercise its right to purchase OVTS and all equipment from Waste Management in contract years 7 and 14 (2009 and 2016 respectively). Discussions with both parties indicate a general satisfaction with the quality of service and the working relationship between the entities as of 2009. At present, there is a good working relationship between the parties and the terms of the Agreement are being executed in a satisfactory and economical manner. There appears to be no immediate reason for the County to contemplate either termination of the operating agreement or purchase of OVTS, which would require hiring a different operator or the County to operate the Facility.

8.2.3 Level of Service Analysis

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

In general, except for the extreme west-central part of the County and northern Port Orchard, the most populous areas of the County are located within 10-road miles of a RAGF. 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 that serve self-haulers are codified in Chapter 9.16 KCC. The most recent change went into effect in August 2001. Services have been expanded and costs have increased since that time. A Solid Waste Rate Study is proposed so that revenue needs can be more fully analyzed and the impact of rate structures on ratepayers can be analyzed.

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, transportation, staffing, and funding capital improvements are

proportional to tonnage and customer count. The cost of providing self-haul service went up significantly in 2009. Some issues to consider as the Solid Waste Division evaluates rates and rate structures include:

- Facilities that are dedicated to self-haulers must be staffed and designed to manage a large number of vehicles and transactions even though overall volumes tend to be small.
- The largest category of customers, residential self-haulers tend to carry small loads of garbage. Of the nearly 39,000 customer transactions in 2009 to date, 58% were charged the minimum fee which means that they delivered 1 can or less of garbage.
- Even though transporting recyclables from the RAGFs to Peninsula Recycling is costly, there is currently no mechanism to fully or partially recover costs through fees.
- 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 cost 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 rate increases because costs are spread over a larger customer base.

Some of the common reasons given for self-hauling include:

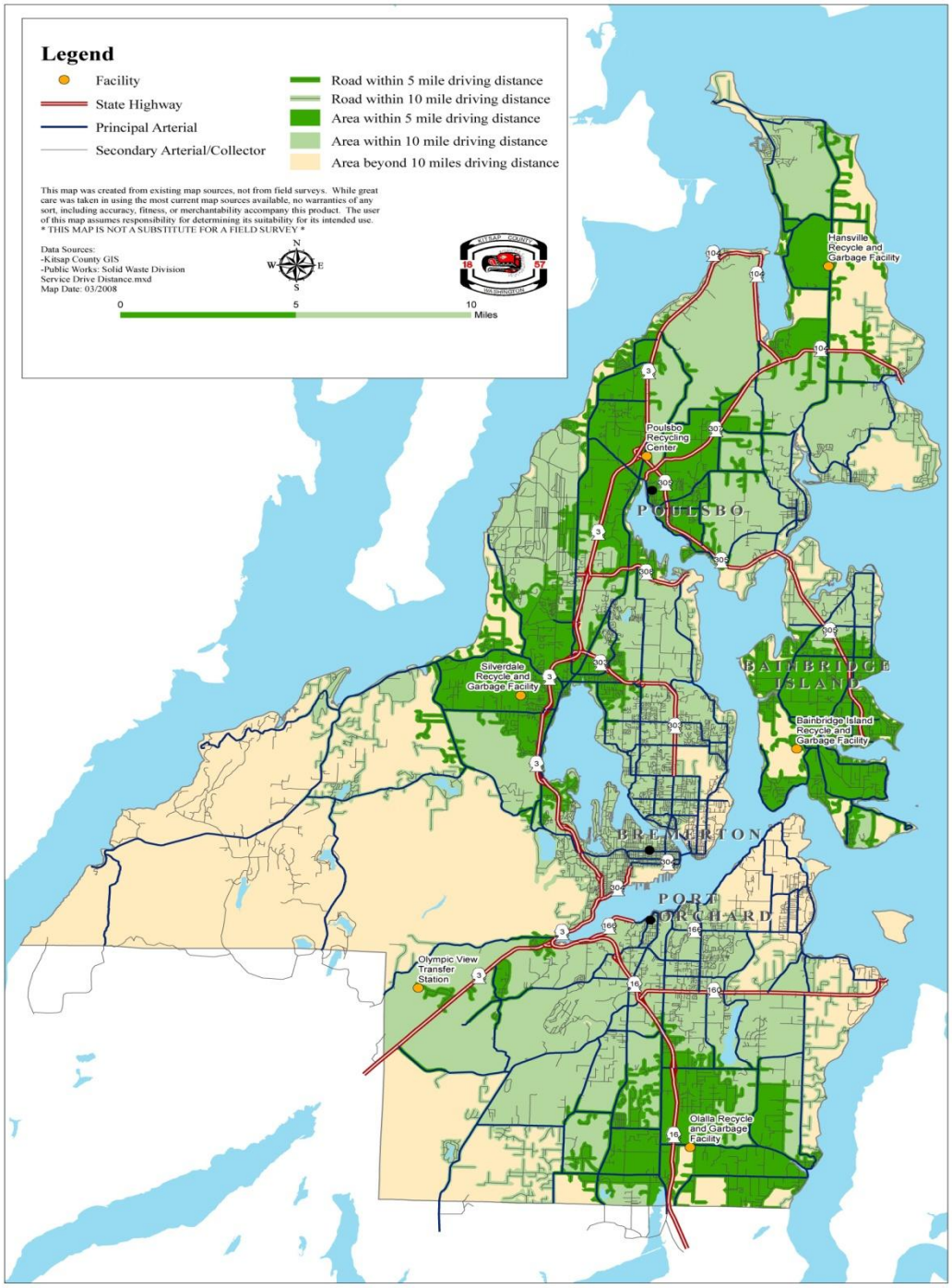
- "I want to recycle, and curbside recycling is not available where I live."
- "I do not choose to subscribe to curbside garbage service, or I prefer hauling my own garbage and recyclables."
- "I have too much material, or my material is too large to fit into a garbage can."
- "I believe that it is less expensive to haul my own wastes than to subscribe to curbside garbage service."
- "Because of my long or inaccessible driveway, getting my containers to the pickup location involves loading my car, so I might as well take them to the RAGF myself."

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.

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. Materials delivered to PRC and RAGFs result in an added cost to the County when they are then delivered to OVTS. In addition, a typical load for a commercial garbage truck is approximately 8 tons, which equates to the same tonnage as 60 self-haul loads brought to Silverdale or 92 brought to Olalla.

Poulsbo: Most Poulsbo-area residents are within 10-road miles of a recycling facility, but not a garbage facility. The City of Poulsbo is considering the development of a transfer station facility to serve the City's commercial vehicles only. Such a facility has the potential to reduce environmental impacts and costs by reducing road miles, equipment wear and tear, and fuel use.

Figure 8-5
Transfer System Level of Service Analysis: Residential Proximity to Facilities



Olalla RAGF: 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. One important reason to operate Olalla is that, as shown in Figure 3-5, many nearby users are outside of the current Level 1 Recycling Service Area boundary and do not have the option of using curbside recycling services. This Plan recommends expanding curbside recycling to all residents of the County. Given that Olalla lies within the service radius of OVTS, it would be reasonable for the Solid Waste Division to assess the impact of reducing or ceasing operations at Olalla, especially if curbside recycling becomes available countywide.

8.3 POLICY OBJECTIVES

1) Based on an analysis of existing program elements, regulatory requirements, and the goals identified in this Plan, the following Solid Waste Division Policies were identified:

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

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

4) 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 that they support solid waste program goals. 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.
- **f)** Consider the needs of low-income residents.
- **g)** Remain stable 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 the City of Bainbridge Island implement a rate structure that complements the County's rate structure, but that considers site-specific costs at the Bainbridge Recycling and Garbage Facility.

3) Complete a RAGF Service Level Analysis designed to optimize days and hours of service throughout the RAGF system. The RAGF Service Level Analysis will consider environmental impacts, advantages, disadvantages, costs, and other limitations associated with taking one of the following

potential courses of action at Olalla RAGF: 1) Maintaining current service levels, 2) Reducing hours or services, or 3) Permanently closing the facility.

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

5) Develop a rating system by which to prioritize needed capital improvement projects at the RAGFs. Evaluate needs on an annual basis. Pending completion of the rating system, the following projects have been identified and tentatively scheduled:

- **a)** Hansville RAGF Improvements
- **b)** Poulsbo Recycle Center Improvements
- **c)** Silverdale RAGF Improvements

6) Develop a master plan for future development at OVTS, including:

- **a)** Design and build solution to the outbound scale bottleneck
- **b)** Design and build C&D processing area

8.5 REFERENCES/RESOURCES

Kitsap County Department of Public Works, Solid Waste Division. 2010. *Kitsap County Department of Public Works, Solid Waste Division 2009 Annual Report (unpublished).* Prepared by the Kitsap County Department of Public Works, Solid Waste Division. Port Orchard, Washington.

Kitsap County Department of Public Works, Solid Waste Division. 2008a. *Kitsap County Department of Public Works, Solid Waste Division 2007 Annual Report.* Prepared by the Kitsap County Department of Public Works, Solid Waste Division. Port Orchard, Washington.

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

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 Solid Waste Division'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 an out-of-state landfill. The County signed a 20-year contract with Waste Management to operate OVTS and to rail-haul MSW to the Columbia Ridge Landfill near Arlington, Oregon for disposal, beginning in July 2002.

In part, the contract:

- Allows Kitsap County, at its sole discretion, to terminate the transfer station operations portion of the Agreement and purchase the transfer station on certain anniversaries (2009, 2016) and
- Provides for annual adjustment of the rates the County pays for MSW transport and disposal.

The existing disposal system which is designed to rail-haul wastes to Waste Management's landfill in Oregon is effective and reliable. This landfill has a 110-year capacity at the current disposal rate of 2.28 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. As such, there was no reason for the County to consider termination of the transport and disposal agreement in 2009.

9.2.2 Waste to Energy Technologies

Recently, the potential use of chemical processes such as pyrolysis, gasification, anaerobic digestion, and ethanol fermentation to convert the organic portion of solid waste into energy or other useful products has received considerable attention. Waste conversion technologies present the interesting possibility of producing energy from waste, with less environmental impact than traditional incineration.

In the United States, there is limited experience in applying such technologies to MSW on a large scale. MSW is a variable mix of materials that is more difficult to process than more homogenous waste streams such as wood chips or industrial waste. Technology vendors are actively marketing new projects, and a few pilot projects are operating in the United States, Canada, and Europe. To be considered seriously in Kitsap County, waste conversion technologies must first demonstrate economic feasibility through continuous safe and cost-effective community-scale operations, and the successful sale of energy or by-products to defray operating expenses. In addition, they must gain public acceptance, meet regulatory compliance and environmental protection standards, and demonstrate economic viability over the long-term. MSW conversion technologies continue to be considered for projects locally and across the country.

Landfill gas-to-energy technologies are waste conversion technologies that are unlikely to be viable for Kitsap County's closed landfills due to the limited gas production at the landfills. Gas production at Waste Management's OVSL site could warrant implementation of some form of gas-to-energy technology in the future.

9.2.3 Closed Landfill Oversight

Five closed landfills in Kitsap County are currently listed as contaminated sites under the Washington State Model Toxics Control Act (MTCA). The Solid Waste Division has lead oversight responsibilities for two of these landfills, Hansville and Olalla.

A list of Closed and Abandoned Landfills in Kitsap County is maintained by KCHD and may be found at: http://www.kitsapcountyhealth.com/environmental_health/solid_waste/docs/landfill_list.pdf.

Management of the Hansville and Olalla closed landfills is a joint effort by several County departments. The Solid Waste Division oversees operations. The Civil Division of the Prosecuting Attorney's office assigns a deputy prosecutor specifically to landfill projects. KCHD works with Ecology to provide technical oversight. The Risk Manager manages insurance issues. Legal staff and Solid Waste Division staff work together to integrate technical and legal concerns as negotiations and remedial investigations continue to develop.

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)

In accordance with the MTCA process, a Remedial Investigation and Feasibility Study was completed and submitted to Ecology, KCHD, and the Port Gamble S'Klallam Tribe for review in the fall of 1999. After several revisions, the Draft Remedial Investigation report was made available to the public in early 2007. No public comments were received and the draft Remedial Investigation report was finalized in August 2007 (Parametrix 2007).

In December 2006, Kitsap County, Waste Management and the Port Gamble S'Klallam Tribe reached agreement on the preferred remedial action, natural attenuation. This remedy was presented to Ecology in the revised Agency Review Draft Feasibility Study submitted in May 2008. In 2008, Ecology approved the Draft Feasibility Study, incorporating comments from KCHD and the Tribe. The Draft Feasibility Study was in public review in 2009. After closure of the public review period, Ecology issued a Responsiveness Study and approved the Final Feasibility Study Parametrix 2009). In 2009-2010, Ecology

will issue a Cleanup Action Plan and the approved remedial action will be implemented.

Quarterly groundwater and surface water sampling and landfill gas monitoring are conducted by a contractor. The County performs 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. Inspections conducted in inclement weather indicate that the surface water conveyance system and landfill cap are operating as designed.

Trespassing and vandalism continues to be a problem at the landfill. Large concrete blocks, stumps, rocks, and trenches have been strategically placed to limit vehicle access. The Solid Waste Division typically notifies the Tribal Council and the County Sheriff's Office when incidents occur. As part of the settlement agreement, Kitsap County and Waste Management agreed to provide signage to identify the resource protection areas on tribal land. The signs are treated as an interim measure during the Remedial Investigation and Feasibility Study process and are maintained by the Port Gamble S'Klallam Tribe.

Olalla Landfill (Closed)

Groundwater and landfill gas are sampled and monitored quarterly and the site is inspected by Solid Waste Division and KCHD personnel quarterly. When possible, surface water is sampled annually. Solid Waste Division personnel have conducted groundwater and surface water sampling and landfill gas monitoring since 2002. Starting in 2009, the quarterly groundwater and annual surface water monitoring and sampling, and the landfill gas monitoring is 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, KCHD directed the County to report a release at the Olalla Landfill to Ecology. The release consisted of documented periodic exceedances of groundwater 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 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 Olalla Landfill is in the beginning phase of the MTCA process and, as of this writing, is awaiting MTCA action by Ecology.

KCHD issues an annual Solid Waste Handling Permit to the Solid Waste Division with monitoring, reporting, and operation and maintenance requirements for the landfill. The permits include additional requirements related to closure, site improvements, and evaluation of corrective action remedies. These requirements have significant budgetary impacts.

During 2006, the Solid Waste Division updated the Sampling and Analysis Plan to reflect changes in the Permit, new EPA statistical and analytical analysis methods, and updated sampling procedures. In 2009, the draft Sampling and Analysis Plan is being updated to reflect current monitoring and sampling approach including activities conducted by a contractor. The Sampling and Analysis Plan should be finalized by the end of 2009. A draft Post-Closure Activities Plan, submitted in November 2006, has been under negotiation but has not yet been finalized.

Vandalism and illegal dumping continue to be a problem near the Bandix Road entrance gate. 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.

In terms of financial planning, additional monitoring wells and upgrade of the passive landfill gas system may be required depending on the requirements of the Solid Waste Handling Permit and/or MTCA. The northern Phase II area is not capped. If an engineered cap is required, this could result in capital costs estimated at approximately $1.6 million.

Natural attenuation is proposed as the remedial action for the landfill. If approved, the landfill will continue to be monitored throughout the remedial action implementation. Monitoring results and periodic review will evaluate if additional action, such as upgrade of the existing cap or installation of an engineered cap on the Phase II area, is necessary.

Bainbridge Island Landfill (Closed)

Waste from the former Bainbridge Island Landfill was excavated and screened in 2001 in accordance with a Cleanup Action Plan approved by Ecology under MTCA. Material less than 1.5 inches in diameter was returned to a smaller landfill footprint 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 Interlocal Agreement 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 Solid Waste Division and KCHD continue to review copies of the environmental monitoring data and had the opportunity to comment on the Periodic Review Report submitted to Ecology in September 2006. The Periodic Review Report is undergoing public review in 2009. Recommendations in the Periodic Review Report include updating cleanup action levels to be consistent with current standards, repair of the slope failure, and continuation of compliance groundwater monitoring (CH2M Hill 2006). The Periodic Review Report also recommends the property transfer between the County and the City of Bainbridge Island be documented with Ecology.

In January 2004, the face of the east slope failed; cover soil and some waste were transported approximately 750 feet downstream. KCHD collected soil samples and based on the analytical results, recommended that Ecology issue a "No Further Action" status with respect to potential contamination. In 2005 the City and County negotiated an Interlocal Agreement with respect to cost sharing to repair the failed slope; the City repaired the slope in 2007. In December 2007 another slide of greater magnitude occurred in the same general area. Further design review is likely warranted in order to minimize the risk of future slope failures.

In 2006 Bainbridge Island's Decant Facility opened on the landfill property. The Decant Facility uses the same surface water conveyance system that was designed for the landfill remediation project.

Norseland Landfill (Closed)

The Norseland Landfill is owned by the Port of Bremerton and is listed under MTCA as a contaminated site. The potentially liable parties include the Port and Kitsap County. A Consent Decree was entered on

July 6, 2000 to mitigate the release or threatened release of hazardous materials at the landfill. The Cleanup Action Plan 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.

The Norseland Landfill is currently in the confirmational monitoring phase. Monitoring and maintenance activities are managed by the Port. As a potentially liable party, Kitsap County shares the cost with the Port. In 2007, a petition was submitted to Ecology to remove the Norseland Landfill from the Hazardous Sites List. The County concurred with the petition to delist. Ecology and the Port are evaluating the petition in conjunction with evaluation of future development of the property.

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 landfill consists of three adjoining areas. 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). These three areas combined total approximately 65 acres. All three units are capped with a final cover system.

The preferred cleanup alternative is increased inspection, repair, and operational improvements to the landfill gas and leachate collection systems, combined with monitored natural attenuation of the existing groundwater contamination downgradient of the landfill (OVSL 2007). The estimated capital cost for the preferred remedy is $780,000. The estimated annual operations and maintenance costs range between $420,000 and $1,200,000 over a period of 30 years. Waste Management is responsible for these costs.

Poulsbo Landfill (Closed)

The Poulsbo Landfill, also known as Indian Hills Landfill, is a closed landfill that operated from about 1937 until 1978 and is owned by the City of Poulsbo. The landfill is located about 1.4 miles southeast of the City just to the northeast of Highway 305. While open the landfill accepted an estimated 116,000 cubic yards of mixed municipal waste and sewage sludge. The landfill consists of approximately 15 acres of a 20 acre parcel.

In October 2001, the Kitsap County Health District (KCHD) conducted a Site Hazard Assessment of the landfill, under MTCA. A "No Further Action" recommendation was approved by Ecology. The KCHD continues to oversee post-closure care at the landfill, including periodic off-site monitoring and maintenance of the cap.

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, develop and implement remedial action investigations and alternatives 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 Contract KC-479-00 with Waste Management, 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 with Waste Management and to monitor performance under Contract KC-479-00. Consider exercising the right to terminate the transfer station operations portion of the contract in 2015, so that the option may be exercised in 2016 if it is deemed desirable at that time.

3) Implement the requirements of the Solid Waste Handling Permit for the Olalla Landfill.

4) Prepare a RI/FS and Cleanup Action Plan for the Olalla Landfill under MTCA, and seek funding under Ecology's Remedial Action Grants and Loan program.

5) Implement the approved Cleanup Action Plan at the Olalla Landfill; continue monitoring program as a means of demonstrating effectiveness.

6) Finalize and implement the approved Cleanup Action Plan at the Hansville Landfill; continue monitoring program as a means of demonstrating effectiveness.

7) Review confirmational monitoring at Norseland Landfill and the Bainbridge Island Landfill and support a "No Further Action" determination of both sites 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, Solid Waste Division. 1999. *Kitsap County 1999 Comprehensive Solid Waste Management Plan, Final Version*. Prepared by SCS Engineers and Kitsap County Department of Public Works, Solid Waste Division. Port Orchard, Washington.

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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 Chapter discusses non-hazardous contaminated soil, asbestos-containing material, land-clearing 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 and 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. Determining the appropriate level of regulation involves consideration of where and how the soil is generated and of the types and levels of contaminants contained within it. This determination is made on a case-by-case basis.

Soils that designate as hazardous wastes are not municipal solid waste and are managed under a separate regulatory, transportation, and disposal system. Information about managing hazardous soils may be found at http://www.ecy.wa.gov/programs/hwtr/reg_comp_guide/index.html.

The municipal solid waste 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 require written pre-approval from Waste Management. The pre-approval step allows Waste

Management'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 KCHD conditions are met. In such cases, the KCHD reviews and approves specific contaminated soil reuse 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. KCHD recently implemented a street waste management policy that sets guidelines for re-use and recycling (KCHD 2008). Materials that meet specified standards may be left in place, re-used at commercial or industrial sites as fill, used to develop road slopes or parking lot sub-grade, or used to reclaim pit mines. The re-use that has taken place since implementation of this policy has saved Kitsap County approximately $185,000 per year in disposal costs.

Contaminated soil destined for disposal or use as alternate daily landfill cover is typically transported to OVTS in a rail-compatible open-top container, in which case the container is loaded directly on the train, and the material does not have to be tipped on to the transfer station floor. Rates for transportation and disposal are negotiated with Waste Management Sales Division on a case-by-case basis and lower per ton rates and taxes may apply if the material is suitable for use as alternate daily landfill cover or other beneficial use at the landfill location.

Contaminated soil may also be processed on the transfer station floor. In that case, the contaminated soil is tipped in an area designated by the site operator, where it is co-mingled with MSW prior to shipment. Co-mingled materials, which are typically generated in smaller volumes, are subject to posted gate rates and taxes.

The management system for contaminated soils is well developed, with long-term capacity in place. In 2009, OVTS accepted, shipped, and properly disposed of 19,911 tons of contaminated soil, a decrease of 26% compared to 2008 (Kitsap County 2010).

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 asbestos-containing material. Kitsap County's solid waste regulations (KCBH 2004-2) 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 asbestos-containing materials.

In 2009, 94 tons of asbestos-containing material was delivered to OVTS for shipment and disposal at a permitted landfill (Kitsap County 2010).

10.2.3 Land-clearing Wood Debris

The burning of land-clearing debris is regulated under Chapter 173-425 WAC and, beginning September

1, 2009, is prohibited by Puget Sound Clean Air Agency, Regulation 1, Section 8.2. The Solid Waste Division'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 2009, 166 tons of wood waste was accepted at OVTS (Kitsap County 2010).

10.2.4 Coal Ash & Dredge Spoils

The 1999 Plan noted that Naval Submarine Base Bangor and Fort Lewis were the source of about 8,000 tons of coal ash in 1997. The volume of coal ash has decreased drastically since that time.

Contaminated 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.

In 2009, OVTS processed 5 tons of coal ash (Kitsap County 2010).

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 RCW 70.95J and WAC 173-308. Enforcement of WAC 173-308 is the responsibility of Ecology who has delegated certain authority for biosolids to KCHD pursuant to a Memorandum of Understanding. In Kitsap County, KCHD 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. Operators would like to expand the recycling and disposal options that are available to them in order to assure 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.

Biosolids are typically managed outside the scope of the County solid waste management system, and are not addressed in this Plan.

10.2.6 Tires

The 1999 Plan estimated that about 230,000 tires would be discarded each year, based on a generation rate of one tire per person per year. Most tires are recycled through the dealer when an old tire is replaced. As a result, tires often bypass the County's solid waste facilities and are not reflected in the Solid Waste Division's facility data.

Tire piles at both Airport Auto Wrecking sites were removed by Ecology in 2008 as part of the Waste Tire Pile Cleanup program. Over 208 tons of tires were removed from these two sites (Kitsap County

2009). Currently, the Airport Auto Wrecking sites are listed as remedial action sites by the Department of Ecology.

In 2009, 4,362 tires were accepted for recycling at OVTS, and 403 tires were removed from illegal dump sites. An additional 795 tires were removed from nuisance abatement cleanups, and 229 tires were disposed by residents who participated in the Clean Kitsap voucher program (Kitsap County 2010).

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 (RCW 70.95K) and KCBH Ordinance 2004-2 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.

Sharps: The Solid Waste Division accepts household sharps for disposal at OVTS, the HHW Facility, PRC, and the Hansville, Olalla, Silverdale RAGFs, and Bainbridge Island Transfer Station. Table 10.1 shows the history of the Solid Waste Division's sharps collection program.

In addition, KCHD operates a Needle Exchange program that manages approximately 300,000-350,000 needles per year. Part of this program is funded by a portion of the tipping fee surcharge, and is operated by community volunteers at a cost of approximately $50,000 per year.

Other Biomedical Wastes: Bio-safety Level 4 Disease waste, cultures and stocks, pathological waste, human tissues, and some sharps, generated by the KCHD, are collected and disposed of by Stericycle, 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 and Avian Flu.

Bovine Spongiform Encephalopathy, more popularly known as mad cow disease, is a progressive, lethal central nervous system disease that attacks cattle, riddling the cow's brain with holes so that it resembles a sponge. It is believed that the prions for Bovine Spongiform Encephalopathy may also cause a similar disease in humans, whose symptoms include loss of coordination, personality changes, mania, and dementia.

Table 10.1
Sharps Disposal Program History (Measured in Cubic Feet)

FACILITY	2004	2005	2006	2007	2008	2009
Hansville Recycling and Garbage Facility	18.9	30.7	36.4	31	21.4	22.4
HHW Collection Facility	13.5	18.2	18.9	31.2	43.8	43.8
Olalla Recycling and Garbage Facility	37	29.6	25.9	15.4	22.5	22.4
OVTS	30.5	35.1	24.3	30.5	31	41.7
Poulsbo Recycle Center	56.7	61.4	69.8	71.5	66.2	84.3
Silverdale Recycling and Garbage Facility	50.6	46.1	54	49.4	52.3	54.5
TOTAL	**207.2**	**226.1**	**229.3**	**229**	**237.2**	**269.1**

Source: Kitsap County 2010.
One 32-gallon sharps container = 4.27 cubic feet

State rules and KCHD ordinances allow burial of animals provided that they do not endanger public health and the environment. Cows infected with Bovine Spongiform Encephalopathy cannot be buried as the prions are not destroyed by decomposition of the waste, and could eventually migrate to sources of drinking water. In addition, Bovine Spongiform Encephalopathy-infected cattle cannot be disposed of in a landfill if the leachate is sent to a municipal sewage treatment plant, because chlorination does not deactivate the prions, which would eventually be released into a receiving body of water along with the treated sewage effluent.

In 2004, Bovine Spongiform Encephalopathy-infected cattle from the Yakima area were disposed of in the Rabanco Regional Landfill near Roosevelt, Washington. This landfill was chosen because it treats its leachate in evaporation ponds, with the solids eventually placed in the landfill. This prevents prions from reaching groundwater or surface water bodies.

The second disease of interest, Avian Flu, is an infection caused by bird influenza viruses. Wild birds worldwide carry the viruses in their intestines, but usually do not get sick from them. However, Avian Flu is very contagious among birds and can sicken or kill domesticated birds such as chickens, ducks, and turkeys. The risk from Avian Flu is generally low to most people, because the viruses do not usually infect humans.

On-site composting has been proven to be an effective mass disposal method for infected dead poultry, as the Avian Flu virus is deactivated after 10 days of composting at 60 degrees C (140 degrees F). The same composting method is also suitable for a variety of animals and animal parts (offal) produced in the agricultural sector.

A detailed composting methodology was developed by the University of Maryland Cooperative Extension for the U.S. Department of Agriculture (Tablante et al 2006). The technique involves layering birds and litter (straw, hay, sawdust) in a long pile known as a windrow, using a small bucket loader. The litter provides a carbon source to balance the nitrogen in the carcasses and promotes an efficient composting process. The windrow is watered to maintain optimum moisture content. The composting process can be completed in about a month and the compost product is suitable for land spreading. A major advantage of composting is that it can be accomplished on-site, avoiding the need to transport large quantities of infectious waste material to a treatment site.

The Washington State Department of Agriculture and the State Board of Health each have regulations addressing the disposal of animal carcasses under normal circumstances as well as when there is an emergency related to the spread of disease (Matthews 2008). The Washington State Extension office in Kitsap County is currently working with KCHD on a large animal carcass and slaughter waste composting demonstration project.

Though Kitsap County has not experienced an outbreak of Bovine Spongiform Encephalopathy 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 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 not covered in the program. Under this new product stewardship (producer-funded) program, consumers no longer have to pay to recycle their covered electronics at participating locations, including eight locations in Kitsap County.

Since the program started in January 2009, Kitsap residents, schools, and small businesses have recycled over 869 tons of e-waste. Since the producer-funded program began, collection of e-waste at OVTS has increased by 225% year-over-year. Over half of the material collected, by weight, is televisions (Kitsap County 2010).

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 that continue 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. 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.

10.4 RECOMMENDED STRATEGIES

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

1) Continue implementation of Contract KC-479-00, 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 ensure 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 the Kitsap County Health District, will continue to provide technical assistance to other agencies seeking to re-use non-hazardous soils.

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

10.5 REFERENCES/RESOURCES

Kitsap County Department of Public Works, Solid Waste Division. 2010. *Kitsap County Department of Public Works, Solid Waste Division 2009 Annual Report (unpublished).* Prepared by the Kitsap County Department of Public Works, Solid Waste Division. Port Orchard, Washington.

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Tablante, N., L. Carr, G. Malone, P. Patterson, F. Hegngi, G. Felton, N. Zimmermann. 2006. Guidelines for In-house Composting of Catastrophic Poultry Mortality. Maryland Cooperative Extension, University of Maryland, Fact Sheet 801.

CHAPTER 11 - MODERATE RISK WASTE

11.1 INTRODUCTION

Local governments are required by the Washington State Hazardous Waste Management Act, RCW 70.105 (the "Act") 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 Act and local needs, the first *Kitsap County Moderate Risk Waste Management Plan* (MRW Plan) was completed in 1990, and later updated in 1993 and 1999. Changes that occurred in Kitsap County and in the management of MRW since the last update have rendered portions of the previous MRW Plan out-of-date, so it is being revised as a part of this Waste Wise Communities Plan. Kitsap County considers this 2010 MRW Plan a "minor update" consistent with requirements of the Act, and the *Guidelines for Development of Local Hazardous Waste Plans* (Ecology 1994). This MRW Plan also incorporates the goals of the State's Beyond Waste Plan and helps to implement Solid Waste Division 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 Solid Waste Division enhance MRW collection services for residents living in the north-end of the County?
- Should the Solid Waste Division continue to accept latex paint as a MRW and manage it using current methods?
- How should the Solid Waste Division 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 Solid Waste Division prepared this MRW Plan with assistance from the KCHD, 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 1999 recommendations were assigned to the Solid Waste Division and KCHD (Kitsap County 1999). The Solid Waste Division is the lead in conducting HHW education, HHW collection, SQG hazardous waste collection, and provides small quantity generator (SQG) technical assistance. KCHD 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.

Waste Wise Communities 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

In order to develop the Waste Wise Communities Plan, technical research, analysis, and recommendations were prepared and discussed with Solid Waste Division staff, the Kitsap County Health District (KCHD), SWAC, the Kitsap Regional Coordinating Council (KRCC), Public Works Directors, City Councils, the Board of County Commissioners, Ecology, and public interest groups. This interactive process was undertaken in order to build consensus for the Plan.

The public participation process was largely focused on the SWAC. The Board of County Commissioners appoints SWAC members, who 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. The SWAC provides guidance to the Solid Waste Division 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. SWAC meetings are open to the public, and meeting notices are published two weeks before each meeting. SWAC agendas and meeting notes are posted at www.kitsapgov.com/sw.

This Plan was adopted by participating cities, tribes, and by the Board of County Commissioners in meetings open to the public.

11.1.5 What is Moderate Risk Waste?

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.

MRW consists of household hazardous waste (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.

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

- SQG Waste
- Household Hazardous Waste (HHW)
- Universal wastes, and
- Used oil

Each 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.

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 and maintaining their waste generation and accumulation rates below the specified quantities, 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.

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

In Kitsap County, KCBH Ordinance 2004-2 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 Facility meets this definition and holds a valid Solid Waste Handling Permit to handle MRW.

Universal Waste: Hazardous wastes that are widely used and have been granted relaxed regulation under EPA 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 (RCW 70.95) requires that MRW plans more specifically address needs for collection and recycling of used motor oil produced by residential "do-it-yourselfers", individuals who change the oil in their own vehicles. It 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 Population, Regional Economics, and Land-use

Population data, regional economics, and land-use information, are summarized in Chapter 2.

11.1.7 Hazardous Waste Inventory

The zone designations and hazardous waste inventory required by state planning guidelines can be found in Appendix E.

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 of Washington'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
- Small Quantity Generator 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, outreach, and education is discussed in Chapter 6.

11.2.2 SQG Technical Assistance Program

Responsibility for SQG technical assistance is shared between the Solid Waste Division and KCHD. Program summaries are as follows:

- **Kitsap County Solid Waste Division Programs**

  Business Technical Assistance: The Solid Waste Division assists SQGs by providing year-end letters to all customers who bring their wastes to the HHW Facility for management, offering technical assistance and general information. Staff visited several area businesses and agencies in 2008 to provide expertise on the proper storage and management of hazardous waste. Not only does this ensure that SQGs more safely handle such material, it makes the delivery of wastes to the HHW Facility much more efficient and safe for generators and staff.

  Assistance to Public Schools: Solid Waste Division staff provides support for area schools in

order to inventory and package large volumes of lab chemicals for delivery to the HHW 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 County Health District Programs**

  Business Pollution Prevention Program: KCHD's Business Pollution Prevention Program includes the following elements: providing business with onsite technical assistance; the EnviroStars program; SQG education and outreach; and SQG complaint response and enforcement.

  Onsite Business Technical Assistance: KCHD staff conducts business technical assistance visits at selected businesses, industry sectors, or specific locales each year. The purpose of these visits is to assist businesses with the proper management of hazardous waste and to offer suggestions for reducing or preventing hazardous waste. Staff informs businesses which corrections are needed to meet regulatory requirements and suggests ways to reduce or prevent wastes. Businesses are offered vouchers to offset the cost of implementing requirements or recommendations through KCHD's business Voucher Incentive Program. KCHD also produces resources for businesses including brochures, fact sheets, online and CD versions of the Dangerous Waste Guide for Kitsap County (a compendium of waste handling resources for Kitsap County), and maintains a resource library that is available by appointment. The library has reference materials and brochures on vendors who sell equipment and supplies.

  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. Businesses may become certified at a 2 to 5 star rating. Recognition includes certificates, window decals, use of the EnviroStars logo for marketing, and free publicity. Since the program began in 1997, more than 100 businesses have been certified by EnviroStars.

  Education and Outreach: KCHD provides education and outreach for businesses through presentations to business groups, training workshops, and participation in booth events where SQG information is provided to businesses.

  Complaint Response and Enforcement: KCHD investigates hazardous waste complaints and conducts enforcement, as necessary, to achieve compliance with hazardous waste regulations.

- **Regional Collaborative Approaches:**

  Local Source Control Partnership: The Solid Waste Division and KCHD were among 12 local agencies funded through the State Puget Sound Partnership to hire specialists to help area small businesses control, reduce, or eliminate toxic pollution sources. This effort is currently funded through June 2011.

Members of the Local Source Control Partnership have expressed concerns related to hazardous waste management, water quality, shellfish, and water conservation. The approach taken will capitalize on ongoing programs in the counties and cities such as Kitsap County Surface & Stormwater Management / KCHD water quality sampling program, KCHD Pollution Identification and Control program, the SQG program, Green Building, Green Cleaning, Product Stewardship, Sustainable Clean Air, and business education outreach programs mandated by municipal stormwater discharge permits.

11.2.3 Collection

Collection programs available in Kitsap County include:

- The HHW Facility: a full service fixed facility that serves households and SQGs
- Six limited service HHW collection facilities co-located at the Recycling & Garbage Facilities in Bainbridge Island, Hansville, Olalla, Silverdale, the Poulsbo Recycle Center, and OVTS in Port Orchard
- One limited service collection facility at Naval Base Kitsap-Bangor that serves Navy maintenance, motor pool, and warehouse operations, and collects used oil and automobile batteries from residents
- North-end HHW collection events
- Nine privately operated used oil collection sites
- Private hazardous waste service providers

HHW Facility and MRW Programs

The HHW Facility, located in the Olympic View Industrial Park across Highway 3 from the Bremerton National Airport, is the most comprehensive collection site for HHW. Although named the "HHW 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 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.

In 2009, Kitsap County continued the Interlocal Agreement with Mason County to supplement their HHW collection program by offering Mason County residents the use of the Facility. Mason County currently pays a per customer charge for the use of the HHW Facility helping to defray management costs.

Household Hazardous Waste Collection

For residential customers, the HHW Facility is open Thursday, Friday, and Saturday between the hours of 10:00 a.m. and 4:00 p.m. The HHW 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 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 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 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.

Table 11.1
Materials Collected at County Owned or Operated MRW Facilities

Material	HHW Facility	Bainbridge	Hansville	Olalla	Poulsbo	Silverdale	OVTS
Used Oil	✓	✓	✓	✓	✓	✓	✓
Antifreeze	✓	✓	✓	✓	✓	✓	✓
Household & Vehicle batteries	✓	✓	✓	✓	✓	✓	✓
White goods		✓	✓	✓	✓	✓	✓
Fluorescent tubes	✓				✓		
Compact flourescent lights	✓	✓	✓	✓	✓	✓	✓
Fertilizers-re-use quality	✓						
Paint - latex & oil-based	✓						
Pesticides	✓						
Used Oil Filters	✓	✓	✓	✓	✓	✓	✓
Acids & bases	✓						
Flammables & oxidizers	✓						
Solvents	✓						

In 2009 the HHW Facility served 6,761 Kitsap County residents, which represents an average of 148 customers per week and a 12% increase compared with 2008. In addition, there were 648 out-of-county residents, a 17% increase compared with 2008. Of that number, 643 were from Mason County.

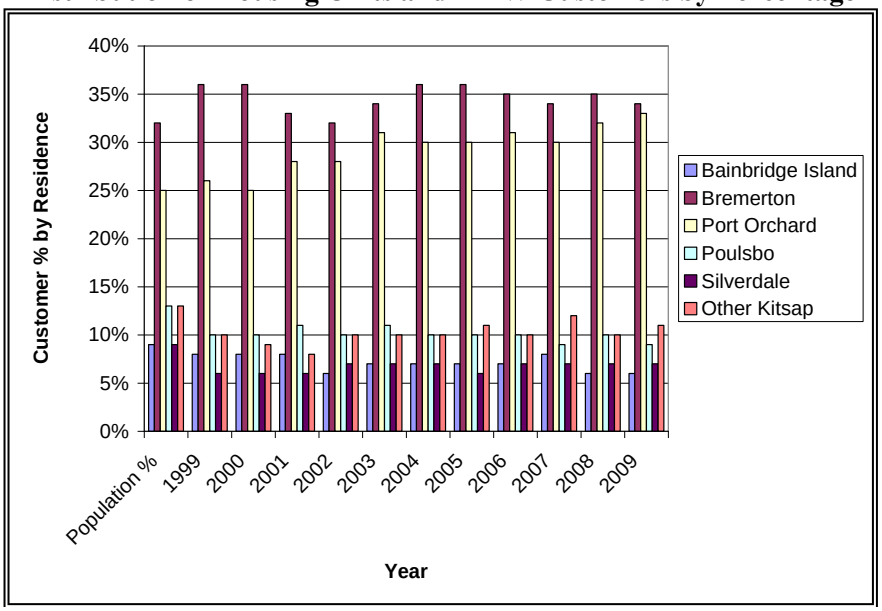
Users of the HHW Facility come from throughout the County. Bremerton, with the largest population and Port Orchard, with the shortest travel distance, provided almost two-thirds of the customers in 2009 (see Figure 11-1). Poulsbo, Silverdale, and Bainbridge Island each provided less than 10% of the customers.

North-end Mobile Remote Collection Event

Remote collection events have been scheduled in the north-end of the County approximately every other year for the past several years. A multi-agency planning group agrees on which waste streams to target and staffing is contracted, with support from Solid Waste Division staff and volunteers.

The Solid Waste Division, in cooperation with the City of Bainbridge Island, Rotary Club of Bainbridge Island, Meadowmeer Water Service District and the Natural Landscapes Project, conducted the most recent household hazardous waste collection event in September 2009.This was a "targeted" collection, focused on yard maintenance chemicals, oil-based paint products, and related materials. These waste streams are of concern due to their toxicity and flammability. The one-day event processed 315 vehicles, and managed 24,630 pounds of waste. All of the material was properly packaged, loaded onto a trailer and shipped off-site for management the same day.

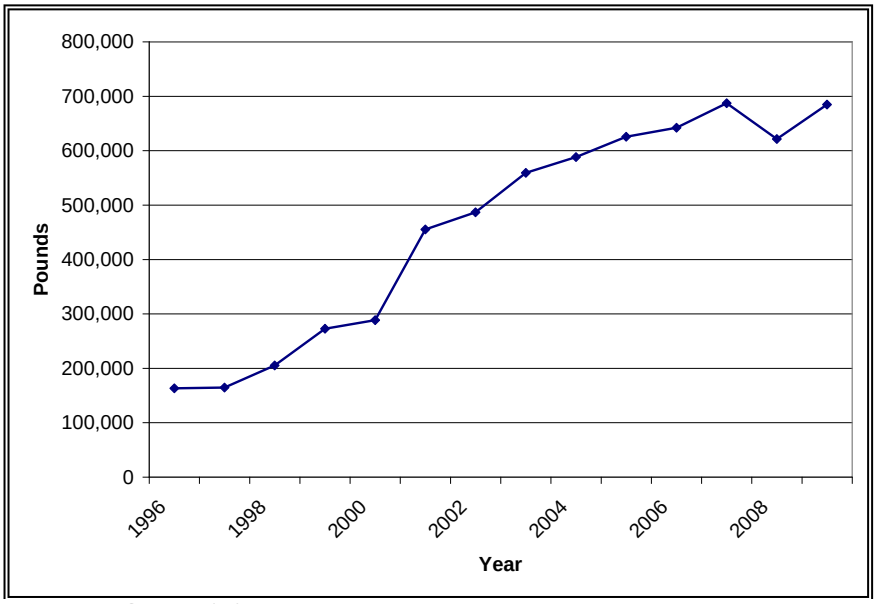
Figure 11-1
Distribution of Housing Units and HHW Customers by Percentage



Source: Kitsap County 2010.
Note: Housing units are selected as the unit of measure in place of customers, because it is expected that each customer represents one or more housing units. Customers who deliver wastes are counted as a separate housing unit on each delivery.

Figures 11-2 and 11-3 show the history of how much was collected and how many customers were served at the HHW Facility since it opened in 1996. As these figures show, both have grown substantially in the past decade.

Figure 11-2
Pounds Collected Per Year 1996 – 2009



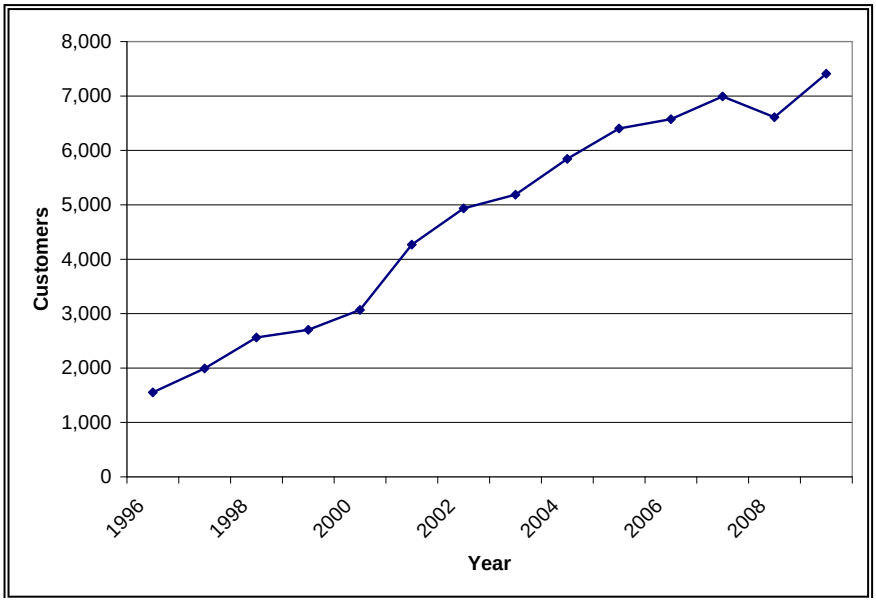
Source: Kitsap County 2010.

Table 11.2
Fate of Materials Collected at the HHW Facility (Pounds), 2009

Waste Type	Amount Received	Reused/Recycled	Energy Recovery	Treatment/Disposal
Acids	4,931	0	0	4,931
Antifreeze	8,356	8,356	0	0
Bases	5,842	0	0	5,842
Batteries – Household	41,997	4,594	0	37,403
Batteries – Vehicle	20,884	20,884	0	0
Compressed Gas	604	0	0	604
Fertilizers	1,528	1,528	0	0
Flammable Liquids	78,827	5,615	73,212	0
Flammables (Other)	16,617	2,210	11,148	3,259
Latex Paint	220,772	69,875	0	150,897
Mercury	88	88	0	0
Mercury-Fluorescent Lamps and CFL's	12,554	12,554	0	0
Oil-based Paint	207,229	4,291	202,503	435
Oil Filters	0	0	0	0
Oil-Non Contaminated	29,315	1,534	27,781	0
Organic Peroxides	15	0	0	15
Other-Dangerous Waste	1,570	0	0	1,570
Oxidizers	4,480	0	0	4,480
Pesticides	28,907	0	0	28,907
Reactives	68	0	0	68
TOTALS	**684,584 342.29 tons**	**131,529 65.76 tons**	**314,644 157.32 tons**	**238,411 119.21 tons**

Source: Kitsap County 2010.

Figure 11-3
Customers Served Per Year 1996 – 2009



Source: Kitsap County 2010.

Business Hazardous Waste (Small Quantity Generator) Collection Program

Businesses can access a convenient and affordable waste management program for SQG waste through the HHW 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 Facility accepts wastes from SQGs usually on the third and fourth Wednesday of each month, by appointment only. Businesses can access an appointment application and inventory sheet on the Solid Waste Division's webpage.

Businesses routinely participating in the SQG collection program include dental/medical offices, school districts, auto body repair shops, research laboratories, governmental entities, contractors, and offices. In addition to sterilizing solutions, dental offices bring developer and fixer 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, general office waste, construction waste, and automotive wastes. The SQG collection program accepts fluorescent lamps, but recommends that businesses that generate large quantities of bulbs contract with a vendor rather than using the HHW Facility.

In 2009, 195 businesses kept 306 appointments for SQG waste management. These businesses brought 107,116 pounds (54 tons) of waste to the HHW Facility (Table 11.3). These totals are approximately equal to those reported for 2008.

Used Uncontaminated Motor Oil Collection Program

There are five used oil drop-off collection sites co-located with OVTS and the RAGFs in addition to the

collection offered at the HHW Facility. Residents are not charged a fee to participate in the used oil program.

The number of customers using those sites is estimated. In 2009, it is estimated that at least 5,331 customers participated in the used oil collection program, a 15% increase from 2008. In 2008, 38,375 gallons of used motor oil was collected, an 8% increase from 2008 (Figure 11-4).

Used Antifreeze Collection Program

Solid Waste Division staff worked for several years to design and implement a Countywide used antifreeze collection program mirroring the uncontaminated used motor oil collection program. OVTS and the RAGFs participate in the program. In 2009, at least 1,116 customers used the antifreeze collection program, a 14% increase from 2008. There is no convenient way to track the number of customers that use the unstaffed antifreeze area at OVTS. In 2009, 4,205 gallons of used antifreeze was collected, an 8% increase over 2008 (Figure 11-5). Residents are not charged a fee to participate in the used antifreeze program.

Battery Collection Program

Vehicle batteries contain corrosive chemicals and lead and should never be placed in the trash. The Solid Waste Division coordinates the collection and recycling of lead acid (automobile, motorcycle, and utility) batteries for recycling at the RAGFs and OVTS. In 2009, 3,957 batteries were collected for recycling (138,495 pounds), a 2% decrease from 2008 (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. 653 buckets of batteries (48,975 pounds) were collected and brought to the HHW Facility for processing in 2009, a 20% increase from 2008 (Figure 11-7). Rechargeable batteries are recycled using the Rechargeable Battery Recycling Corporation's industry-sponsored program, in an example of product stewardship. Residents are not charged a fee to participate in the household battery program.

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 (CFCs), 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 2009, customers brought in 1,866 CFC-containing appliances and 2,988 non-CFC appliances (see Figure 11-8). The total of 4,854 units is a 7% decrease from 2008. Residents are charged a fee to recycle/dispose of white goods.

Table 11.3
SQG Waste Collected at HHW Facility (Pounds), 2009

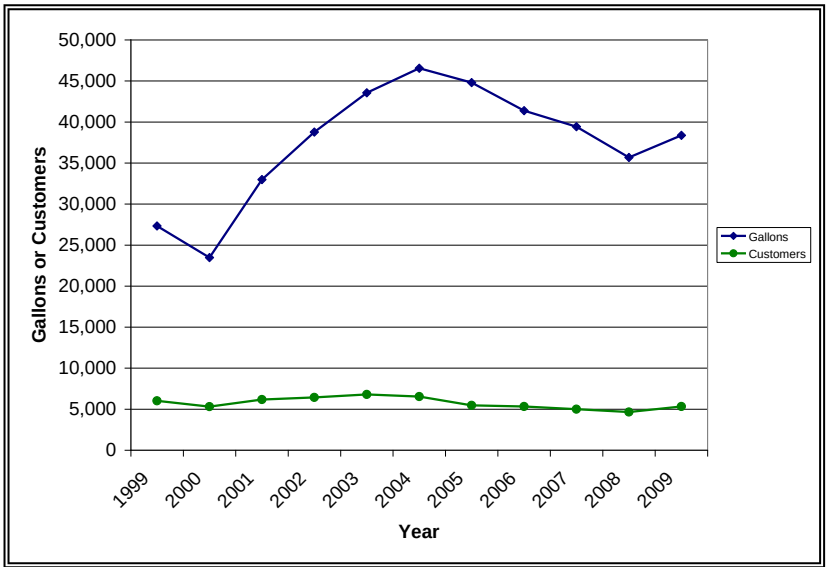
Waste Type	Amounts Received	Reused/Recycled	Energy Recovery	Treatment/Disposal
Acids	1,519	0	0	1,519
Antifreeze	654	654	0	0
Bases	1,156	0	0	1,156
Batteries – Household	3,737	1,797	0	1,940
Batteries – Vehicle	1,596	1,596	0	0
Compressed Gas	0	0	0	0
Fertilizers	0	0	0	0
Flammable Liquids	22,886	0	22,886	0
Flammables (Other)	1,606	0	641	965
Latex Paint	17,213	3,590	0	13,623
Mercury	249	249	0	0
Mercury-Fluorescent Lamps and CFL's	16,106	16,106	0	0
Oil-based Paint	24,196	0	24,196	0
Oil Filters	0	0	0	0
Oil-Non Contaminated	894	0	894	0
Organic Peroxides	0	0	0	0
Other-Dangerous Waste	10,490	0	0	10,490
Oxidizers	254	0	0	254
Pesticides	4,532	0	0	4,532
Reactives	28	0	0	28
TOTALS (in pounds)	**107,116 53.56 tons**	**23,992 12.0 tons**	**48,617 24.31 tons**	**34,507 17.26 tons**

Source: Kitsap County 2010.

Mercury Collection Programs

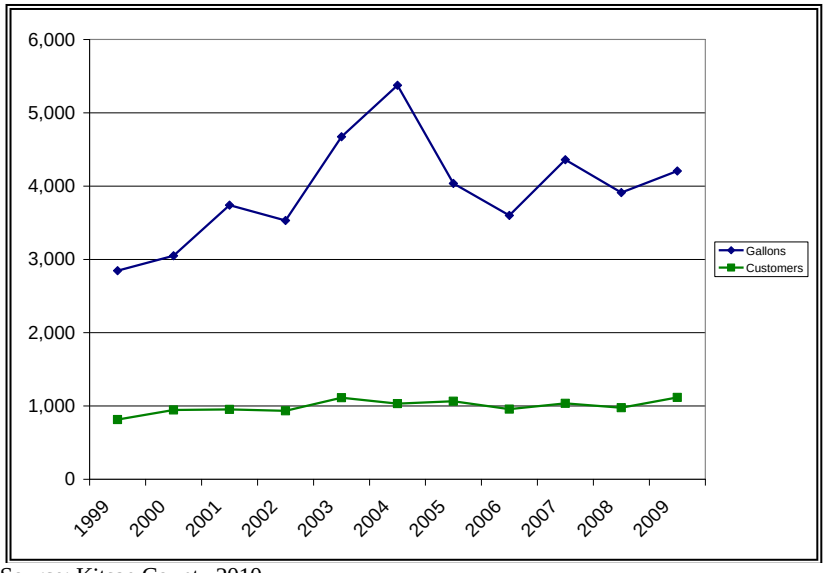
The collection and proper management of mercury is a priority for the Washington State Departments of Health and Ecology to protect not only human, but environmental health. Elemental mercury, mercury-containing devices such as thermometers, thermostats, and automotive switches, and other mercury debris such as dental amalgam are managed at the HHW Facility. The Solid Waste Division participated in an Ecology-funded program to highlight the risks mercury poses by placing ads targeting mercury in local newspapers. The ad gives information about Kitsap County's HHW Facility, which takes mercury from area residents year-round for no charge. The HHW Facility also has a comprehensive SQG program that accepts mercury-bearing waste from qualifying businesses by appointment, at very reasonable costs.

Figure 11-4
Used Oil Collection 1999 – 2009



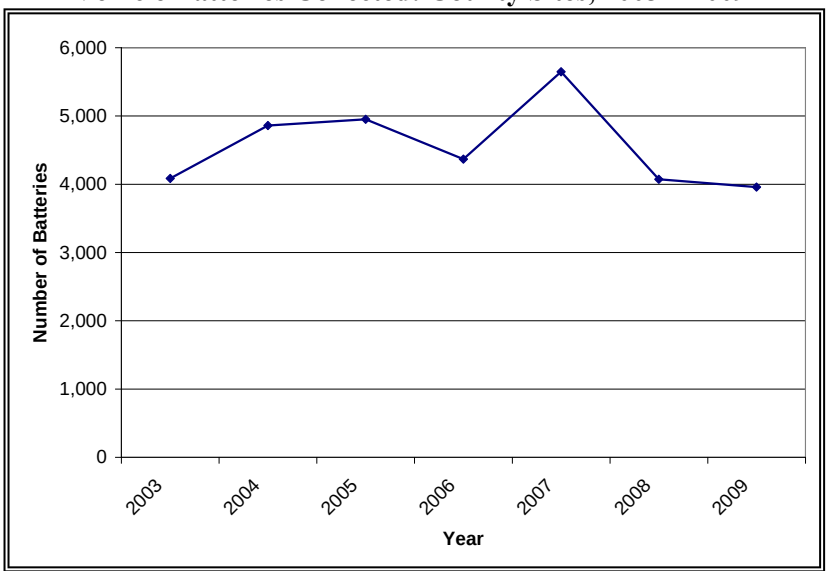
Source: Kitsap County 2010.

Figure 11-5
Used Antifreeze Collection 1999 – 2009



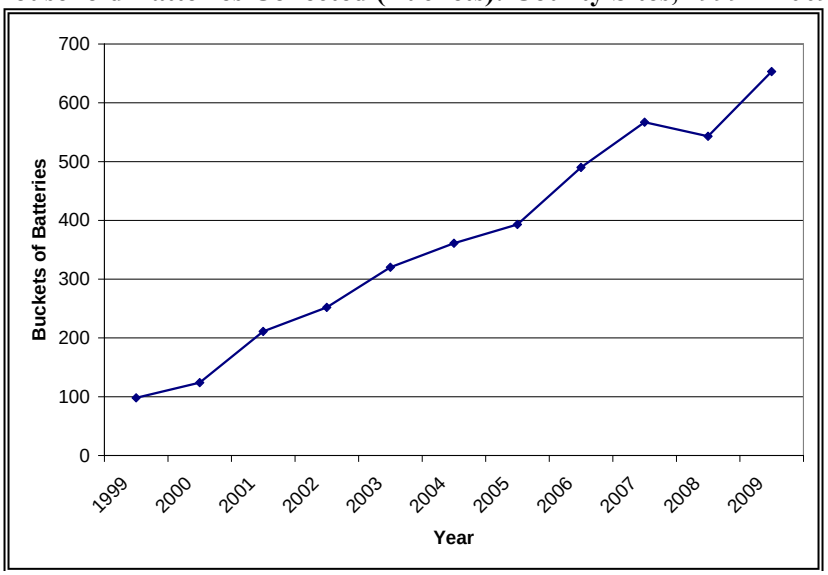
Source: Kitsap County 2010.

Figure 11-6
Vehicle Batteries Collected: County Sites, 2003 – 2009



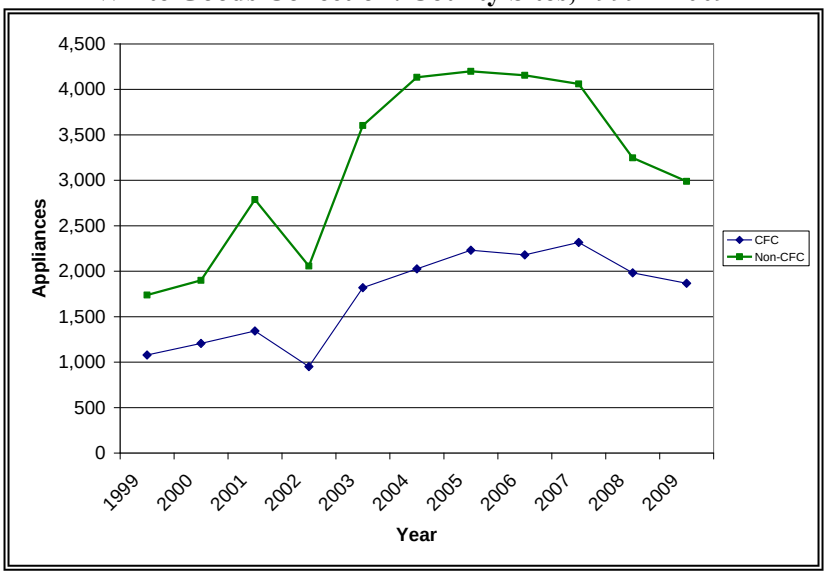
Source: Kitsap County 2010.

Figure 11-7
Household Batteries Collected (Buckets): County Sites, 1999 – 2009



Source: Kitsap County 2010.

Figure 11-8
White Goods Collection: County Sites, 1999 – 2009



Source: Kitsap County 2010.

In 2006, the Solid Waste Division participated in a Department of Health project to remove mercury and mercury-containing items from schools. The disposal costs of the materials brought to the HHW Facility by the five school districts in Kitsap County were offset by a grant from the Department of Health.
Kitsap County also 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 Recycling and Garbage Facilities, as well as at OVTS, Poulsbo Recycle Center, and the HHW Collection Facility. In 2009, area residents dropped off 6,410 compact fluorescent lamps at these locations. The Poulsbo Recycle Center also accepts 4' straight fluorescent tubes, and the HHW Collection Facility takes all other types of mercury bearing lamps.

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 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 Facility capacity, limited public access to the restricted areas of the HHW Facility, 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 2009, 692 customers re-used 35,372 pounds of materials, a 16% increase in customers and 20% increase in materials compared to 2008.

11.2.5 Proper Management of Collected Wastes

The materials received at the HHW Facility, RAGFs, 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 white goods. The Solid Waste Division provides necessary supplies and safety equipment to manage the program and arranges for the removal and proper management of the commodities.

A total of 684,584 pounds (342 tons) of HHW were received at the HHW Facility in 2009. This is a 10% increase from 2008. In the twelve years the HHW Facility has operated, over 6.44 million pounds (3,220 tons) of hazardous waste has been collected for proper management, thereby protecting the health of Kitsap County residents and the environment.

11.2.6 MRW Compliance & Enforcement

MRW is regulated by KCHD. Ordinance 2004-2 adopts state solid waste and MRW regulations by reference, and amends them to define and regulate used oil and MRW storage, MRW accumulation, transportation, spill response, and SQG storage. Used oil signage requirements (WAC 173-330) are adopted by reference.

KCHD requires solid waste handling facilities to identify and remove unacceptable wastes that otherwise may enter the municipal solid waste 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 through 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.
KCHD coordinates with other state and local environmental, fire safety, health, and building code agencies to provide technical assistance and compliance inspections of SQGs.

As part of the Clean Kitsap program, the Public Works Surface and Stormwater Maintenance crew responds to complaints about illegally dumped household hazardous materials on road right-of-way and public areas. If the material is easily identifiable as standard household hazardous products, such as paint, motor oil, etc., the crew collects it and brings it to the HHW 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.

KCHD receives reports of illegally dumped hazardous materials from Kitsap 1. These reports are investigated to evaluate the resources needed to remove the materials for transfer to the HHW Facility or collection by a commercial vendor. KCHD's Abandoned Waste Clean-up Fund covers costs for the proper management of illegally dumped hazardous materials. This clean-up fund is financed through the solid waste tipping fee.

11.2.7 Evaluation

The County 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.

11.2.8 Program Analysis – Success Measures Compared To State Averages

The following evaluation is based on 2007 data, as presented in *Solid Waste in Washington State, 17th Annual Status Report, December 2008*, which is the most recent analysis available at the time of this writing. The analysis allows a comparison of the MRW collection programs in Kitsap County with those in other parts of Washington.

***Participants per Housing Unit*:** In 2007, an estimated 6.8% of County residents managed their HHW using one of the County facilities, as compared to the average participation statewide of 8.2%.

Cost per Participant: Kitsap County's cost per residential participant for managing HHW is $110.30. In other counties the reported cost per participant ranges from $5.37 (Klickitat) to $487.50 (Pacific). Unfortunately, this statistic is difficult to analyze because there are so many variables in program costs and how costs are reported. Some counties only record direct costs, while others include indirect costs as well. In general, larger programs have the advantage of economies of scale, and counties located closer to hazardous waste service providers experience lower transportation costs.

Pounds per Participant: Kitsap County collected an average of 100 pounds of HHW per participant, compared with a statewide average of 75 pounds per participant.

Business Participation: The rate of business participation in SQG programs cannot be determined because SQGs are not required to register or report their waste generation activities. KCHD estimates, based on Department of Revenue and Department of Labor and Industries data that allow one to determine the number of businesses in each Standard Industrial Code likely to generate hazardous wastes, indicate that there may at least 3,500 SQGs in Kitsap County. This is significantly fewer than the 7,000+ estimated in the 1999 Plan. Business participation may vary from year to year due to factors such as economic cycles, stockpiling of waste, access to and use of commercial waste vendors, and substitution of non-hazardous materials in manufacturing and business applications.

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.

11.2.9 Latex Paint

Latex paint represents nearly 33% of all materials collected at the HHW Facility and represents a large portion of the cost of managing MRW. Newer latex paints are not considered hazardous, and some 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. This is sometimes considered less than satisfactory because residents with larger inventories of paint find it time consuming and may object to the air emissions. 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 Solid Waste Division continues to collect paint through the MRW program, but supports the development of alternative management options that are more sustainable in terms of cost and environmental protection. The Solid Waste Division is in the process of evaluating how collected paint is managed. In addition, the Solid Waste Division 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 Facility and into the solid waste stream at a later date.

Table 11.4
Kitsap Household Hazardous Substances List

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 Toxins[1]	Mercury, lead, polybrominated diphenyls, polycyclic aromatic hydrocarbons, polychlorinated biphenyls
Hobby and Recreation	Photo & pool chemicals, glaze, paint, white gas
Miscellaneous [1]	Ammunitions, fireworks, asbestos

[1]Ammunitions, fireworks, and certain persistent bio-accumulative toxins are not handled as part of Kitsap County's MRW Program. Asbestos is not accepted as part of Kitsap's MRW Program, although asbestos disposal is available at OVTS.

11.2.10 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.

Pilot take-back programs at Group Health Cooperative and some Washington pharmacies have shown the viability of product stewardship models for this waste stream. Kitsap County supports such initiatives, and legislative efforts to require manufacturer funding and support of take-back programs. Continuing education on improper disposal of unused medication is also needed.

11.2.11 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 lists 22 facilities in Kitsap County that accept uncontaminated used oil from residential customers, including the U.S. Navy's used oil collection facilities for their own personnel at Bangor. 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 2 miles of a used oil collection facility. Kitsap County's program was compared to this benchmark as follows:

- Based on the 2007 population, providing one facility for every 10,000 residents would require 25 facilities. There are currently 22 facilities, indicating that three additional facilities would be needed in order to meet the state guideline criteria; and/or

- Based on 2007 population densities, 78% of Kitsap County's population lives within 2 miles driving distance of a facility. The current level of service is less than the state guideline criteria of 90%. Figure 11-8 demonstrates that 96% of all residents live within 10 miles driving distance of a used oil collection facility.

Though the current service level 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 Solid Waste Division 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 been declining since 2004. 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. The slight decline in drop-off site use corresponds to the increase in value of used oil as a commodity.

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.

It is recommended 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.

11.2.12 Feasibility Study for North End HHW Collection Services

The Solid Waste Division received a Coordinated Prevention Grant from Ecology for 2007 - 2008 to conduct a feasibility study regarding expanded HHW collection services in the North Kitsap County and Bainbridge Island area. These households currently represent approximately 41% of the County's population, which is expected to increase as the urban growth boundaries expand in Bainbridge Island, Kingston, Suquamish, Poulsbo, and Silverdale to accommodate the expected growth projected over the next 20 years.

Some North-end residents must make a 70-mile or longer round trip to deliver wastes to the HHW Facility. 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, occasional targeted mobile collection events have been held; 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 can reduce carbon emissions associated with

vehicle trips from North Kitsap and Bainbridge Island.

In 2008, the Solid Waste Division hired consultants to complete two tasks:

- A study of alternative household hazardous waste 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 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.

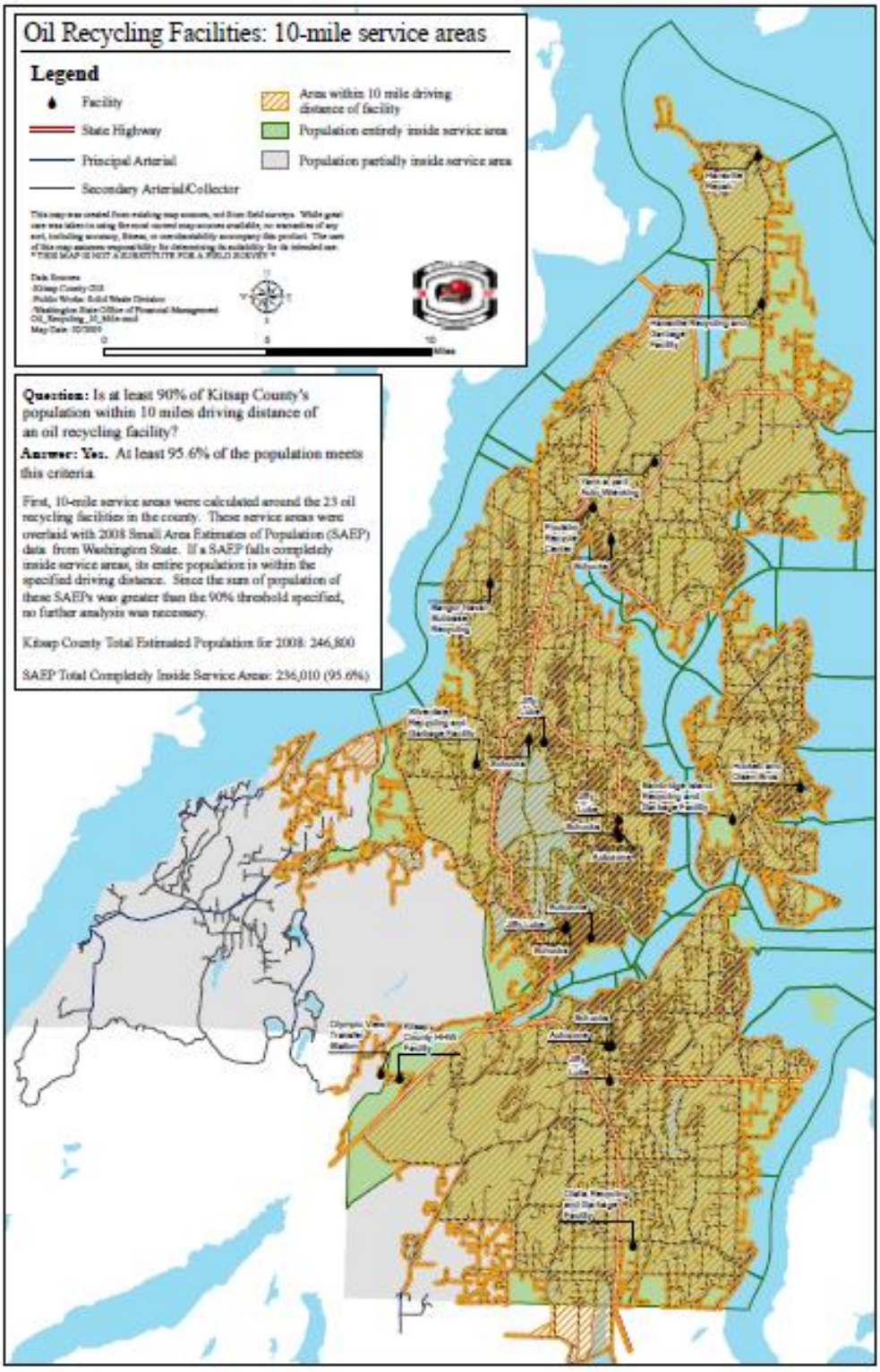
According to the study, any of these options, if utilized, would result in carbon footprint reductions of at least 13% per year.

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 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).

Given the results of the feasibility study, the Solid Waste Division will 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

Figure 11-9
Oil Recycling Facilities - 10-mile Service Areas



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. 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.

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 Poulsbo 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 pilot program to collect compact fluorescent light bulbs (CFLs) at the Recycling and Garbage Facilities (RAGFs). Based on the results of the pilot program either revise, close, or expand to a permanent program.

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 Facility by increasing efficiencies and processing capability. This may be in the form of equipment upgrades, layout design changes, facility expansion, or altering hours of operation or materials accepted.

6) Continue to monitor demand for additional drop-off recycling of used oil. If demand

increases, evaluate the potential to increase the number of drop-off locations.

7) 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.

8) KCHD 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.

9) KCHD will work with public and private entities to develop and maintain a list of businesses in Kitsap County who are Small Quantity Generators.

10) Ensure that MRW is managed in accordance with the applicable regulations (KCHD Ordinance 2004-2, SW Regulations).

11.5 REFERENCES/RESOURCES

Kitsap County Department of Public Works, Solid Waste Division. 2010. *Kitsap County Department of Public Works, Solid Waste Division 2009 Annual Report (unpublished).* Prepared by the Kitsap County Department of Public Works, Solid Waste Division. Port Orchard, Washington.

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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 is the true cost of providing service (transfer, transportation, recycling, and disposal) to solid waste facility customers?
- What are the options and issues of concern related to managing debris following a natural, man-made, or biological 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 (RCW 70.95), with primary responsibility for management assigned to local government. The Department of Ecology provides oversight and technical assistance to local implementing agencies, and issues regulations governing various aspects of solid waste including solid waste handling, landfilling, special waste management, and remedial action.

Ecology also provides financial assistance to local government, primarily through the Coordinated Prevention Grant 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.

The WUTC regulates commercial and residential garbage collection and collection of residential recyclables. WUTC's role is discussed in Chapter 7 (Collection).

12.2.2 Kitsap County

Within Kitsap County, responsibility for solid waste management is shared between the Solid Waste Division and KCHD.

Solid Waste Division

The Solid Waste Division, a division of the Public Works Department, reports to the Board of County Commissioners. It is the lead agency in charge of long-range planning and implementation of solid and hazardous waste programs. The Solid Waste Division promotes waste prevention and product stewardship, manages waste prevention, 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.

As of 2009, the Solid Waste Division has approximately 24 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 and enforce regulations governing solid waste handling practices. Kitsap County's regulations governing solid waste handling practices are found in Title 9 of the Kitsap County Code.

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 mandatory solid waste collection districts (RCW 36.58A). Currently, the formation of a solid waste collection district is not being considered. The Solid Waste Division has established criteria to determine the minimum level of recycling service for residents of unincorporated Kitsap County. A detailed description of service level boundaries is found in Kitsap County Code 9.48. An amendment will be required to implement county-wide curbside recycling services.

Kitsap County Health District (KCHD)

KCHD reports directly to the Kitsap County Board of Health, which is comprised of City and County officials. The Solid Waste Program of KCHD 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.

KCHD also offers hazardous waste technical assistance to businesses, performs Site Hazard Assessments 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.

KCHD has 3.5 FTE responsible for solid waste operations and enforcement (2009), a decrease of 2 FTE from 1999. An additional 1.5 FTE are responsible for hazardous waste programs and enforcement. Staffing decreases are largely due to closure of Kitsap County's only operating

permitted landfill 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 alternates from the County, the solid waste industry, the commercial and organics sectors, the Navy, Indian tribes, and all incorporated cities.

The SWAC's role is to advise the Solid Waste Division 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 Interlocal Agreement (ILA), included in Appendix A that directs the Solid Waste Division to develop long-range solid and hazardous waste plans on their 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 citizen 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 S'Klallam Tribe participates in the Waste Wise Communities Plan through an ILA. In lieu of an ILA, the Suquamish Tribe's participation in this Plan is through a Memorandum of Understanding (MOU) (Appendix B).

Under federal law, the Environmental Protection Agency 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 KCHD 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, KCHD, EPA, 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, Naval Base Kitsap-Bremerton, Puget Sound Naval Shipyard, Naval Base Kitsap-Bangor, and Naval Base Kitsap-Keyport, are collectively known as Navy Region Northwest. The Navy hauls its commercial and industrial solid waste directly to OVTS for disposal. The base operating support contractor, Waste Management, provides residential collection of garbage and recyclables free to households as a benefit of on-base living. Residential garbage is transported to OVTS for disposal. 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 an MOU that recognizes the Solid Waste Division as the lead solid and hazardous waste planning authority.

12.2.3 Funding and Finance

The majority of the costs incurred by the Solid Waste Division are for daily transfer operations at OVTS and the RAGFs.

Revenues are generated from three sources: disposal fees on garbage and yard debris (98%), Washington Department of Ecology grants (1%), and other miscellaneous fees and interest (1%). The current disposal fee is $62.02 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.

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. Solid Waste Division 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 Solid Waste Division 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 recycling and garbage facility operations, the Solid Waste Division programs, and the Clean Kitsap program. Other separate funds have been established for capital projects and individual landfill closure activities.

Table 12.1 details the 2009 cost components of the disposal fee.

Table 12.2 describes recent revenue and expenditure history for the three primary solid waste funds and a forecast for years 2012 and 2015. Given the recent economic downturn, with its resulting decrease in tonnage, it is difficult to predict when recovery might occur. For purposes of this forecast, it is assumed that revenue will increase by 1% per year through 2012, then by 3% per year through 2015. Expenditures are assumed to increase by 3% per year. The table assumes no new programs or activities resulting from implementation of this Plan, but rather a

continuation of current activities. Costs associated with implementation of new Plan recommendations are contained in Appendix A.

Table 12.1
Disposal Fee Breakdown

Component	Cost	% of Cost
WM Service Fee	$45.73	74%
Solid Waste Division	$12.28	20%
Health District	$2.08	3%
Clean Kitsap Fund (litter/illegal dumping)	$1.00	2%
B&O Taxes	$0.93	1%

As shown in the table, expenditures currently exceed revenues, and may continue to do so in the foreseeable future. This currently is the result of economic conditions, but may continue to be an issue as waste prevention, recycling, and product stewardship initiatives become more successful. There are no immediate plans to increase the disposal fee, as fund balances are adequate to cover shortfalls in the near-term. A rate study involving system-wide current and projected needs is recommended in this Plan.

Table 12.2
Revenues and Expenditures by Fund

Transfer Station (Fund 437)					
	2007 Actuals	**2008 Actuals**	**2009 Actuals**	**2012 Projected[a]**	**2015 Projected[b]**
Revenues					
OVTS Fees	$9,665,633	$9,137,428	$8,470,725	$8,727,396	$9,536,662
RAGF Fees	$1,145,029	$987,595	$896,643	$923,812	$1,009,475
Interfund Payments	$20,673	$24,111	$27,669	$28,507	$31,151
Interest	$42,242	$27,744	$3,950	$4,070	$4,447
TOTAL	**$10,873,577**	**$10,176,878**	**$9,398,987**	**$9,683,786**	**$10,581,734**
Expenditures					
OVTS Operation	$1,316,055	$1,313,919	$1,272,438	$1,390,427	$1,519,358
OVTS Disposal	$8,949,448	$8,208,314	$7,825,453	$8,551,084	$9,344,000
OVTS Taxes	$342,126	$278,533	$270,250	$295,309	$322,693
RAGF Operations	$344,324	$354,572	$308,574	$337,187	$368,453
RAGF Disposal	$263,547	$228,727	$374,622	$409,360	$447,318
RAGF Taxes	$53,314	$43,955	$42,280	$46,200	$50,485
TOTAL	**$11,268,814**	**$10,428,020**	**$10,093,617**	**$11,029,568**	**$12,052,307**

Solid Waste Division (Fund 401)					
	2007 Actuals	**2008 Actuals**	**2009 Actuals**	**2012 Projected[1]**	**2015 Projected[2]**
Revenues					
OVTS Fees	$3,120,453	$2,407,467	$2,239,706	$2,307,571	$2,521,545
RAGF Fees	$754,821	$598,503	$535,968	$552,208	$603,413
HHW Collection Facility Fees	$81,319	$80,599	$81,906	$84,388	$92,213
Interfund Payments	$84,130	$76,535	$102,459	$105,564	$115,353
Grants	$148,107	$463,715	$481,470	$350,000	$350,000
Interest	$279,090	$226,865	$141,753	$146,048	$159,591
TOTAL	**$4,467,920**	**$3,853,684**	**$3,583,263**	**$3,691,839**	**$4,034,172**
Expenditures					
Administration	$705,008	$1,033,881	$792,116	$865,567	$945,828
RAGF Operations	$259,443	$279,907	$228,723	$249,932	$273,107
RAGF Disposal	$235,336	$194,966	$309,069	$337,728	$369,045
Waste Reduction/ Recycling Programs	$492,668	$280,169	$585,759	$640,075	$699,427
MRW Operations & Disposal	$884,489	$1,071,155	$1,027,448	$1,122,720	$1,226,827
Closed Landfill Oversight	$98,610	$106,411	$96,964	$105,955	$115,780
Transfer to Capital Fund	$306,000	$306,000	$306,000	$334,374	$365,380
TOTAL	**$2,981,554**	**$3,272,489**	**$3,346,079**	**$3,656,351**	**$3,995,393**
Clean Kitsap Fund (Fund 430)					
Revenues	$218,519	$196,585	$218,781	$225,410	$246,312
Expenditures					
Operating Expenses	$146,988	$179,561	$87,374	$95,476	$104,329
Interfund Payments	$32,316	$38,510	$93,922	$102,631	$112,148
Transfer to Nuisance Abatement Fund		$151,900	N/A[3]	N/A[3]	N/A[3]
TOTAL	**$179,304**	**$369,971**	**$181,296**	**$198,107**	**$216,477**

[1]Assumes revenues increase by 1% per year, expenditures increase by 3% per year; grants one-half of projected biennial allocation.
[2]Assumes revenues and expenditure increase by 3% per year.
[3]The amount of future transfers to the Nuisance Abatement Fund is subject to interagency negotiation and cannot be determined at this time.

12.2.4 Disaster Debris Management

When disasters like floods or tornados hit a community, solid waste management is usually the last thing on anyone's mind. However, natural disasters can generate tons of debris, including building rubble, soil and sediments, green waste (e.g., trees and shrubs), personal property, ash, and charred wood. All of this waste material can place an additional burden on a community already struggling to cope with a natural disaster.

The amount of debris generated from a disaster varies. The best advice for a community is to put a disaster debris management plan in place before an emergency happens. A disaster debris management plan can help a community identify options for collecting, recycling, and disposing of debris. Not only does a plan identify management options and sources for help, but it also can save valuable time and resources, if needed. At this time, Kitsap County does not have a written disaster debris management plan.

The benefits of putting a recovery plan in place before a disaster occurs include:

- Reducing time needed to identify debris management options after a disaster.
- Saving money by avoiding rushed decisions that could result in costly mistakes in disaster waste management.
- Reducing potential hazards by identifying which hazards may exist, who will address them, and how (EPA 2009).

Debris removal is a major component of every disaster recovery operation. Soil, building material, and green waste, such as trees and shrubs, make up most of the volume of disaster debris. Much of this waste can be recycled. Debris from hurricanes, earthquakes, tornadoes, floods, and fires falls into a few major categories:

Table 12.3
Major Categories of Disaster Debris

	Damaged Buildings	Sediments	Green Waste	Personal Property	Ash and Charred Wood
Hurricanes	X	X	X	X	
Earthquakes	X	X	X	X	X
Tornadoes	X		X	X	
Floods	X	X	X	X	
Fires	X			X	X

Source: http://www.epa.gov/osw/conserve/rrr/imr/cdm/pubs/disaster.htm#volume

Considerable federal assistance is available from Federal Emergency Management Administration (FEMA) if a disaster is declared a national emergency. In addition to FEMA, the US Army Corps of Engineers (USACE) and the US Environmental Protection Agency (EPA) can provide federal assistance. Having a disaster debris management plan in place can help a community identify needs and qualify for reimbursement.

FEMA is authorized to pay for activities to handle debris posing an immediate threat to the public, generally including debris removal, transportation, volume reduction at staging areas, and ultimate disposal. FEMA requires careful recordkeeping regarding expenditures for communities to obtain reimbursement. FEMA may fund recycling of disaster debris if the local government has in place prior to the natural disaster a policy emphasizing recycling, or if the local government can demonstrate that recycling is a cost-effective debris management option. Any plan should include a detailed strategy for debris collection, temporary storage and staging areas, recycling, disposal, hazardous waste identification and handling, administration, and dissemination of information to the public. (FEMA 2009).

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 a 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:

- Include the cost of "free" recycling in the disposal fees at the Recycling and Garbage Facilities.
- Set rate structures at Recycling and Garbage Facilities such that it less costly for customers with small volume loads to sign up for curbside collection than it is to self-haul their garbage.
- Encourage customers to consolidate their materials so that they bring fewer but larger loads.
- Encourage customers with large loads and C&D materials to deliver their materials directly to OVTS.
- Consider the potential impact of rate structures on illegal dumping.

- Consider the needs of low-income residents.
- Remain stable for a 5-year period.
- Charge equivalent fees at each of the County-owned RAGFs.
- Generate sufficient revenue to cover the costs of operations, maintenance, and reserve requirements.

3) Prepare a disaster debris management plan that addresses issues specific to managing wastes and recyclables with input from the Kitsap County Department of Emergency Management, Kitsap County Health District, Cities, haulers, and other stakeholders. Ensure that the plan addresses FEMA cost recovery and management requirements.

12.5 REFERENCES/RESOURCES

Federal Emergency Management Agency (FEMA) 2009. Disaster debris management information accessed at: http://www.fema.gov/government/grant/pa/debris_main.shtm.

U.S, Environmental Protection Agency (EPA) 2009. Disaster debris management information accessed at: http://www.epa.gov/waste/conserve/rrr/imr/cdm/debris.htm

CHAPTER 13 - REGULATION & ENFORCEMENT

13.1 INTRODUCTION

This Chapter discusses solid waste regulation and enforcement, nuisance abatement, illegal dumping, and air quality. Kitsap County Health District (KCHD) is the lead enforcement agency responsible for enforcing solid waste regulations and permitting solid waste facilities in Kitsap County. The Solid Waste Division works with enforcement agencies to provide public and private property clean up assistance and offer alternatives to discourage litter and illegal dumping. The Kitsap Nuisance Abatement Team (KNAT), headed by Kitsap County Code Compliance, is a coalition of agencies that works together to resolve chronic nuisance property issues.

13.1.1 Planning Issues

The significant planning issues facing solid waste regulation and enforcement include:

- Is the KCHD Solid & Hazardous Waste Program adequately funded through existing tipping fees?
- What role should the Solid Waste Division play in assuring the long-term viability of 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?
- Would the County benefit by replacing the existing civil enforcement process with a hearing examiner process for solid waste and nuisance violations?

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 KCHD under Washington State Department of Health and Ecology regulation. KCHD enforces the Kitsap County Solid Waste Regulations (Ordinance 2004-2, Kitsap Board of Health), 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 KCHD District have a Memorandum of Understanding pertaining to enforcement of solid waste complaints and illegal dumping on tribal lands.

The Solid Waste Division implements relevant chapters of the health, welfare, and sanitation standards (Title 9, Kitsap County Code). These standards address disposal rates at County solid

waste facilities (Chapter 9.16), vehicle litter control (Chapter 9.17), and residential recycling and yard debris collection (Chapter 9.48).

Nuisance abatement activities are conducted by City and County Code Compliance agencies. Kitsap County Code Chapter 9.56, Nuisance Abatement, regulates these activities in the unincorporated county. Chapter 9.52 establishes roles, responsibilities, and authority of the KCHD, the Board of Health, and the Health Officer, to enforce statutes, rules, and regulations governing public health.

Solid Waste Permits

KCHD regulates solid waste handling facilities and collection companies through a permitting system. KCHD issued 44 solid waste handling permits in 2008 including 14 facility permits and 30 hauler permits, and conducted 130 inspections at permitted and conditionally-exempt solid waste facilities (Brower 2009). Table 13.1 presents a list of current solid waste handling facility permits. Hauler permits are issued to companies in one of three categories: Site Restoration Contractor, Biomedical Waste Transporter, and Mixed Municipal Solid Waste Transporter. To perform solid waste collection, however, a private transporter needs a certificate of public convenience and necessity from the WUTC.

Table 13.1
Active Solid Waste Handling Permits Issued by KCHD, 2008

SOLID WASTE FACILITIES	
Facility	**Location**
Kitsap County Household Hazardous Waste Collection Facility	Port Orchard
Bainbridge Island Recycling and Garbage Facility	Bainbridge Island
Hansville Recycling and Garbage Facility	Hansville
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
Emu Topsoil	Poulsbo and Hansville
Norseland Landfill (Closed)	Port Orchard
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

Source: KCHD 2008.

Conditionally Exempt Solid Waste Handling Facilities

Under Chapter 173-350 of the Washington Administrative Code (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. The Health District 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. woodwaste), and limited MRW facilities or MRW collection events.

Closed and/or Abandoned Landfills

KCHD regulates certain aspects of closed and/or abandoned landfills (CALFs) under KCBH Ordinance 2004-2, § 460, Construction and Notification Standards Near Landfills. CALFs are those historic landfills which were closed or abandoned prior to the effective date of WAC 173-304, 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.

CALFs reported to Ecology under the Model Toxics Control Act (MTCA) are listed on the Confirmed and Suspected Contaminated Sites List. Listed sites are ranked 1 - 5, the highest being a 1, or the site is recommended for No Further Action (NFA). There are currently 38 CALFs in Kitsap County. Thirty of them have been ranked as follows: NFA is recommended at ten landfills, four landfills were ranked 1, two landfills were ranked 2, five landfills were ranked 3, four landfills were ranked 4, and five landfills were ranked 5. The remaining landfills are either awaiting assessment, or participating in Ecology's Voluntary or Independent Clean-up Programs.

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, land-clearing 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, land-clearing fires were prohibited only in the urbanized areas of the County. A similar permanent ban on land-clearing burning was previously enacted in King, Pierce, and Snohomish counties. "Land clearing burning" means outdoor burning of trees, stumps, shrubbery, or other natural vegetation from land clearing projects (i.e., projects that clear the land surface so it can be developed, used for a different purpose, or left unused). WAC 173425-030 (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:

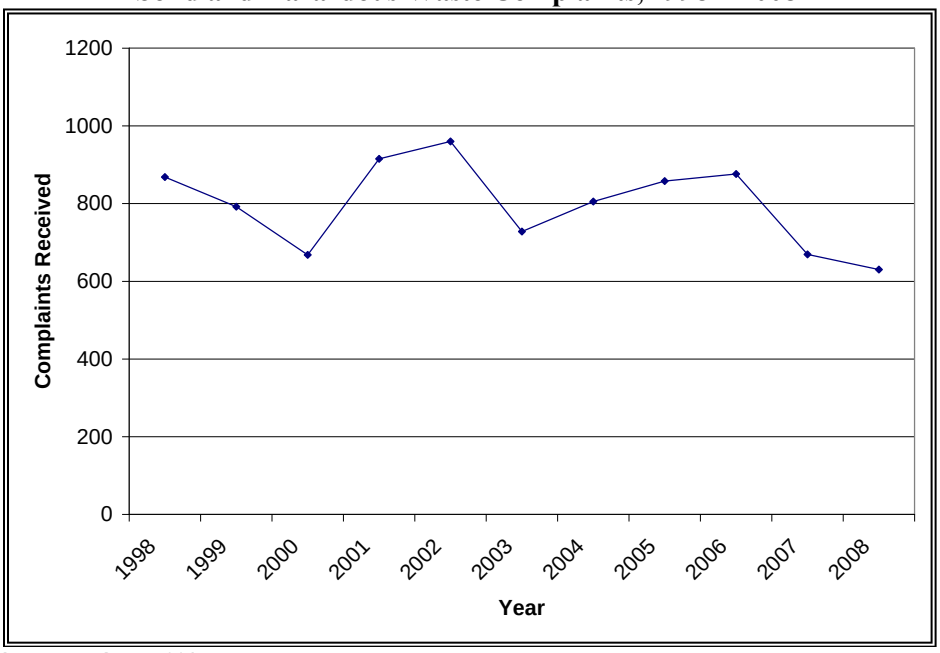
- Commercial property developers
- Residential property owners clearing land for building
- Contractors who clear and grade land

13.2.3 Solid Waste Complaints

KCHD 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 KCHD has varied between 560 and 960 complaints per year. 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 Solid Waste Division's Clean Kitsap program. Complaints of illegal dumping, premises violations, and garbage burning are received by KCHD. Additionally, Kitsap County's Kitsap 1 customer service center forwards roadside dumping complaints with identification potential to KCHD for investigation or enforcement. For those complaints lacking identification potential, Surface and Stormwater Maintenance crews quickly clean up illegal dumping sites. In 2008, KCHD devoted 2.5 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. KCHD maintains a database to track information about complaints.

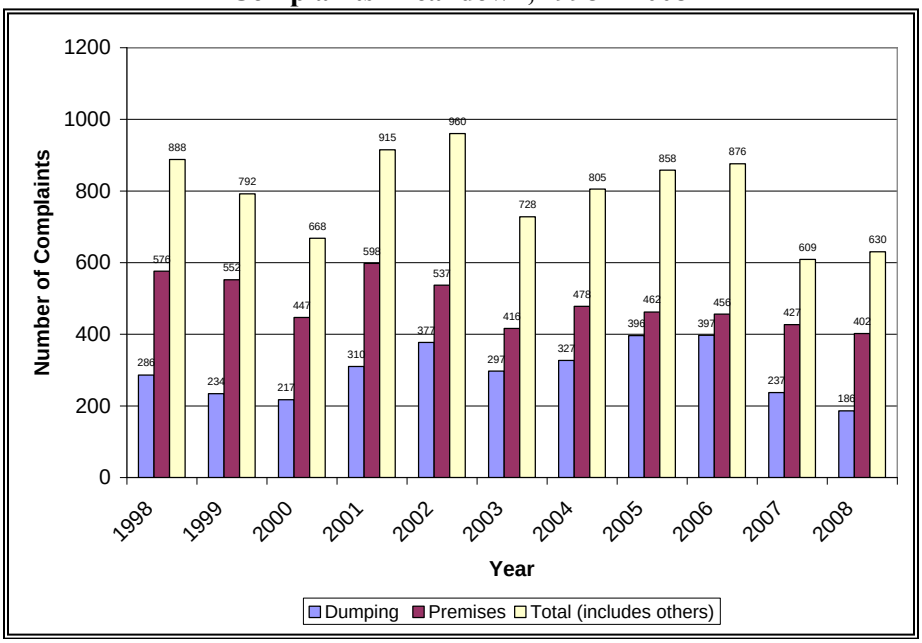
Figure 13-1
Solid and Hazardous Waste Complaints, 1998 – 2008



Source: KCHD 2008.

Figure 13-2 summarizes the number and nature of complaints investigated in 2003-2008.

Figure 13-2
Complaints Breakdown, 1998 – 2008



Source: KCHD 2008.

13.2.4 Nuisance Abatement

The Kitsap County Code Compliance Division coordinates the activities of KNAT. Active members of this group include KCHD, the Cities of Bremerton, Bainbridge Island, and Port Orchard, the Solid Waste Division, Department of Community Development, Kitsap County Sheriff's Office, Kitsap County Animal Control, Kitsap County Prosecutor' Office, the Washington Department of Labor and Industries, and Washington State Patrol. The goals of this group are:

- 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

Kitsap County Code Compliance currently has 3.5 FTE responsible for nuisance abatement and enforcement, a decrease of 1.5 FTE from 2004. Program staff and operations are funded out of the general fund. Clean Kitsap funding has been used to assist with voluntary cleanup of properties where the owner is unable or cannot afford to do so.

The KNAT approach has resulted in the clean-up of 37 chronic nuisance properties (KNAT 2009). Many of these properties had multiple problems, including accumulations of solid waste and junk vehicles, building code and electrical code violations, and law enforcement and animal control issues.

13.2.5 Clean Kitsap Program

Litter and illegal dumping of waste materials negatively impacts communities and presents real threats to Kitsap residents and the environment. Timely cleanup of illegal disposal sites tends to minimize the development of attractive nuisances at dumpsites.

The Solid Waste Division partners with KCHD, City and County Code Compliance, the Sheriff's Office, and the Department of Emergency Management 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 KCHD, 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 a Sheriff's crew, a juvenile detention crew, and a surface and stormwater 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 Amnesty Days, are offered periodically to provide residential customers with the opportunity to dispose of bulky furniture items that are not collected at curbside; and branches, brush, and stumps that are difficult to compost at home. In 2009, residents disposed of 66 tons of furniture and recycled 191 tons of yard debris through these programs (Kitsap County 2010).

Additionally, the Solid Waste Division cooperated with the Department of Emergency Management to offer two weekend flood amnesty collections at OVTS after the December 2007 flooding event. In addition, the Solid Waste Division contracted with several site restoration haulers to remove curbside flood debris from some residents. Lastly, the Solid Waste Division assisted the City of Port Orchard in providing disposal for flood debris collected by the City from downtown merchants. One hundred tons of debris was collected (Kitsap County 2008).

13.2.7 Abandoned Vehicle

The Clunker Clean Up program provides residential customers with removal of junk vehicles at no charge. In 2009, twenty-seven cars, six RVs, six boats, and three trailers were removed from 35 properties. Hulk haulers also offer free junk passenger vehicle removal when scrap metal value is high. This program also funds the removal and disposal of abandoned RVs, boats, and trailers that may also be full of garbage.

Also in 2009, eleven impounded vehicles and boats that were full of garbage were demolished, resulting in ten tons of garbage, six tons of scrap metal, twenty-two tires, one computer monitor,

and five appliances (Kitsap County 2010).

As part of complaint response activities, KCHD inspectors are certified by the Washington State Patrol to issue Junk Vehicle Affidavits that trigger collection by private haulers. During 2008, 301 junk vehicles were removed from properties as a result of complaint enforcement. If needed, these complaints can be forwarded to the Clunker Clean Up Program for assistance.

13.2.8 Derelict Vessel Disposal

Derelict vessels are occasionally abandoned off shore. Kitsap County Code Compliance removes these vessels before they sink. The Washington Department of Natural Resources reimburses up to 90% of the cost to remove the vessel. The Solid Waste Division may provide disposal assistance to cover the extra 10%. One derelict vessel was demolished in 2009 (Kitsap County 2010).

13.2.9 Charity Disposal Assistance

Charity organizations may apply to the Solid Waste Division 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. In 2009, charities/community groups disposed of 384 tons of garbage and 103 tires under this program (Kitsap County 2010).

13.2.10 Litter and Illegal Dumpsite Clean Up

Kitsap County receives Ecology Community Litter Clean-Up Program funds that partially support the clean up of roadside litter and illegal dumpsites. The Sheriff's Inmate Crew cleans up roadside litter at least twice during the year from 27 roads in north Kitsap, 29 roads in central Kitsap, and 51 roads in south Kitsap. The Inmate Crew cleaned up 34 tons of litter from 1272 road miles in 2007. The Juvenile Detention crew cleans up litter and legacy illegal dumping from State highway medians and parks properties. In 2009, they cleaned up five tons of litter from eight parks and 68 miles of median. The Kitsap County Surface and Stormwater Maintenance Division (SSWM) cleans up illegal dumpsites on the road right-of-way. They cleaned up 57.4 tons of wastes from 434 dumpsites in 2007. The SSWM response time is generally less than one week (Kitsap County 2008).

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 2009, 41 individuals and ten community groups volunteered 935 hours and collected 580 bags of litter from 567 road miles (Kitsap County, 2010).

13.2.12 Private Property Clean Up Assistance

The Solid Waste Division sponsors a Clean Kitsap Property Clean Up Assistance program in cooperation with KCHD and City and County Code Enforcement agencies.
Each agency may issue vouchers for free disposal to assist clean up 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. In 2007, ninety-six tons of garbage, 19 appliances, 106 computer

monitors and TVs, and 232 tires were removed from 92 properties.

13.2.13 Large Clean Up Projects

Private property clean up requiring the disposal of more than 25 cubic yards or where demolition equipment is needed are considered on a case-by-case basis when requested by KCHD or City or County Code Enforcement agencies, financial need is demonstrated by the property owner, and the clean up will result in a voluntary clean up of a nuisance property.

Cleaning up large amounts of legacy and current illegal dumping on public property sometimes requires a dedicated crew or contractor and special equipment. These large projects can be quite costly. For example, in 2007 and early 2008 the Solid Waste Division hired a licensed asbestos contractor to remove and dispose of 128 illegally dumped bags of asbestos materials from a County-owned parcel in Suquamish. Additionally, the Clean Kitsap program paid for disposal of 727 lbs of paint, 70 lbs. of batteries, and 9 lbs. of acid that was seized from a van by the Bremerton Police Department (Kitsap County 2008). In 2009, crews removed 82 tons of garbage, 19 appliances, and 795 tires from 14 properties (Kitsap County 2010).

13.2.14 Solid Waste Regulations

KCHD 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 KCHD, 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, the Health District may recover all costs associated with the abatement action through a property lien.

13.2.15 Secure Loads Regulation

Several tragic incidents in the past few years have led to increased concern and enforcement of requirements for loads to be secured properly while being transported. State law (46.61.655 RCW) 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 05-07-028).

There has been much publicity and education focused on the problems caused by improperly secured loads. To address these issues, Kitsap County adopted Chapter 9.18 KCC, 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.

Ecology and the Solid Waste Division worked with the Kitsap County Sheriff's Office and the Washington State Patrol to sponsor a "secured loads" emphasis patrol from April 13 – 30, 2007. Ecology paid Sheriff's and State Patrol's staff overtime associated with the emphasis patrol. Solid Waste Division staff prepared "Criteria for Determining if a Load is Secure" training materials for Sheriff's and State Patrol officers. The Solid Waste Division also ran two "secure your load" ads in local papers to support Ecology's statewide campaign. OVTS scale house attendants reported a noticeable increase in correctly secured and/or covered loads.

13.2.16 Nuisance Abatement Regulations

Nuisance abatement enforcement may result in a voluntary clean up if the property owner is cooperative. In cases where financial need is demonstrated, the Clean Kitsap Program may provide free disposal and other assistance to offset clean up costs. If the owner does not cooperate, County staff issues a Notice of Abatement specifying the required actions needed to abate the nuisance and a time line for doing the necessary work. A hearing will be scheduled before a Hearing Examiner. If the violation is abated before the hearing, the hearing will be canceled and the case closed. The Hearing Examiner may affirm that the violation exists and order a clean up, dismiss the case, or modify the abatement depending on specifics of the violation. The Hearing Examiner may issue monetary penalties as well. The Hearing Examiner's decision may be appealed by filing a land use petition in Superior Court. The County may be authorized to hire a contractor to clean up the property and place a lien on the property to recover costs. These procedures are currently under review by County Code Compliance with the goal to decrease the time required to achieve compliance and to improve the cost recovery process.

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 fund the KCHD Solid and Hazardous Waste Program through a transfer station tipping fee surcharge.

5) Ensure that KNAT continues to be an effective County program.

13.4 RECOMMENDED STRATEGIES

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

1) Pursue laws, regulations, policies, and procedures that streamline the implementation of solid waste enforcement and nuisance abatement in Kitsap County, including implementing a hearing examiner process for civil infractions.

2) KCHD will revise and update KCBH Ordinance 2004-2, *Solid Waste Regulations* to include language on maintaining and monitoring closed and abandoned landfills.

3) The Solid Waste Division will continue to work with other agencies to coordinate litter and illegal dumping reduction programs.

4) Continue to ensure prompt response to litter and illegal dumping complaints through the Clean Kitsap Program or its successor(s).

5) Continue to provide prompt response and enforcement of improper management of solid wastes on private property.

6) KCHD 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.

7) Continue the community volunteer-based Adopt-A-Road program.

8) Continue to fund crews to clean up litter and illegal dump sites from road right-of-way and other public properties.

9) Continue to produce outreach materials to increase awareness of covered load requirements, and continue to charge an uncovered load fee for any loads not compliant with regulations.

10) 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.

11) Continue funding support for the KCHD Solid and Hazardous Waste Program through solid waste tipping fees at OVTS.

12) Continue to work with other agencies to evaluate efficient strategies for capturing and recycling junk vehicles, boats, and recreational vehicles.

13) Ensure that code enforcement and permitted solid waste facilities are operated in accordance with applicable regulatory requirements.

14) Ensure that solid waste handling is conducted in accordance with applicable regulatory requirements.

15) Issue permits to covered Solid Waste Handling facilities as required by regulation.

13.5 REFERENCES/RESOURCES

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