

TRANSFER STATION EFFICIENCY REVIEW AND RATE STUDY FOR SKAGIT COUNTY

FINAL REPORT

MARCH 2005

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EXECUTIVE SUMMARY

Skagit County and the Transfer Station Oversight Sub-Committee, established to consider transfer station improvements, selected HDR Engineering Inc. to perform an independent efficiency review and rate study. The requirements for the efficiency review and rate study were established as part of an inter-local agreement for providing solid waste services to the various municipalities and unincorporated areas of the County.

This study provides a review of the Skagit County Solid Waste Section's current operations and describes how the Section compares to its peer organizations in the region, both in operational efficiency and in the rates charged to its customers. Additionally, the review identifies potential areas for efficiency improvements and potential cost saving measures.

METHODOLOGY

The study includes both an efficiency review and a rate study. For the efficiency review, HDR personnel performed site inspections of the system components, interviewed Solid Waste Section staff, surveyed customers, and reviewed 2005 County budget information and historical costs. HDR evaluated the efficiency of the Skagit County Solid Waste System relative to other similar solid waste systems based on the information collected and on our past experience with solid waste management systems. For the rate study, HDR relied on economic data provided by the County, made assumptions about future economic impacts from cost escalation and normal equipment repair and replacement, and reviewed historical expense patterns.

EFFICIENCY REVIEW CONCLUSIONS

HDR found that the County Solid Waste Section is efficient and competitive when compared with other operating systems in the region based on our evaluation of the County system, including budget and rate comparisons. Results of the customer survey indicate that customers of the County system are satisfied with the services they receive.

The results of the efficiency review support the following conclusions:

Operating Costs and Tipping Fees

- System operating costs and tipping fees (user charges) are competitive with other municipality-operated and privately-operated systems in the region when compared on a service component basis. Based on the 2005 Budget:
 - The cost to handle waste is \$9.27 per system ton.
 - The tipping fee is the fourth lowest among 11 Puget Sound region municipal governments surveyed.
 - Skagit County's costs compare favorably to both King County and Snohomish County.
 - The tipping fee is lower than Whatcom County's fee when the debt service component is excluded.

Operational Issues

- County staffing levels are reasonable and appropriate for the level of services provided.
- Current hours of operation exceed the standard of service provided by most of the communities surveyed and by privately-operated facilities.
- Additional services provided by the County (e.g., Recycling, Household Hazardous Waste Collection, Litter Control Program, Illegal Dumping Program) are valued by its customers.
- While receiving capacity is adequate for commercial waste haulers through 2015, self-haul delivery growth is creating operational inefficiencies at the Skagit County Recycling and Transfer Station (RTS).
 - Growth in self-haul deliveries is creating congestion at the scale facility.
 - Refuse from self-haul customers is handled twice (double handled).
- The RTS is currently operating at load-out capacity, which is limited by the crane and pre-load compactor processing capacity and the number of operating hours for this function. Waste volumes are projected to increase up to 50 percent over the next 10 years, and the RTS load-out capacity needs to increase to accommodate the projected volume.
- Low volumes of waste are received at the Clear Lake Site, which is a relatively short haul distance to the RTS.
- Waste Management's rates for hauling waste from the remote drop-off locations increased in late 2004. The County has an opportunity to realize substantial savings by assigning this task to Solid Waste Section staff.

Equipment Condition

- The existing pre-load compactor in the RTS needs immediate replacement. The pre-load compactor is currently operating beyond its rated capacity and this level of use has resulted in high maintenance costs. Capacity of the existing pre-load compactor limits the County's ability to accommodate projected growth.
- Loader operations inside the RTS building have resulted in damage to the concrete walls and the tipping floor shows significant wear.
- The crane in the RTS was installed in 1988 and is 18 years old. Cranes of this type have service lives typically ranging from 30 to 50 years, assuming they are maintained in accordance with the manufacturer's recommendations. However, the crane is consistently operated above the rated capacity given the current hours of operation, which is causing early fatigue.

Customer Survey

- Both customer satisfaction and labor relations surveys rated performance as meeting or exceeding expectations.
 - Customers complimented staff for doing the best they can, given the current condition of the equipment and buildings at the RTS.

- A majority of survey respondents noted that funding should be provided to improve operations.

Budget Analysis

- Mobile equipment repair and replacement is covered by a revolving reserve fund, but fixed equipment, such as the RTS overhead crane and pre-load compactor or any capital improvements to the RTS, are not covered by a similar mechanism.
- The Solid Waste Section currently maintains 3 of 33 closed landfills in the County, and budgets only a minimal amount for potential future liabilities. It is recommended that the County maintain a reserve fund for at least one additional site.

RATE STUDY CONCLUSIONS

The projected 2006 tipping fees required to meet projected solid waste system expenses are:

- \$87.00 per ton for municipal customers
- \$88.00 per ton for private firms and individuals self-hauling to the RTS and remote drop sites

Annual allocations to reserves are included as a system expense in order to support future withdrawals from reserves for major transfer station repairs and fixed equipment purchases. The Base Case rate model is structured based on the current system configuration and methods of operation and the 2005 budget basis, which included \$1.4 million for equipment replacement and an estimated reserve requirement of approximately \$3.9 million.

RECOMMENDATIONS

During the course of this efficiency review and rate study, several items were identified that could improve the system if implemented and provide a more cost effective operation. The opportunities for improvement are discussed below in order of importance, based on risk of failure and immediate impact on system efficiency.

Equipment Replacement

The recommended equipment replacements consist of the following:

- **Compactor Replacement**

The pre-load compactor at the RTS has reached the end of its useful life, is currently operating beyond its rated capacity, and should be replaced immediately.

- **Modification/Change to Compactor Loading Method**

Modifications to the loading method or equipment are needed to accommodate projected increases in waste. One of the following modification options should be implemented:

- Extend the operating hours, using the current crane.
- Replace the current crane with a faster crane.
- Reconfigure the station to eliminate the need for a crane.

Capital Improvements

The following capital improvements are recommended for consideration:

- **Traffic Flow Changes at the RTS**
Reconfigure traffic flow at the RTS to decrease traffic back-ups onto Ovenell Road.
- **Allow More Self-Haul Traffic to Dump on the Tipping Floor**
Re-configure the RTS to allow self-haul traffic to dump directly on the tipping floor.
- **Relocate a Recycling Drop-Off Location to Minimize Transfer of Loads**
Relocate one of the RTS recycling drop-off locations adjacent to the recycling market to reduce the need for transferring recyclable loads.

Operational Efficiency Improvements

While the majority of the opportunities listed in this section require policy decisions regarding the level and value of service to customers, the first recommendation described below does not and should be addressed immediately.

- **County Transport of Remote Site Waste**
Negotiate new terms with Waste Management or use County equipment and staff to transport waste from remote drop-off sites (Clear Lake and Sauk) to the RTS.
- **Change Self-Haul Hours at the RTS**
Change the hours of operation at the RTS for self-hauler traffic (e.g., 11:00 am to 6:00 pm). Consider installation of an automated scale operation for commercial accounts, using a bar code reader or radio frequency reader.
- **Increase Small-Load Self-Haul Rates**
Increase the rate charged for small-load, self-hauled vehicles to be more in-line with the actual costs that result from providing this service.
- **Decrease Hours of Operation at the Clear Lake Site**
Re-evaluate the hours of operation at the Clear Lake site.
- **Eliminate Yard Waste Drop-Off at the RTS**
Discontinue the practice of accepting yard waste at the RTS facility.
- **Establish Reserve Fund Sub-Accounts**
Establish sub-accounts under the reserve fund in order to better track the adequacy of reserve amounts in relationship to escalation factors and changes in future needs.
- **Maintain a Reserve Fund for an Additional Landfill**
In addition to budgeting for maintenance of three closed landfills, the County should maintain a reserve fund for at least one additional site.

CHAPTER 1 - INTRODUCTION

PURPOSE

Skagit County (the County) and the Transfer Station Oversight Sub-Committee (a sub-committee of the Solid Waste Advisory Committee), established to consider transfer station improvements, selected HDR Engineering Inc. to perform an independent efficiency review and rate study. An efficiency review and rate study is required under an inter-local agreement for providing solid waste services to the various municipalities and unincorporated areas of the County. This efficiency review and rate study is intended to:

- Identify potential areas for efficiency improvement
- Compare Skagit County's solid waste system with other regional systems
- Review the budget and identify potential cost savings measures
- Categorize system costs into the tonnage-related variable costs and the fixed operating costs
- Recommend a rate structure for the next 3 years
- Develop a rate model which the County can use for periodic rate adjustment

APPROACH AND REPORT ORGANIZATION

This report is divided into four chapters with an executive summary provided as a preface. Chapter 1 describes the report purpose and organization.

Chapter 2 describes the existing solid waste system and the services and programs provided by Skagit County Public Works – Solid Waste Section.

Chapter 3 provides an evaluation of the current operations, an assessment of the condition of principal equipment components, and a summary of the customer satisfaction survey regarding the programs and services provided.

Chapter 4 includes:

- A review of the historical system costs and revenue streams as the basis for projecting future expenses
- An overview of the approved 2005 budget and a cost of services breakdown
- A tipping fee and cost of services comparison with peer county operations, including both public and private service structures
- A proposed rate setting structure for solid waste services under the current solid waste management structure that is compatible with the budgeting process and adaptable to future program changes

CHAPTER 2 - EXISTING SOLID WASTE SYSTEM

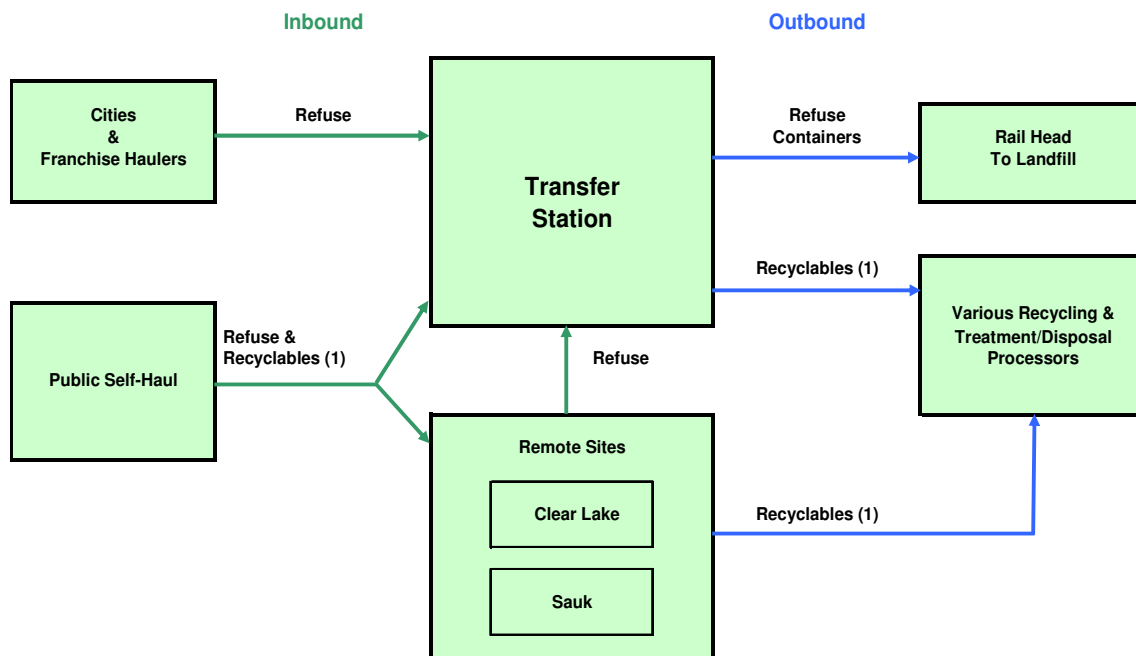
OVERVIEW

The following components of the overall operations were studied during the efficiency review:

- Recycling and Transfer Station
- Remote drop-off sites
- Recycling/composting Programs
- Moderate risk wastes
- Litter control
- Landfills, including post-closure care

Each component is discussed in detail in this chapter. Figure 1 shows the principal County-provided facilities and waste material handling services comprising the Skagit County solid waste system.

Figure 1 Skagit County Solid Waste System



(1) Includes all recyclables, yard waste, appliances, and moderate-risk waste (MRW)

SKAGIT COUNTY RECYCLING AND TRANSFER STATION

Background

Skagit County previously operated an incinerator/resource recovery facility (RRF) on Ovenell Road, at the current site of the Recycling and Transfer Station (RTS). The RRF was operated from 1988 to 1994. In 1993, ash from the RRF could no longer be disposed of at Inman Landfill and instead had to be transported to a distant landfill due to changes in disposal regulations. This and other changes in economics and regulations led to the closure of the incinerator in 1994. In 2000, the incineration equipment was removed under a salvage and removal contract.

Existing Recycling and Transfer Station

The Skagit County Recycling and Transfer Station (RTS) is the County's only transfer facility. The County also operates two drop-off locations, the Sauk Site and the Clear Lake Recycling Center and Compactor Site (the Clear Lake Site), which provide the opportunity for citizens in the rural areas of Skagit County to dispose of their waste and to recycle.

The RTS is located approximately 5 miles west of Mount Vernon at the intersection of Farm to Market and Ovenell Roads. The RTS is owned and operated by Skagit County. It is open 360 days a year for recycling and waste disposal. On Monday through Friday the site is open from 6:30 am to 6:00 pm, and on Saturday and Sunday from 8:30 am to 6:00 pm. The station consists of a vehicle scale, scale house (pictured in Figure 2), recycling drop-off area, Z-wall drop-off area for self-hauled waste and recyclables, tipping building for commercial and self-haul vehicles (pictured in Figure 3), overhead crane, and pre-load compactor.

During 2004, the facility received 97,828 tons of waste, an increase of 4,471 tons or 4.8 percent more than 2003. This figure includes waste brought from the Sauk Site (1,654 tons) and Clear Lake Site (462 tons), waste delivered by Waste Management/Rural Skagit Sanitation (the franchised collection company in Skagit County) and the four cities that conduct municipal collections, and waste brought in by businesses and residents (self-haul).

Figure 2 Scale House



Figure 3 RTS Tipping Area



A total of 125,921 customers (an increase of 9,988 customers or 8.60% over 2003) disposed of trash at the RTS in 2004. These figures do not include people who used the RTS only to recycle or customers who used the Sauk or Clear Lake sites.

An average of 272 tons of waste a day is brought to the RTS. Seasonal variations, catastrophic events, holidays and normal daily fluctuations can typically cause the average daily waste to be more than double the quantity received in a particular day. During certain times of the year, as much as 700 tons have been received in a single day. If necessary, solid waste can be accumulated for four to five days before all available storage space is used. However, it is important from a sanitation perspective that the waste be containerized and shipped out in a timely manner.

Separate from its function as a transfer station, the RTS also accepted 1,182 refrigerators, 3,130 appliances and 1,634 tons of recyclables in 2004 under the recycling program discussed later in this report.

REMOTE DROP BOX SITES

There are currently two drop box sites in operation in the County. Their current operations are discussed in detail in this section. The County operated three additional drop box sites until 1999, which were permanently closed for operating efficiency and cost reasons.

Sauk Site

The Sauk Site is located between Concrete and Rockport and is open Thursday, Friday, Saturday, and Sunday from 9:00 a.m. to 5:00 p.m. This site is operated for the collection of household waste only (i.e., no commercially-collected waste). The site consists of an attendant's trailer, a vehicle scale, six recycling drop boxes of various sizes, and an appliance receiving area. A 40-foot long, 40-ton Fairbanks vehicle scale was installed in June 2000. A Z-wall allows customers to drop waste down into the six solid waste drop boxes (pictured in Figure 4) located on the lower level of the station. The trailer for the site attendant was replaced with a new trailer in 2001.

During 2004, the site collected 1,654 tons of household waste. A total of 11,029 customers used this site, an increase of 682 (6.5%) from 2003. The Sauk Transfer Station also accepts a variety of materials for recycling, including glass, aluminum, cardboard, plastic milk jugs, magazines, and mixed waste paper. Used motor oil and automotive antifreeze were collected from this site by the same contractor that handles these materials from the Skagit County Household Hazardous Waste Collection Center, and the quantity figures for these fluids are included in the totals for the Collection Center.

In addition to its function as a waste drop-off site, the Sauk site also accepted 172 refrigerators, 445 appliances and 342 tons of recyclables in 2004 under the recycling program discussed later in this report.

Figure 4 Sauk Waste Drop Box**Figure 5 Clear Lake Drop Box**

Clear Lake Recycling Center and Compactor Site

The Clear Lake compactor site is located near the intersection of State Highway 9 and South Skagit Highway. This site is open Monday, Wednesday, Friday, Saturday and Sunday, from 8:00 a.m. to 6:00 p.m. for the collection of household wastes. The site consists of an attendant's building (a new trailer was installed for this in 2001), two stationary compactors (new, larger ones were installed in 2001, pictured in Figure 5), six recycling drop boxes of various sizes, and an appliance receiving area.

During 2004, the facility collected 462 tons of household waste. A total of 7,222 customers used the compactors, an increase of 538 (8%) from 2003. The County owns and operates this transfer station. Waste Management hauls the full waste containers to the RTS.

The Clear Lake site also accepts a variety of materials for recycling, including glass, aluminum, cardboard, plastic milk jugs, and magazines. In 2004, 465 tons of recyclable materials were collected at this site. In addition, the site received 155 refrigerant-containing and 416 other appliances.

Closed Drop Box Facilities

The collection sites at Alger, Birdsvie and Conway were permanently closed in October 1999 because:

- The cost of operating each site had increased over the years to the point that it was no longer economically feasible to continue operations. It would have been necessary to triple the per-use fee in order to break even.
- The existing equipment had exceeded its useful life. Upgrading the equipment would have added significantly to the operating cost of each site.
- A less costly alternative is available for customers that used these sites. The franchised waste hauler can provide collection services to customers in these areas at a lower price.

RECYCLING/COMPOSTING PROGRAMS

The County relies on the private sector for yard waste and the processing of the recyclables collected under its programs. However, the County services do include education programs, and recycling, appliance, and yard waste drop-off facilities

Education Programs

Several public education activities and programs are currently conducted in Skagit County. Many of these activities are conducted or facilitated by the County's Recycling and Waste Reduction Educator, in cooperation with the municipalities and private companies that also conduct public education. Coordinated Prevention Grant (CPG) staff annually produces a brochure on Construction & Demolition (C&D) recycling opportunities.

The Recycling and Waste Reduction Educator (Educator) gives presentations at schools and to civic groups. Information (written and verbal) is also distributed at fairs and other events about recycling, alternatives to toxic chemicals, and reducing consumption. The Educator conducts composting workshops and administers the Master Composter/Recycler and the Adopt-a-Road programs.

The Master Composter/Recycler program provides an excellent opportunity for citizens to assist with waste diversion projects and help spread the word. Training classes for new Master Composter/Recyclers has helped staffing of the Master Composter/Recyclers' booth at fairs and festivals, increased the available workshops, and maintained the four compost demonstration sites and worm recycling boxes. Furthermore, the Master Composter/Recyclers network within their communities and provide an example for others.

The informational kiosks, with pamphlet holders on recycling and composting at the RTS and rural drop boxes, were built in 1998 by the Public Works Special Operations crew. These kiosks were partially funded (60%) with Department of Ecology grant funds. They are decorated with colorful posters and informational bulletins on waste reduction topics. These kiosks continue to be a very useful way to offer waste reduction and other information to the public.

Public education and information about the Household Hazardous Waste Collection Center and related programs are also done through the County's recycling education program. Others in the County, including the garbage hauler, recycling companies, other county solid waste staff and public health officials, also provide information on proper handling and disposal of moderate risk wastes. Pamphlets and flyers for household hazardous waste are also distributed at city offices, and newspaper ads are occasionally run as well.

Yard Waste Drop-Off

Drop-off sites serve as a collection point and then transfer yard debris and other materials to another facility for processing (composting). Although the County encourages citizens to deliver its yard waste directly to the nearby Skagit Soils composting site, the RTS accepts yard debris, which is then transported to Skagit Soils for composting. Private drop-off sites are also currently available in Mount Vernon and several other locations. The Cities of Mount Vernon, Burlington, and Sedro-Woolley also operate public compost drop-off sites (for residents only). These sites accept various materials, depending on the site, such as yard debris, branches, stumps, untreated wood, and sod, which minimizes the need for County involvement.

Recyclable Drop-Off Programs

As mentioned previously, the three public disposal facilities (RTS, Sauk [pictured in Figure 6], and Clear Lake [pictured in Figure 7]) collect a variety of recyclable materials, including newspaper, cardboard, mixed waste paper, magazines, aluminum and tin cans, scrap metal, plastic bottles (pop and milk), glass containers (the three main colors), motor oil, antifreeze, and car batteries. Recyclables are hauled by the County to Skagit River Steel & Recycling in Burlington for sorting, processing, and marketing. Appliances are accepted for recycling for a fee of \$10, or \$25 if the appliance contains or ever contained freon (charges current as of 2005). The RTS also recovers metals from the tipping floor, as time allows and as needed for oversized materials. The drop-off programs from all three sites resulted in the diversion of 2,440 tons for recycling in 2004. Used motor oil and automotive antifreeze were collected from the remote sites by the same contractor that handles these materials from the Skagit County Household Hazardous Waste Collection Center, and the quantity figures for these fluids are included in the totals for the Collection Center.

Figure 6 Clear Lake Recycling



Figure 7 Sauk Recycling



Recyclable Processing

Skagit River Steel & Recycling in Burlington (the Recycler) provides sorting, processing, and marketing of the recyclables delivered by the County under a processing contract. Skagit River Steel and Recycling accepts the traditional recyclable materials (paper, glass, and plastic bottles). Depending on current market prices for the various recyclable materials delivered by the County, Skagit River Steel and Recycling will either share revenues with the County or charge a small handling fee for these materials. Under a separate contract, Rick's Refrigeration hauls and processes the appliances received by the County, removing refrigerants in accordance with regulations. Rick's Refrigeration picked up 1,509 refrigerant-containing and 3,991 other appliances for recycling from the RTS in 2004. Larry's Auto and Truck Parts accepts and recycles tires from the County under a third contract.

MODERATE RISK WASTES

Industries, farms, businesses, and homes throughout Skagit County produce small amounts of hazardous wastes. For most, the amount of hazardous waste produced falls below regulated quantities and so is classified as a "moderate risk waste" (MRW).

Moderate risk waste includes household hazardous wastes (wastes produced by residential activities that would be hazardous waste, except that by definition these are exempt from regulation due to the quantity) and wastes from small-quantity generators (businesses that produce less than 220 pounds of dangerous waste or 2.2 pounds of extremely dangerous waste per month, and that do not accumulate these wastes in excess of 2,200 or 2.2 pounds, respectively). The latter is also called a “conditionally-exempt small quantity generator” (CESQG) on the premise that improper handling or disposal of such wastes would cause the CESQG to fall under the full body of hazardous waste regulations. Ongoing funding for the MRW Facility is provided through fees charged to some users, a portion of the tipping fee, and Ecology Coordinated Prevention Grant (CPG) funds.

Moderate risk wastes generated in Skagit County can be handled through the Household Hazardous Waste Collection Center (Collection Center) at the Skagit County Recycling and Transfer Station (see Figure 8). Only household hazardous wastes are accepted for no charge at the Collection Center. Wastes from small quantity generators are accepted for a charge that varies depending on the type and quantity of the waste.

Figure 8 Moderate Risk Waste Facility



Prior to January 2005, the Collection Center was open five days each month and is now open five days a week. The Center is staffed with Skagit County employees. A variety of materials are handled by this facility, including automotive products, fluorescent tubes, paint and paint-related materials, lawn and garden chemicals, cleaners, mercury switches, and many miscellaneous materials. Propane tanks are not accepted at this time, and people with propane tanks are referred to one of the local dealers. Waste oil, antifreeze and car batteries are also collected at the Sauk and Clear Lake sites.

The Collection Center is available for use by businesses that qualify as Small Quantity Generators (SQGs) under State law. Unlike households, business customers must pay for the disposal of their wastes. In addition to disposal, businesses are also provided with technical assistance in complying with the Washington State Dangerous Waste Regulations through telephone consultation or on-site visits.

The Chemical Exchange Building, located next to the Collection Center, measures 10 feet by 12 feet and is used to temporarily store reusable chemicals that have been brought to the Collection Center. Reusable materials, such as paints, garden chemicals, and auto products, are set aside and are made available free of charge to individuals that come to the Collection Center.

LITTER CONTROL

Since 2000, the County has made a significant effort to reduce illegal dumping, including media ads on radio and roadside pickup. Supplemental Coordinated Prevention Grant (CPG) funds have been used for the media campaign. The County utilizes a crew of Department of Corrections offenders supervised by a County Solid Waste staff member, funded through the Community Litter Cleanup Program (CLCP). This crew performs the majority of the roadside litter pickup. Their work is augmented by a contract with Chinook Enterprises and by the Adopt-A-Road volunteer program which is organized by other County staff. These groups attempt to recycle any of the materials they pick up, as time and the condition of the materials (bottles, cans and metals) allow.

WASTE DISPOSAL

Skagit County no longer maintains an open landfill, and has been exporting waste since 1993. Prior to waste export, the County operated three landfills that closed between 1989 and 1994. There are approximately 30 additional closed disposal sites in Skagit County, but only three (the Inman, Sauk, and Gibraltar Landfills) that currently have environmental monitoring programs. Specifics about the post-closure care for each of the landfills and the waste disposal contract are discussed below.

Landfill Post-Closure Care

Even though the landfills in Skagit County are no longer receiving solid waste, their effects on the environment must still be monitored. There are approximately 30 closed waste disposal sites in Skagit County and only three of these (the Inman, Sauk, and Gibraltar Landfills) are required by state regulations to have environmental monitoring programs for 20 or more years after the landfills were closed (the “post-closure” period). The post-closure period at the Sauk and Gibraltar Landfills is through 2008, and the Inman Landfill post-closure period is through 2024. These periods could be extended if groundwater and gas monitoring results show ongoing contamination or methane generation problems. Although only these three landfills have regulatory requirements for long-term environmental monitoring programs, any of the old waste disposal sites could pose significant environmental concern and potential liability to the County, city, and/or private/public entities that were previously involved with the landfills.

Inman Landfill

Skagit County operated the Inman Landfill from 1973 until 1994 when it was closed under Chapter 173-304 WAC. The landfill had a phase one section that was closed in 1985, and a phase two section that was lined and operated from 1985 to 1994. From 1988 to 1994, a portion of the phase two area received ash and bypass waste from the Resource

Recovery Facility plus construction and demolition (C&D) waste from a variety of sources (C&D waste was not processed at the incinerator). When Inman Landfill was closed in 1994, both the phase one and phase two sections were completely recapped. The Inman Landfill is the largest of the three landfills that are under the regulatory requirements dictated in Chapter 173-304 WAC. These requirements include general site maintenance, operation of a methane gas extraction system, and a groundwater monitoring program. Upon closure, the landfill was capped with a geomembrane layer and soil, and the post-closure monitoring period began. The monitoring period is expected to run for 30 years, or longer if the landfill has not stabilized by then (stability will be indicated by the lack of gas production, leachate contamination and settlement). A landfill gas system has also been installed and the gas is drawn to a flare station to be burned off.

Maintenance at the Inman Landfill includes continued efforts to maintain and improve the general appearance of the landfill, integrity of the liner, and groundwater monitoring and gas extraction systems. All of these efforts are carried out under the direction of Solid Waste Section staff. The landfill's methane gas extraction system is capturing a few hundred cubic feet per minute of gas in excess of 50% methane. The gas is burned using an on-site flare system. Leachate production has fallen from about 1.8 million gallons in 1994 to about 100,000 gallons in 2004. Future leachate volumes are expected to continue to decrease but at lower rates. Leachate is disposed at the City of Mount Vernon Wastewater Treatment Plant. A contractor periodically pumps the leachate from the holding pond into a tanker truck and hauls it to the plant. Hauling generally occurs one to three days per month. The treatment plant has not experienced any problems from the leachate, and the quality of the leachate is tested and reported monthly, as required by the Washington State Waste Discharge Permit for Inman Landfill. Groundwater sampling and testing for the twelve on-site monitoring wells is conducted quarterly by the Skagit County Hydrogeologist as required by Chapter 173-304 WAC and by the Skagit County Health Department. Quarterly and annual reports of the groundwater test results are submitted to both the County Health Department and the Washington State Department of Ecology.

Due to potentially contaminated groundwater, public water has been provided to several homes in the vicinity of the Inman Landfill. Chemical analysis results from the on-site monitoring wells continue to show that both aquifers underlying the site are impacted by the landfill. There is evidence, however, that groundwater quality is slowly improving. Groundwater quality is expected to continue to show slow improvement over time, resulting from specific mitigation measures and the landfill closure design.

The methane gas collection, leachate collection, and groundwater monitoring systems generally operate well, but occasional repairs and maintenance will be necessary throughout the monitoring period.

Sauk Landfill

The Sauk Landfill was closed July 1989 under Chapter 173-304 WAC. On-going maintenance of the groundwater monitoring system, landfill cover, and general site appearance is conducted by the Skagit County Public Works Solid Waste Section. Routine groundwater monitoring is conducted quarterly at this landfill, as required by Chapter 173-304 WAC. Quarterly and annual monitoring reports were submitted to the Skagit County Health Department and the Washington State Department of Ecology. Groundwater sampling results have been consistent with previous results. The monitored aquifer does show minimal impact from the landfill, but not at levels that have raised concern with the regulatory agencies.

Gibraltar Landfill

The Gibraltar Landfill was closed in January 1989 under Chapter 173-304 WAC. On-going maintenance of the groundwater monitoring system, landfill cover, and general site appearance is conducted by the Skagit County Public Works Department. Routine groundwater monitoring at Gibraltar is conducted as required by Chapter 173-304 WAC. Required quarterly and annual monitoring reports are submitted to the Skagit County Health Department and the Washington State Department of Ecology. Recent groundwater samples have shown consistent results. The perched aquifer does show impact from the landfill and the lower regional aquifer has indications of minimal impact.

Abandoned Landfills

There are 33 old landfills (“abandoned landfills”) that have been identified in Skagit County. About half of these are the responsibility of the County itself, four or five are on private land, and the remainder are the responsibility of various cities and other public entities. While the abandoned landfills are not required to have routine groundwater monitoring like the Inman, Sauk and Gibraltar Landfills, they still require periodic monitoring and maintenance. Liability and potential public and environmental health issues associated with the abandoned landfills has become a greater concern as development further encroaches on these sites.

In 1990, the Skagit County Health Department compiled a report on the general locations and historical information for the abandoned landfills in Skagit County. This information has been given to planning jurisdictions and interested parties. Due to the increased risk of liability and potential public and environmental health issues related to these abandoned landfills, an effort is underway to systematically identify and assess these issues. This is a cooperative effort between the County Public Works Department, County Health Department and the State Department of Ecology through the Toxics Cleanup Program.

DISPOSAL CONTRACT

Many counties have adopted the waste export option because of its lower cost and greater reliability. Private companies have responded to this interest by developing large landfills capable of handling wastes from several areas. For many counties, these landfills provide a less expensive and more convenient means of disposal than an in-county landfill.

Skagit County initially began exporting solid waste in 1993, when it was determined that the Inman Landfill could not meet new regulatory standards (Subtitle D requirements). Prior to that, the Inman Landfill was being used for disposal of incinerator ash, excess and non-processible wastes, construction and demolition waste (also largely non-processible and non-combustible), and other wastes that could not be handled at the Resource Recovery Facility (RRF). The County requested proposals in March 1993 from private companies for disposal of these wastes at an out-of-county location. Regional Disposal Company (RDC) was chosen as the successful bidder and a 10-year contract was executed with RDC on October 4, 1993. This contract addressed the transportation of wastes from the RRF and disposal at RDC’s landfill in Klickitat County, Washington. In 1994 the RRF was closed in response to another regulatory change that required special handling for the ash and other problems in the economics and operation of the incinerator. Once the incinerator was closed, Skagit County’s entire waste stream was disposed through the waste export system. The RDC contract has also been amended to provide for a compactor for the waste, thus making the operation more efficient and

providing for lower disposal costs. The disposal contract term was extended through September 30, 2013, with an option for the County to extend it for up to two five-year terms.

When the Resource Recovery Facility was closed, it was converted into a transfer station to serve the waste export system. Currently, the waste export system begins with compaction of the wastes delivered to the RTS into 45-foot containers. The containers are on trailers that are hauled by Skagit County. The trailers were previously taken to Everett, Washington, but in mid-2000 a new railhead was built by RDC less than a mile away from the RTS. The containers are placed on a train and shipped to RDC's Roosevelt Landfill in Klickitat County, Washington. An average of twelve to fifteen containers per day, 5 days a week, weighing 28 to 29 tons each, were shipped from the Skagit County RTS in 2004.

The current cost of disposal through the waste export contract with RDC varies depending on the weight of the load, which provides an incentive to compact the garbage more effectively. These rates are adjusted annually based on 80% of the Consumer Price Index (CPI) in September of the prior year. The rates for 2005 are \$47.08 for loads less than 28 tons, \$46.43 for loads between 28 and 30 tons (this was the typical weight for Skagit County in 2004), \$45.68 for loads from 30 up to 32 tons, and \$44.99 for loads that are 32 tons and above.

CHAPTER 3 - SYSTEM EVALUATION

The evaluation of any enterprise solid waste system must be conducted based on three basic criteria:

- Are there any operational functions or services that could be eliminated or modified to improve the daily operational efficiency of the system?
- Is there a rational plan for emergency and predictable maintenance, repair and replacement of facilities and equipment?
- Are the services provided responsive to the needs of the customer while being cost competitive?

HDR evaluated the efficiency of the Skagit County Solid Waste System relative to other similar solid waste systems based on site inspections of the various system components, interviews of County staff and customers, a review of the provided 2005 County budget information and the historical costs, and our experience with other solid waste management systems,. As a result of this evaluation, a number of issues have been identified for the Committee's consideration.

HOURS OF OPERATION

The RTS is currently open to receive waste 11.5-hours, 5-days per week and 10-hours each weekend day (77.5 hours per week). The County extended its hours of operation at the request of the cities from a 10-hour per day level in order to allow early dumping of full containers before normal business hours. The Sauk Transfer Facility is open 8 hours per day (32 hours per week), Thursday through Sunday from 9:00 to 5:00, except for holidays. The Clear Lake Facility is open 10 hours per day (50 hours per week), from 8:00 to 6:00 Monday, Wednesday and Friday through Sunday. While the hours of operations available to Skagit County customers are extremely convenient, this level of service is above the normal standard of service provided in most communities and by privately-operated facilities. The hours of operation for a transfer station/drop-off facility are more typically between 55 and 60 hours per week.

One option that the County could consider, to reduce the additional costs related to providing these extended RTS operating hours, is to install an automated scale reader for its account customers. This automated scale reader could be utilized during the extended operating hours, while reducing the additional labor costs for staffing the scale facility during this time. Although a review of the hourly scale records shows that some of the cash customers have also been taking advantage of these early morning hours, the number of transactions is fairly low and does not appear to justify the need to provide a staffed scale-house.

STAFFING LEVELS

The County solid waste system currently has a staff of 23 permanent full-time employees and 6 part-time or seasonal employees for all of the services that it provides. The functional responsibilities are shown in Table 1.

The County provides one permanent scale operator (10 hours per day) and an overlapping part-time scale operator (6 hours per day) to cover the 12-hour per day operation of the RTS. The County provides cross-training for all of its RTS transfer technicians, uses part-time and on-call labor to minimize labor costs during vacation and

sick leave, and provides mechanic support with one of its truck drivers. Staggered overlapping shifts are utilized to provide increased staffing during the peak activity at the RTS. Employees also perform miscellaneous housekeeping and site maintenance duties.

Table 1- Current System Staffing Levels

	Job Title	No.	Functional Responsibility
Admin	System Manager	1	Administration and system oversight
	Administrative Asst.	1	Administration
RTS	RST Site Manager	1	On-site operations management
	Transfer Technicians	4	Transfer station operations
	RTS Drop-Off Techs	3	Drop-off operations
	Scale Operators	2	Transfer station operations
	PT Scale Operator	2	Transfer station operations
	Mechanic	1	Repair on RTS site equipment
	Drivers	2	Haul waste to rail and recyclables to market
Closed	Hydrogeologist	1	Post Closure Care
Landfills	Hydro Technician (not filled)	1	Post Closure Care
Grant	Education	1	Recycling, Composting, and Adopt-A-Road
Supported	Litter Control	1	Litter program
Programs	Haz-Waste Technician	2	Operate Moderate Risk facility
Drop-off Sites	Clear Lake Operator	1	Drop-off operations
	PT Sauk Operator	1	Drop-off operations
	On-Call	3	Sick leave/vacation substitutes
Misc.	Summer Intern	1	Seasonal Help
Total Staff		29	

The RTS facility configuration currently requires four people during the peak hours of operations.

- A loader operator to manage the floor waste and to provide space for incoming vehicles to dump their loads;
- A mobile compactor operator to crush the waste for improved shipping container density and to minimize overhead crane travel distance;
- An overhead crane operator to feed the pre-load compactor that containerizes the waste; and
- A compactor operator to operate the compactor and to jockey the containers into position for loading.

Due to the high volume of self-haul customers and the safety concerns in mixing the citizen traffic with commercial hauling vehicles, it is important to keep these two traffic streams separated on-site. Therefore, current self-haul drop-off operations on-site for solid waste and recyclables are managed by a staff of three transfer technicians. These technicians are responsible for supervising the citizen drop-offs, moving full containers of waste to the transfer station and full recycling containers to the contracted recycler (Recycler) on weekends, and managing the RTS tipping floor on weekends. Since the Recycler is not open on Sunday, the full recycling containers are moved to a storage area on site and two transfer technicians are needed to transport recyclables to the Recycler and manage the site on Mondays. Since Friday, Saturday, and Sunday are the busiest

days for self-haul customers, three transfer technicians are needed to manage the storage of waste on the RTS tipping floor and manage the customers, solid waste, and recyclables containers. The costs for this operation could be reduced by reconfiguration of the RTS operations, which would allow direct dumping of self-haul waste. However, this reconfiguration would require significant capital improvements or severely limiting self-haul deliveries (i.e., evening and weekend) hours to avoid conflicts with commercial traffic.

The Moderate Risk Waste Facility located at the RTS is staffed with two hazardous waste technicians with overlapping hours to handle the peak delivery periods. The remote transfer facilities are each staffed by one operator and part-time and or on-call operators. Currently the waste delivered to the RTS from the remote drop-off sites is hauled by Waste Management under its hauling franchise.

A staffing schedule is provided in Appendix A to demonstrate how the County provides the RTS extended hours of service. Based on our review, the County staffing levels for the currently available facilities and provided services are reasonable and appropriate for the level of services currently required. Options that might be used to improve the operations would require facility modifications which are discussed in Chapter 4.

TRANSFER STATION EFFICIENCY

The throughput capacity of any transfer station is limited by three physical factors: i) the receiving capacity, ii) the waste storage capacity and iii) the station load-out capacity. In addition, the throughput capacity of any transfer station is limited by its permitted throughput capacity. All four of these factors must be considered when planning for the County's future needs.

Receiving Capacity

The number of scales (i.e., the length of queue) and number of unloading positions controls waste receiving capacity. If the vehicles are only weighed in and vehicle tare weights are used to determine net payload, this maximum traffic volume is about 60 vehicles per hour (vph). This is the way that the County normally operates its scale facilities. However, the tare weights have to be checked on all self-haul loads and periodically to verify that account customer's tare weights have not changed due to truck modifications. The County uses a computer schedule to remind scale operators to check these tare weights on a periodic basis. The routine use of recorded vehicle tare weights, rather than double vehicle weighing, can reduce the traffic volume across the scales, and thus increase the receiving capacity.

The receiving capacity is further limited by the queuing space in front of the scale. For the purpose of capacity analysis, the distance from the end of the scale approach slab to the facility access road entrance determines the maximum queuing capacity. Using an assumed truck spacing of 50 feet, the maximum vehicle queue is determined and combined with the average scale transaction time to arrive at a maximum traffic volume.

Collection vehicles do not arrive at the transfer station at a uniform rate during the day. The collection of waste is normally restricted to a uniform starting time in the morning, to avoid noise complaints in residential neighborhoods. This means the trucks tend to have a 2-hour peak each morning and afternoon. During these peak periods, the transfer station can expect to receive approximately 75 percent of its daily deliveries. Therefore, a facility that handles collection vehicles only will typically need space for about one collection vehicle for every 100 tons of daily capacity. For RTS incoming loads, the

queuing distance to Ovenell Road is only 270 feet, allowing space for approximately five trucks or approximately ten cars/pickups. If all of the waste were delivered in collection vehicles, this distance would normally be sufficient for a daily capacity of approximately 500 tons per day. However, due to the high volume of self-haul deliveries, the queue frequently extends out into the street during self-haul peak hours on peak days. In addition, the traffic configuration results in crossing of traffic at both ends of the scales, increasing the congestion. This not only affects station operations, but also causes delays for the collection vehicles returning to their collection routes. The relocation of the scale operations would improve the efficiency for the traffic flow, but would likely have minimal impact on scale operating hours. Automation of the scale operations for commercial accounts that have tare weights could possibly speed up the operation for these vehicles. The use of automation with scaled back self-haul delivery hours could be used to reduce staffing requirements at the scale house.

The RTS uses an exterior truck maneuvering area at the transfer station itself. Trucks preparing to dump their loads approach the building; make a 180-degree turn, and then back into the transfer station. The trucks then dump into the loader pit; or on the tipping floor if the pit is full. This configuration allows up to three collection vehicles to dump simultaneously. Typical unloading times for collection vehicles and self-haul vehicles are approximately six minutes and fifteen minutes, respectively. However, since the vehicles do not dump directly into the pit, a loader must clear the tipping floor by pushing the load into the pit after each load is dumped on the floor. This operation typically takes approximately 90 seconds. Therefore, the peak unloading capacity of the RTS is approximately 24 collection vehicles an hour and 10 self-haul vehicles an hour, using the three available unloading bays. If the self-haul customers continue to increase at a rate similar to the last couple of years, the traffic flow patterns at the facility will need to be revised to avoid exceeding the current receiving capacity. Alternatively, customers could be encouraged to utilize other drop-off locations or use franchise collection services by increases to rates.

Storage Capacity

Waste storage capacity is critical for maximizing the throughput of a transfer station, since the waste is not delivered at a uniform daily rate. In addition, daily delivery rates fluctuate considerably during a week due to differing current collection practices. The daily peak is often as much as 125% of the average day during a normal week, and can exceed that around holiday periods.

As a minimum, the station should have capacity to store half of its daily capacity. Storage equal to the daily rated capacity is generally preferred to provide a contingency for equipment breakdowns. The current storage capacity of the RTS using the original incinerator pit, which is reported to be 16 feet deep, is approximately 530 tons without using the tipping floor for storage. Another 150 tons could potentially be stored on the existing tipping floor. This capacity would be sufficient to handle the projected tonnages for 2013, when the RDC contract expires.

The loader operations inside the building have resulted in damage to the concrete walls, and the tipping floor shows significant wear. Immediate building repairs are not currently required, but funds to repair these damages need to be provided out of the accumulated reserves.

Load-out Capacity

The load-out capacity of a facility is limited by the overhead crane feeding rate, preload compactor unit production, and the number of containers/transfer vehicles available for hauling waste. From on-site observations, it appears that the primary limiting factor at the RTS is the crane loading time necessary for each of the compactor units. The TransPak150 preload compactor unit is rated at three “logs” per hour, with an average log weight of 12.5 tons. The waste at the RTS is macerated (crushed) with a mobile compactor/loader to minimize “bridging” of the waste and to increase the waste density prior to loading the waste into the preload compactor. This process has enabled the RTS to achieve higher density ratios (approximately 14 tons per log) at approximately 22 minutes per log. Based on this load-out rate, the capacity of the transfer station is currently rated at approximately 380 tons in a 10-hour shift. In order to handle the projected tonnage in 2013 with the existing equipment, operating hours would have to increase by approximately 50%. Alternatively the throughput efficiency could be increased by using a larger compactor, a faster automated crane or a more efficient method of loading.

HAULING OPERATION AND REMOTE DROP-OFF FACILITIES

Waste Management currently hauls the waste containers from the remote drop-off sites at Sauk and Clear Lake to the transfer station for containerization and subsequent shipment. The County hauls the recyclables from the RTS and the remote drop-off facilities to the recyclables processor.

Waste Management’s regulated tariff rates for hauling waste from the remote drop-off locations increased in October 2004 as follows:

- Clear Lake site cost increased from \$93.50 to \$133.75 per compactor. One compactor is hauled per trip.
- Sauk site cost increased from \$210.00 per container to \$238 for mileage charge and \$111.20 per container. Typically two containers are hauled per trip. Therefore, the total cost increased from \$420.00 to \$460.40 per two container haul.

Based on a comparative analysis of County versus franchise hauler costs for this hauling operation, the County could save a substantial amount per year by performing this service with division staff. The County should attempt to negotiate new terms with Waste Management that would be comparable to the County’s cost for this operation or begin hauling the bins with County equipment and staff.

The Sauk Site is located approximately 45 miles from the RTS and handles approximately 1,600 tons per year. The Clear Lake Site is approximately 14 miles from the RTS and only handles 500 tons per year. Given the remote distance to the Sauk Transfer Site, the location of this site is probably justified by the benefits that it provides to the County customers in the eastern part of the County and the reduction in roadside litter from illegal dumping. The low volumes of waste received at the Clear Lake Site and the relatively short haul distance to the RTS suggests that the County should reassess the hours of operation and possibly consider closing this operation. However, if the Clear Lake Site is retained as a recycling drop-off location, providing a waste disposal option at this site will encourage continued recycling participation, reduce roadside litter, and minimize contamination of recyclable loads.

REGULATORY REQUIREMENTS

At the federal and state levels, the primary regulatory authorities for solid waste management are the Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology), respectively. Skagit County is in the jurisdiction of the northwest regional office of Ecology, located in Bellevue, Washington. At the local level, the responsibility for solid waste administration and enforcement is shared among several departments of Skagit County and the cities.

Federal Level

At the federal level, the Resource Conservation and Recovery Act of 1976 (RCRA), as amended by the Solid Waste Disposal Act Amendments of 1980 (42 U.S.C. 6901-6987), is the primary body of legislation dealing with solid waste. Subtitle D of RCRA deals with non-hazardous solid waste disposal and requires the development of a state comprehensive solid waste management program that outlines the authorities of local, state, and regional agencies. Subtitle D requires that the state program provides that all solid waste is disposed in an environmentally-sound manner.

State Level

The State Solid Waste Management Act, Chapter 70.95 the Revised Code of Washington (RCW), provides for a comprehensive, statewide solid waste management program. Chapter 70.95 RCW assigns primary responsibility for solid waste handling to local governments, giving each county, in cooperation with its cities, the task of developing and maintaining a solid waste management plan that places an emphasis on waste reduction and recycling programs. Enforcement and regulatory responsibilities are assigned to cities, counties, or jurisdictional health departments, depending on the specific activity and local preferences.

The Minimum Functional Standards for Solid Waste Handling (Chapter 173-304 WAC) were promulgated by Ecology under the authority granted by Chapter 70.95 RCW. This chapter has now been superseded by Chapter 173-351 WAC, Criteria for Municipal Solid Waste Landfills, which contains the current standards for landfills, and Chapter 173-350, Solid Waste Handling Standards, which addresses recycling and composting facilities, as well as inert and special purpose landfills.

Chapter 36.58 RCW, Solid Waste Disposal, delineates the counties' rights and responsibilities regarding solid waste management, including the authority to establish solid waste disposal districts (Sections 36.58.100 through 36.58.150), as well as providing special authorization for contracting procedures for solid waste handling facilities (Section 36.58.090). The authority to establish solid waste collection districts is provided in Chapter 36.58A.

Ecology began the process for updating the State Solid Waste Management Plan in 2000. When completed, this plan is expected to provide new guidance to local governments for solid waste management procedures and policies.

Other relevant State legislation includes Washington's Model Litter Control and Recycling Act. The Model Litter Control and Recycling Act (Ch. 70.93 RCW) and associated State regulations (Ch. 173-310 WAC) generally prohibit the deposit of garbage on any property not properly designated as a disposal site. There is also a "litter fund" that has been created through a tax levied on wholesale and retail businesses, and the monies from this fund are being used for education, increased litter clean-up efforts by the State, and grants to counties for litter and illegal dump clean-up activities. The State conducts litter

cleanups on interstate and state highways, while county efforts are focused on local roads. The recently-adopted revisions to RCW 70.93.060 provide for stiffer penalties for littering and illegal dumping in rural areas.

Local Level

In Skagit County, the local agencies involved in solid waste enforcement include the Skagit County Public Works Department, the Skagit County Health Department, and various departments of the cities. Each entity has a particular area of operations, providing specific services to the residents within that area and enforcing specific rules and regulations. In addition, the Skagit County Solid Waste Advisory Committee (SWAC) plays an important advisory role for the solid waste management system in Skagit County. Local rules that affect solid waste management include inter-local agreements, ordinances, land use plans, and zoning codes.

Skagit County Health Department: The Health Department is the local enforcement agency for County and State regulations regarding solid waste activities. County regulations pertaining to solid waste activities are primarily contained in Ch. 12.16 and 12.18 of the County Code. The Health Department is the responsible local authority (per RCW 70.95.160) for issuing permits for solid waste facilities and enforcing against illegal solid waste handling or disposal activities. Fines for illegal dumping were increased in 1999, and typically eight to ten offenders are caught each year. The Health Department also inspects and monitors all permitted solid waste facilities and closed landfills.

The permit process for solid waste facilities requires an application and approval for new sites, and an annual review and renewal for existing permits. The application form requires information about the types of waste to be processed or disposed, environmental conditions of the area, and an operations plan that must be approved by the Health Department.

Compliance and Safety

The RTS is currently operating under a Solid Waste Permit that was issued on January 1, 2005 and expires on December 31, 2005. Under the terms of the permit, the Facility is authorized to accept permitted solid waste up to a maximum amount of 1,000 tons per day. As part of the solid waste permit, the Facility is required to keep the following records and report them to the Skagit County Public Health Department. The RTS has not received any notices of violation of any regulations, since it began operations as a transfer station.

The RTS has a relatively good safety record and has only had three minor worker compensation claims in the last five years that resulted in a total of 18 days away from work. Comprehensive liability claims were under \$100,000 during that same period, approximately half of which were related to vehicular repairs.

MAJOR EQUIPMENT CONDITION

Major equipment used by the Solid Waste Section can be categorized as follows: fixed transfer station equipment, mobile equipment, drop box location compactors, and yard containers. The condition of each equipment category is discussed below.

Fixed Transfer Station Equipment

The fixed transfer station equipment consists of the crane system and the compactor at RTS. The crane system was installed in 1988 as part of the incinerator. Two cranes were originally installed, and the operating crane still in use is maintained partly by using parts

cannibalized from the other crane. The crane is a P&H – 5-ton crane rated for MSW operation at about 35 tons per hour. Cranes of this type have service lives typically ranging from thirty to fifty years assuming maintenance in accordance with manufacturer’s recommendations.

The pre-load compactor is an AMFAB TransPak 150 that was installed in 1994. Even though it has a rated capacity by the manufacturer of 37.5 tons per hour, operations staff indicated they currently operate at between 45 and 50 tons per hour. Compactors of this type have a typical service life of about 10 – 15 years. They can be kept in operation longer by replacement of worn out parts; however, the maintenance time and cost required annually increases as they age. The compactor is currently operating at its design capacity for approximately 10 hours per day five days per week. The compactor has reached the end of its useful life. One of the hydraulic rams used for compaction of the waste is currently being repaired and the spare ram is only expected to last for a couple of weeks after emergency repairs. The compactor needs to be replaced as soon as possible to avoid a crisis situation. As the annual waste quantities continue to increase, the hours of operation will have to increase unless the throughput capacity of the equipment is increased. As a replacement compactor is needed immediately, the County should consider purchasing a compactor with greater operating capacity, to minimize increases in the labor costs due to longer hours of operation.

The crane is currently 18 years old and the compactor is 11 years old. The compactor is at the end of the typical range of service life for this equipment. Replacement of the compactor and cranes spare parts should be planned and budgeted, if current operations are to be continued.

Mobile Equipment

The Solid Waste Section Rents mobile equipment from the County’s Equipment Rental and Revolving (ER&R) fund division. This equipment includes the loader and dozer at the tipping floor, backhoes, trucks and trailers.

The County has established an equipment repair and replacement fund for its mobile equipment through the County’s Equipment Rental and Revolving (ER&R) Fund division. Mobile equipment routine maintenance and repair is handled by this division. Equipment rental rates had significantly increased in the past couple years in order to accumulate sufficient funds for equipment replacement. An equipment replacement schedule of 15 to 22 years has historically been used for equipment such as loaders, crawlers, and rail trucks. The industry standard is typically 7 to 10 years, depending on hourly usage or mileage.

As current equipment is replaced, it is anticipated that ER&R rental rates will stabilize and estimated life will reflect equipment usage and industry standards.

During the current fiscal year, the Solid Waste Section plans to replace a cargo van and a rail truck. The rail truck will be purchased from Solid Waste Section reserve funds instead of the ER&R funds.

Drop Box Location Compactors

Two compactors receive MSW at the Clear Lake drop off site. The compactors at Clear Lake have a capacity of about 7 tons per container. The compactors are relatively new, both less than 3 years old.

Open-Top Containers

The RTS and Sauk operate with 5 – 40 cubic yard open top yard containers drop-off bays along a Z-wall. Yard containers ranging in size from 15 to 40 cubic yards are used at both drop box locations. Container replacement cost is budgeted for \$20,000 per year.

CUSTOMER SURVEY

Survey Description

Two surveys were conducted in November, 2004 to assess customer satisfaction and labor relations. Interviews with representatives from 4 cities and Waste Management focused on their satisfaction with the services provided by Skagit County. The union president and one union representative were asked questions related to their members satisfaction with the management, operations, and opportunities at Skagit County. Participants are listed in Table 2.

Table 2 - Customer Satisfaction Survey Respondents

Name	Representing	Survey Taken
Mark Krueger	City of Anacortes	Customer Satisfaction
Ivan Rasmussen	City of Burlington	Customer Satisfaction
Scott Sutherland	City of Mount Vernon	Customer Satisfaction
Leo Jacobs	City of Sedro-Woolley	Customer Satisfaction
Greg Dennis	Union (Local President)	Labor Relations
Kevin Renz	Union Representative	Labor Relations
Larry Willis	Waste Management	Customer Satisfaction

The surveys were designed to provide HDR with helpful information as well as to give Skagit County staff and members of the technical oversight committee an opportunity to confidentially address their goals, opinions, and concerns. The majority of the questions were rated on a scale of 1 to 5, allowing for scores to be compiled numerically. Additionally, respondents were given an opportunity to provide comments for every question.

Survey Results

Overall, both the customer satisfaction and labor relations surveys rated Skagit County's performance as satisfactory to above expectations. Comments further clarified the reasoning for ratings, and almost universally gave praise to the County's transfer station staff for doing the best they can with the current condition of the equipment and buildings at the site. The majority of the respondents also noted that a great deal more could be done if funding was provided to improve the operations. Many cited reluctance on the part of the Board of Commissioners as the only reason needed improvements have not occurred.

The summarized results of the two surveys are presented in Tables 3 and 4. The complete survey summary, with all ratings and comments, is included in Appendix B.

Table 3 - Labor Relations Survey Summary

Question		Avg. Rating	Rating Description
1	How satisfied are your members with the opportunities they've had to develop skills that will help them in their current positions?	4	Somewhat Satisfied
2	How satisfied are your members with the opportunities they've had to develop skills that will help them advance?	3	Neutral
3	How satisfied are your members that the equipment, tools, supplies and physical work environment where they work allow them to be productive?	3.5	Neutral to Somewhat Satisfied
4	How satisfied are your members with the safety of their work environment?	4	Somewhat Satisfied
5	How satisfied are your members with the safety training and safety equipment available in the workplace?	4	Somewhat Satisfied
6	How open is your organization to new ideas that improve the way your members work?	4	Somewhat Open
7	How cooperatively does management and your union leadership work together to solve mutual problems?	5	Very Cooperative
8	How would you rate the satisfaction of your members in regard to union negotiations being conducted in an atmosphere of mutual trust and respect?	3.25	Neutral to Somewhat Satisfied
9	How would you rate the satisfaction of your members in regard to labor issues raised by the union being addressed reasonably?	4	Somewhat Satisfied
10	How would you rate the satisfaction of your members in regard to worker training programs being implemented on a reasonable schedule?	0	No Opinion
11	How would you rate the satisfaction of your members in regard to the County providing a good program for workplace hazard minimization?	4	Somewhat Satisfied
Question		Comment Excerpts	
12	If there was <u>one thing your members could change</u> at the Skagit County solid waste operations, what would it be?	The security of knowing the transfer station would stay in business. The discussion about potential privatization has been going on for years, so there is an underlying concern about why it's being discussed and if they'll have a job next year.	
Question		Avg. Rating	Rating Description
13	If there was <u>one thing your members could keep the same</u> at the Skagit County solid waste operations, what would it be?	The operation itself. The management is good and the operation's structure is good. Everyone enjoys working there.	

Table 4 – Customer Satisfaction Survey Summary

Question		Comment Excerpts	
1	What County provided services does your organization utilize?	The transfer station. All citizens have access to use county provided on-site services (yard waste, recycle, white goods, household hazardous waste, etc.).	
Question		Avg. Rating	Rating Description
2	How you would rank the transfer station facility services?	3.8	Somewhat Satisfied
3	How you would rank the transfer station services in terms of typical queuing and driver wait times?	3	Intermediate Waits
Question		Response	
4	Is the transfer station location adequate for the needs of your constituents and city disposal system?	100% Yes (5 of 5)	
5	Are there any issues regarding the transfer station location that need to be addressed?	100% No (5 of 5)	
6	Is there anything that the County could do to improve existing services at the transfer station?	100% Yes (5 of 5)	
Question		Avg. Rating	Rating Description
7	Level of satisfaction with acceptance of deliveries of MSW at the transfer station facility.	3.8	Above Expectations
8	Level of satisfaction with truck turn-around time (queuing time) at the transfer station facility.	3.4	Satisfactory
9	Level of satisfaction with accuracy of the weigh records.	4.2	Above Expectations
10	Level of satisfaction with traffic control at the site.	3.2	Satisfactory
11	Level of satisfaction with screening of unacceptable waste at the transfer station facilities.	3.6	Satisfactory to Above Expectations
12	Level of satisfaction with safety record at the transfer station.	2.7	Below Expectations to Satisfactory
13	Level of satisfaction with environmental compliance at the transfer station.	3.7	Satisfactory to Above Expectations
14	Level of satisfaction with maintenance of the transfer station.	2.4	Below Expectations to Satisfactory
15	Level of satisfaction with accuracy of invoices.	4.2	Above Expectations
16	Level of satisfaction with value of services provided.	4	Above Expectations
17	Level of satisfaction with Skagit County's ability to work out problems, including uncontrollable circumstances.	3	Satisfactory
18	Level of satisfaction with Skagit County's timeliness in responding to issues of concern.	3	Satisfactory
Question		Response	
19	In your opinion, does Skagit County live up to its contractual commitments?	100% Yes (5 of 5)	
20	Overall, are you satisfied with the service provided by Skagit County?	90% Yes (4.5 of 5) 10% No (0.5 of 5) - 1 respondent answered both Yes and No	
21	If price and terms were satisfactory, would you be willing to continue to have your community's non-recycled MSW processed by Skagit County?	100% Yes (4 of 4) 1 respondent had no opinion.	

Table 4 – Customer Satisfaction Survey Summary (Continued)

Question	Avg. Rating	Rating Description
23 Do you see a value to the other non-garbage programs provided by Skagit County to your community?		
a) Education	3.25	Satisfactory
b) Litter Control Program	3.5	Satisfactory to Above Expectations
c) Illegal Dumping Program	4	Above Expectations
d) Recycling	3.33	Satisfactory
e) Household Hazardous Waste	4.25	Above Expectations
f) Landfill Environmental Monitoring Program	4.33	Above Expectations
Question	Response	
24 Is your community committed to continued support of these services?	100% Yes (4 of 4) 1 Not Applicable	
25 Other comments, issues, testimonies or concerns related to the services provided by Skagit County as they pertain to these other Solid Waste Management services.	See Appendix B for comments.	
Question	Avg. Rating	Rating Description
26 The current regional approach to solid waste management has been beneficial to my community.	4.2	Agree
27 Continuing the regional approach to solid waste management after the current interlocal agreement expires in 2014 will be beneficial to my community.	4	Agree

General Comments

High level of satisfaction with and support for the staff at the transfer station:

“The crew does a great job, even without the needed improvements occurring at the transfer station.”

“Rating of 5 – given to the Skagit County staff for keeping everything running. They do a great job with what they’ve got.”

“Staff does really well with what they have to work with, and don’t get any recognition. The staff always ends up getting the garbage moved, no matter what happens to equipment, etc.”

“Staff at the transfer station does whatever they can to ensure the garbage is processed.”

“County does the best they can with what they have.”

“Noted the staff at the facility is willing to work out anything.”

The greatest concerns raised in the comments related to the elected official decision making:

“Rated low due to the politics. If there were no politics involved, he felt it would be well run.”

“Feels the Commissioners are not supporting improvement in a way to solve problems.”

“Rating of 1 - given to the Commissioner’s due to lack of funding for equipment upgrades.”

“If the crew could do what they wanted without influence of the politics, his satisfaction rating would be higher.”

“Would like to say the rating would be a 2, due to politics in the last several years, but stated staff does a good job, but is not getting what they need.”

“Political issues have been holding things up. Maintenance has been deferred, and the Comprehensive Plan is taking too long.”

Suggestions for improvement provided in the customer survey:

- Provide separate lines and/or areas for commercial vehicles, both to the scales and bays for dumping.
- Provide funding to upgrade both the equipment and the transfer station portion of the site.
- Increase the hours of operation for Household Hazardous Waste.

CHAPTER 4 - BUDGET ANALYSIS

The Solid Waste Section is considered a part of the Public Works Department and a component of the financial reporting entity of Skagit County. The Solid Waste Section performs the function of solid waste management for the residents of Skagit County with its operations financed primarily through user charges (tipping fees). Under accounting standards, the Solid Waste Section operates as an enterprise fund, a type of proprietary fund. Financial statements are prepared on an accrual basis of accounting, which records the financial effects on an enterprise of transactions and other events as they occur.

HISTORICAL INFORMATION

Operating Costs

The Solid Waste Section prepares an annual budget, which is submitted as part of the Public Works Department budget each year. The budgeting process also includes revenue projections based on the established user charges and waste and recyclables delivery expectations for the year. The historical system revenues and expenses for the past five years, based on the restated records and reports provided by the Solid Waste Section, are summarized in Table 5 below.

Table 5 - Historical Revenues and Expenses

	1999	2000	2001	2002	2003
Revenues:					
<i>Operating Revenues:</i>					
Municipal Solid Waste Fees	\$2,921,601	\$2,750,724	\$2,815,879	\$2,850,816	\$2,963,522
Individual/Private Firms Solid Waste Fees	3,979,582	4,048,579	4,186,831	4,457,282	4,650,594
Container Service	147,842	102,520	230,869	188,271	194,092
Appliance Recycling Fees	50,240	55,155	64,065	72,930	69,625
Moderate Hazardous Waste	8,005	8,290	7,794	6,197	6,572
Total Operating Revenues	\$7,107,270	\$6,965,268	\$7,305,439	\$7,575,496	\$7,884,405
<i>Non-Operating Revenues:</i>					
Interest Earnings	\$81,028	\$184,547	\$118,739	\$53,338	\$37,375
Dept of Ecology Grants	138,424	139,122	184,388	178,741	154,314
Miscellaneous Revenues	6,034	232,177	423	10,644	995
Total Non-Operating Revenues	\$225,486	\$555,847	\$303,550	\$242,724	\$192,685
Non Revenues/Other Income (Expenses)	\$0	\$0	(\$25,896)	(\$64)	\$0
Total Revenues and Other Resources	\$7,332,756	\$7,521,115	\$7,583,093	\$7,818,156	\$8,077,089
Expenses:					
<i>Costs of Operations & Maintenance:</i> ¹					
Salary and Wages	\$795,009	\$803,345	\$869,970	\$908,899	\$1,004,597
Personnel Benefits	200,951	200,899	223,423	242,251	274,621
Supplies ²	112,564	82,906	135,973	125,920	142,593
Other Services and Charges ³	3,710,840	3,983,822	4,199,623	4,387,095	4,588,246
Intergovernment/Interfund Taxes	83,746	63,493	66,142	72,455	73,568
Capital Outlays ⁴	12,992	82,016	55,707	-	-
Interfund Payments for Services ⁵	425,965	549,537	615,685	446,067	594,072
Total Operating Expenses	\$5,342,067	\$5,766,018	\$6,166,524	\$6,182,688	\$6,677,696
Debt Service	\$1,133,903	\$1,097,481	\$1,094,464	\$1,100,300	\$1,091,738
Deprec./Reclassification/Cost Allocations	\$809,980	\$622,027	\$63,447	\$63,350	\$63,350
Total Expenses and Depreciation	\$7,285,950	\$7,485,526	\$7,324,435	\$7,346,338	\$7,832,783
Net Revenue/(Losses) Avail. for Cash Reserves	\$46,806	\$35,589	\$258,658	\$471,818	\$244,306

Notes:

¹ Costs of operations and maintenance cover transfer station and self haul drop-off operations, remote drop-off sites operations, hauling and waste disposal, post-closure care of landfills, administration, waste prevention and recycling education, moderate risk waste management, employee training programs, and litter control.

² Supplies include operating supplies, fuel, and small tools and minor equipment such as roll-off containers.

³ Other Services and Charges include material handling services provided through contracts (i.e. waste disposal, recycling, appliances, tires, yard waste, and litter control), professional services, communications, repairs and maintenance of fixed buildings/equipment, travel, meals, advertising, miscellaneous rentals, insurance, miscellaneous, and transaction fees.

⁴ Capital outlays include land acquisitions, major equipment, and other improvements.

⁵ Payments for services provided by other County departments and general overhead.

Source: Skagit County Public Works

Tipping Fees

Table 6 shows the history of tipping charges in the County, including the rate charged by RDC for transport and disposal of the waste. During the five-year period between 1993 and 1998, the RDC rates included a charge to cover the installation costs of the preload compactor which was financed by RDC.

Table 6 - Historical Tipping Fees

Year	Cities	Rural	RDC
1987	\$ 27.50		
1988	\$ 36.25		
1989	\$ 36.25		
1990	\$ 47.00		
1991	\$ 60.00		
1992	\$ 80.00	\$ 80.00	
1993	\$ 80.00	\$ 80.00	\$ 44.98
1994	\$ 80.00	\$ 80.00	\$ 46.01
1995	\$ 80.00	\$ 80.00	\$ 47.17
1996	\$ 100.00	\$ 103.14	\$ 44.15
1997	\$ 100.00	\$ 103.14	\$ 45.28
1998	\$ 100.00	\$ 103.14	\$ 46.11
1999	\$ 90.00	\$ 88.17	\$ 41.77
2000	\$ 82.00	\$ 83.00	\$ 42.65
2001	\$ 82.00	\$ 83.00	\$ 43.23
2002	\$ 82.00	\$ 83.00	\$ 44.15
2003	\$ 82.00	\$ 83.00	\$ 44.68
2004	\$ 82.00	\$ 83.00	\$ 45.51

Source: Skagit County Public Works

Reserves

Table 7 shows the historical reserve balances for the last five years.

Table 7 - Historical Reserve Balance

Year Ending	Reserve Balance
31-Dec-00	\$3,148,158
31-Dec-01	\$2,998,531
31-Dec-02	\$3,762,479
31-Dec-03	\$4,378,707
31-Dec-04 (1)	\$4,219,334

Source: Skagit County Public Works

Notes: (1) Unaudited budget estimate

SYSTEM REVENUES

The Solid Waste Section system revenues must cover the costs of operations and maintenance of the solid waste system, payment of debt service principal and interest, and payment of certain taxes, assessments, or other governmental charges imposed on the system. The system revenues include: (a) municipal tipping fees for the disposal of solid waste at system facilities; (b) private and self-haul tipping fees for the disposal of solid waste at system facilities; (c) fees for appliances with and without refrigerants; (d) fees charged to conditionally exempt small quantity generators for disposal of hazardous

wastes; (e) interest earned on invested funds; (f) grants from the Department of Ecology; and (g) miscellaneous revenues.

The 2005 tipping fee set by the County is \$82 per ton for solid waste delivered to the RTS by municipalities and \$83 per ton for solid waste delivered by private haulers and self-haulers to the RTS and Sauk drop-site (i.e., an average of approximately \$82.50). A refuse tax of 3.6% is applied by the state to this tipping fee. The 2005 tipping fees have been maintained at this level since 2000.

There is no extra charge for recyclables or tires; although there is a limit of four tires per customer. Appliances that contain refrigerant are charged at a rate of \$25 for disposal, and non-refrigerant appliances charged at a \$10 fee. Charges for moderate risk waste disposal from SQG businesses ranges from \$3.00 to \$36.00 per gallon of waste, depending on the type of material delivered.

At the Clear Lake drop-site, customers pay an equivalent of \$4 per standard volume of a residential trashcan. Tires can be compacted along with other household wastes at both remote drop-sites, although the four tire limit per customer still applies.

2005 BUDGET

The Skagit County Solid Waste Section budgets expenses into eight subdivisions:

- Division 1 – Administration (debt service and professional consulting services)
- Division 2 – Environment (i.e. landfill post-closure monitoring care; old disposal sites)
- Division 3 – Education
- Division 4 – Transfer Station
- Division 5 – Compactors (i.e. operations of Clear Lake and Sauk remote sites)
- Division 6 – Training
- Division 7 – Hazardous Waste
- Division 8 – Litter Cleanup

Each subdivision further separates the expenses into the following budget categories:

- Salaries and wages
- Personnel benefits
- Supplies
- Other Services and Charges
- Inter-government / Inter-fund Services / Taxes
- Capital Outlays
- Debt Service Principal and Interest
- Inter-fund Payments for Services

The Other Services and Charges include costs of solid waste hauling and disposal and recycling charges. Inter-fund Payments for Services include the mobile equipment rental rates to the Equipment Rental and Revolving Fund, allocations to County Public Works and General Fund, County Health Department Fee at \$1 per ton of solid waste, and other miscellaneous payments for services provided by other County departments or divisions.

Annual Operating Costs

System operating expenses include: (i) the cost of operating and maintaining the RTS and remote drop-sites, including the recycling drop-offs; (ii) the rail haul and landfill disposal expenses for solid waste; (iii) system administration expenses; (iv) debt service principal and interest; (v) landfill and environmental expenses associated with post-closure monitoring and remediation; (vi) waste prevention education program expenses; (vii) the cost of operating and maintaining the moderate risk waste facility and material disposal; and (viii) litter clean-up program expenses.

The budgeted 2005 expenses exceed the anticipated system revenues. Monies from reserves have been assumed to be utilized in 2005 to provide rate stabilization. It should be noted that over the past five years, while budgeted expenses exceeded anticipated revenues, actual revenues were better than budget and reserves were not used to stabilize rates.

Equipment Repair and Replacement

Mobile equipment for the solid waste system is handled through the County's Equipment Rental and Revolving Fund as described in Chapter 3. Table 8 shows the annual 2005 rental rate charged to the Solid Waste Section on a monthly basis. Rates on pieces of equipment scheduled for replacement in 2005 are subject to change based upon the date such equipment is removed from service.

Table 8 - Equipment Revolving Fund Rate Schedule

Veh #	Type	Year Purch	Desc	Yrs in Svc	Est Life	Est Year of Replace	Original Cost	2005 Annual Rate
243	C30	1998	Chevy C1 PU	7	8	2006	\$ 15,686.77	\$ 2,814
249	C40	1998	Chevy K1 PU	7	11	2009	\$ 19,154.00	\$ 344
253	B40	1999	Chevy Cargo Van	6	6	2005	\$ 19,133.00	\$ 5,315
305	D10	2000	Litter Truck	5	9	2009	\$ 21,681.00	\$ 5,503
472	E50	1986	Cat 963	19	22	2008	\$ 107,834.00	\$ 8,173
473	E50	1986	Cat 973	19	22	2008	\$ 59,900.00	\$ 51,299
498	E51	1984	Cat 950	21	22	2006	\$ 93,499.00	\$ 62,779
512	E80	1985	Tymco Sweeper	20			\$ 77,057.00	\$ 687
752	E80	1987	JD Sweeper	18				\$ 687
753	D80	1987	International Rail Truck	18	18	2005		\$ 687
754	D80	2000	International Rail Truck	5	15	2015	\$ 112,111.54	\$ 16,774
755	E91	1991	Cat VC60DSA	14	22	2013	\$ 25,898.00	\$ 1,695
756	D70	2000	1995 Kenworth	5	16	2016	\$ 25,000.00	\$ 21,448
757	D70	2001	1995 Ford L9000	4	15	2016	\$ 25,898.00	\$ 13,499
1002	A20	2000	Ford Taurus	5	11	2011	\$ 17,687.00	\$ 2,833
								\$ 194,537

Source: Skagit County Public Works

Landfill Post-Closure Care

The County's obligations for environmental post-closure monitoring of the Inman, Sauk, and Gibraltar landfills includes one half-time personnel conducting groundwater and landfill gas monitoring, inspections, and general maintenance. The budget included two hydro positions, one of which is currently vacant. Laboratory analysis of groundwater samples and miscellaneous supplies are also budgeted for post-closure care.

The budget also includes items for surveying and potential land purchase of old waste disposal sites within the County. The County annually budgets approximately \$20,000 capital outlay for any land purchases. Purchases above this amount and non-budgeted monitoring and remediation activities related to an old waste disposal site are anticipated to utilize reserves to cover expenses.

Grant-Supported Programs

Various grants have been received by the County from Ecology for solid waste management programs and activities. Ecology's Coordinated Prevention Grants (CPG) program provides funds to support certain activities that minimize or prevent contamination from the disposal of hazardous and solid wastes. The CPG program provides such funds on a two-year basis. For 2004 and 2005, the County received CPG commitments for \$276,000 and additional supplemental CPG award amounts of \$47,813 and \$15,938 for fluorescent tube recycling and hazardous waste facility staff person, respectively. The CPG funds support up to 75% of the County's hazardous waste program operations and related activities. Another grant from Ecology, the community litter grant, has been awarded to the County for litter clean-up programs in the amount of \$92,375 for a two-year period. This supports approximately 45% of the 2005 budgeted litter clean up program.

The County anticipates the CPG and community litter grant funds will continue to be available throughout the rate study term. The supplemental CPG funds are not anticipated to continue.

Debt Obligations

In 1993, the County issued general obligation bonds in the amount of \$6,685,000 which were used to pay for the financing and construction of a waste-to-energy facility. In 1996 the County issued \$5,365,000 to refinance a portion of the 1993 debt and reduce its interest expense. The County discontinued incineration of its waste in 1994 and converted the facility into the RTS. In 2003, the outstanding 1993 bonds were refinanced with the issuance of \$2,820,000 in limited tax general obligation bonds. As of January 2005, the County has an outstanding debt obligation of \$7,225,000. The bonds pay interest on a semi-annual basis and principal on an annual basis to the Trustee for distribution to the bondholders through 2015. The annual amortization requirements for the outstanding bonds are shown in Table 9.

Table 9 - Debt Service Schedule

Fiscal Year	1993 General Obligation Bonds Original \$6,685,000 (Refinanced in 2003)			1996 General Obligation Bonds \$5,365,000					
	Principal	Interest	Sub Total	Principal	Interest	Sub Total	Principal	Interest	Grand Total
1993	\$ -	\$ 183,553	\$ 183,553				\$ -	\$ 183,553	\$ 183,553
1994	110,000	313,170	423,170				\$ 110,000	\$ 313,170	\$ 423,170
1995	115,000	309,988	424,988				\$ 115,000	\$ 309,988	\$ 424,988
1996	120,000	306,223	426,223	\$ -	\$ 213,537	\$ 213,537	\$ 120,000	\$ 519,760	\$ 639,760
1997	125,000	301,870	426,870	-	268,788	268,788	\$ 125,000	\$ 570,658	\$ 695,658
1998	515,000	289,515	804,515	20,000	268,788	288,788	\$ 535,000	\$ 558,303	\$ 1,093,303
1999	530,000	268,608	798,608	25,000	268,008	293,008	\$ 555,000	\$ 536,616	\$ 1,091,616
2000	550,000	245,918	795,918	25,000	267,008	292,008	\$ 575,000	\$ 512,926	\$ 1,087,926
2001	575,000	221,155	796,155	25,000	265,995	290,995	\$ 600,000	\$ 487,150	\$ 1,087,150
2002	600,000	194,118	794,118	30,000	264,970	294,970	\$ 630,000	\$ 459,088	\$ 1,089,088
2003	665,000	125,045	790,045	35,000	263,725	298,725	\$ 700,000	\$ 388,770	\$ 1,088,770
2004	725,000	57,325	782,325	35,000	262,237	297,237	\$ 760,000	\$ 319,562	\$ 1,079,562
2005	735,000	42,825	777,825	40,000	260,715	300,715	\$ 775,000	\$ 303,540	\$ 1,078,540
2006	745,000	28,125	773,125	45,000	258,935	303,935	\$ 790,000	\$ 287,060	\$ 1,077,060
2007	575,000	13,225	588,225	50,000	256,888	306,888	\$ 625,000	\$ 270,113	\$ 895,113
2008				525,000	254,563	779,563	\$ 525,000	\$ 254,563	\$ 779,563
2009				550,000	229,625	779,625	\$ 550,000	\$ 229,625	\$ 779,625
2010				580,000	202,950	782,950	\$ 580,000	\$ 202,950	\$ 782,950
2011				610,000	174,240	784,240	\$ 610,000	\$ 174,240	\$ 784,240
2012				640,000	143,435	783,435	\$ 640,000	\$ 143,435	\$ 783,435
2013				675,000	110,795	785,795	\$ 675,000	\$ 110,795	\$ 785,795
2014				710,000	76,033	786,033	\$ 710,000	\$ 76,033	\$ 786,033
2015				745,000	39,113	784,113	\$ 745,000	\$ 39,113	\$ 784,113
Total	\$ 6,685,000	\$ 2,900,663	\$ 9,585,663	\$ 5,365,000	\$ 4,350,344	\$ 9,715,344	\$ 12,050,000	\$ 7,251,007	\$ 19,301,007
Balance as of 1/1/05	\$ 2,055,000	\$ 84,175	\$ 2,139,175	\$ 5,170,000	\$ 2,007,290	\$ 7,177,290	\$ 7,225,000	\$ 2,091,465	\$ 9,316,465

Source: Skagit County Public Works

Reserves

As an enterprise fund operation which depends on tipping fees and service charges for its operating revenues, the Solid Waste Section needs to maintain a certain minimum level of reserves to handle its anticipated cyclical and emergency funding requirements and to avoid dramatic rate fluctuations. An analysis of reserve requirements must be conducted based on an understanding of the financial risks that the Solid Waste Section is required to assume under its contractual and fiduciary responsibilities to its customers.

Reserve funds are required to manage critical cash flow situations, provide for uninsured events, and predictable and emergency funding requirements. The primary conditions or events that are typically covered by reserves are as follows:

- Monthly Cash Flow Fluctuations
- Periodic Renewals, Replacement and Planned Improvements
- Rate Stabilization between Planned Rate Adjustments
- Uninsured Risks
- Potential Environmental Liability

Monthly Cash Flow Fluctuations

The timing of cash flow receipts, influenced by payment cycles, seasonal fluctuations in waste deliveries, and delinquent accounts, may result in monthly funding shortfalls. Therefore, most public and private business ventures normally establish a cash flow reserve to avoid this problem. Although the funding levels may vary depending on the

level of uniformity in monthly billings and receipts or level of delinquency accounts, a typical monthly cash flow reserve is established based on two or three months of operating costs.

Periodic Renewals, Replacement and Planned Improvements

Major capital improvement projects are typically funded by bonds or other financing mechanisms such as leasing. Leasing options are not available in all circumstances. Therefore, cyclical and predictable renewals, repairs, and replacements that can be anticipated are frequently funded through a revolving reserve fund, resulting in a more cost efficient operation. By creating a revolving reserve fund, the Solid Waste Section can earn interest on the reserves and avoid payment of interest and other finance charges on borrowed money. Although interest rates are currently low, they are currently increasing and will have more impact on the future cost of operations.

The Solid Waste Section already handles its mobile equipment repair and replacement as discussed above using this mechanism, but this program does not include the fixed equipment, such as the RTS overhead crane and pre-load compactor, or any capital improvements to the RTS that are needed to maintain or improve operational efficiency.

Rate Stabilization

The Solid Waste Section currently plans to minimize any rate increases and establish a rate that can be maintained at a constant level for at least three years. In order for the Solid Waste Section to meet this goal, it is critical that a rate stabilization reserve be established to account for the inflationary impacts that could occur over the entire three-year period.

Uninsured Risks

The Solid Waste Section is currently required to pay insurance premiums for the following policies:

- Worker's Compensation
- Comprehensive Automobile Liability
- Comprehensive General Liability

However, the Solid Waste Section is self-insured for all other risks, and must also cover the deductible payments on the policies described above.

Potential Environmental Liability

As discussed in Chapter 1, there are 33 closed landfills in the County and the Solid Waste Section is currently responsible to maintain three of these sites. However, as the County population grows and community developments begin to encroach on the boundaries of these other landfill sites, the County may be required to address environmental concerns that are likely to rise regarding these other sites. Currently the Solid Waste Section only budgets a minimal amount to cover possible land purchases. The County should maintain a reserve fund of sufficient size to enable it to cover its potential liability for costs that might arise during a typical budget year, such as installing monitoring wells and meeting first-year monitoring and reporting requirements for at least one additional site. If additional remediation costs are required to address the problem, they could be addressed in the budgeting process for the subsequent budget year.

Reserve Requirement Estimate

Based on the reserves discussion above, Table 10 identifies the estimated reserves required in year 2005 to meet the potential obligations of the Solid Waste Section.

Table 10 - Estimated 2005 Reserve Requirement

Recommended Reserve Categories	
Monthly Cash Flow Operating Reserves	\$1,278,000
Fixed Equip Replacement & Major Repair Reserves	\$1,981,000
Rate Stabilization Reserves	\$334,000
Uninsured Risks Reserves	\$100,000
Potential Environmental Liability Reserves	\$229,000
TOTAL	\$3,922,000

The monthly cash flow operating reserves shown represent two months worth of 2005 operating expenses, excluding the debt service and capital outlays. Reserves for fixed equipment replacement and major repairs include replacement of the transfer station compactor and crane in year 2006, future periodic major repairs to the compactor and crane, transfer station building repairs/modifications and tip floor resurfacing, periodic repair/resurfacing of transfer station site roadways, and compactor replacement at the remote drop-sites.

Estimated rate stabilization covers unexpected fluctuations in the annual inflation rate in the second and third year of a three-year tip fee by up to two percentage points based on the assumed escalated 2005 operating expenses, excluding the debt service and capital outlays.

Uninsured risks reserves are based on an estimated 10 percent of a \$1,000,000 liability occurrence.

The environmental liability reserve includes current costs (in 2005 dollars) for installation of four groundwater monitoring wells, quarterly sampling and analysis, groundwater data assessment, and basic groundwater remediation system and reporting for the first year of occurrence at any one of the old waste disposal sites. These reserves also include monies for installation of up to 1,500 lineal feet of potable water lines, if required by groundwater assessment, and additional soil cover, grading, and re-vegetation for up to 2 acres of an old waste disposal site.

COST BREAKDOWN BY PROGRAM

As described previously, the Skagit County Solid Waste Section budgets operating expenses under eight subdivisions. In order to evaluate the 2005 budgeted costs of each program per ton of solid waste, the training costs were allocated proportionally to each of the programs based on number of personnel. Training includes a percentage of personnel's salary and benefits from each of the other programs, plus travel and miscellaneous expenses.

The transfer station costs were further divided between scale house operations, self-haul solid waste drop-off operations, self-haul recycling drop-off operations, transfer station operations, solid waste hauling to the railhead, and solid waste disposal.

Remote drop-sites were also analyzed by solid waste operations, recycling operations, solid waste hauling, and solid waste disposal. Recycling operations at the remote sites

include the hauling of recyclables to the recycler and an allocation of the scale house labor based on tonnages.

The annual debt service principal and interest payment are identified separately from the remainder of the Administration division cost.

In Table 11, individual program costs per ton are presented net of miscellaneous revenues specific to each program. For example, the Hazardous Waste Program is net of state grants and revenues received by SQG businesses. Miscellaneous revenues have also been allocated to each program based on the percentage of individual program budgets to the total system costs. Net program costs are divided by the total solid waste tons received by the system, which is estimated by the County to be 100,975 tons in year 2005 Budget.

Table 11- Cost of Program Breakdown

Skagit County Solid Waste System	2005 Budget\$ per Total County SW Ton	Tip Fee Portion of Budget
Scalehouse Operations	\$1.52	\$1.47
Transfer Operations (w/out Hauling, Disposal, Drop-off & CIP\$)	\$6.34	\$6.12
SW Hauling	\$1.42	\$1.37
RTS Operations Subtotal	\$9.27	\$8.96
RDC Disposal	\$46.40	\$46.40
RTS Self-Haul SW Drop-Off	\$2.33	\$2.25
RTS Self-Haul Recycling Drop-Off	\$0.66	\$0.64
RTS Drop-off Operations Subtotal	\$2.99	\$2.89
Remote Drop Sites SW Operations	\$1.05	\$1.01
Remote Drop Sites Recycling Operations	\$0.81	\$0.78
SW Hauling	\$1.04	\$1.00
Remote Drop Sites Subtotal	\$2.90	\$2.80
Administration	\$7.34	\$7.09
Debt Service Principal & Interest	\$10.68	\$10.32
Environment/Landfill Post-Closure	\$2.58	\$2.50
Education	\$0.90	\$0.87
Hazardous Waste Program	\$0.28	\$0.27
Litter Clean-Up	\$0.42	\$0.41
SKAGIT TOTAL COSTS PER SW TON	\$83.77	\$82.50

The table shows that if actual operating costs match the 2005 budget, the tip fees should be \$83.77 per ton of solid waste. This is higher than the average tip fees of \$82.50 per ton (i.e., \$82 per ton for municipal customers and \$83 per ton for privates and self-haul customers). The difference is due to the County budgeting process that conservatively estimates revenues to the system to account for unanticipated circumstances. Although the County typically does not end the year with a revenue shortfall, reserve funds are available to cover expenses should this occur.

Based on the 2005 Budget, the Skagit breakdown cost to operate the transfer station, including hauling to the rail head, is \$9.27 per system ton. The cost per ton for handling self-haul waste and recyclables at the RTS drop-off location is an additional \$2.99 to the tip fee. Although the cost for handling self-haul waste and recyclables at the remote drop-off sites only impacts the tipping fee by \$2.90, the actual cost per ton of waste handled by those sites is \$141.68.

RATE COMPARISONS

In order to provide a basis for evaluating the competitiveness of the Skagit solid waste system with other similar operations, data was collected using several different mechanisms as described in the following sections.

Tipping Fee Comparisons

A survey of the tipping fees charged by various municipal governments in the region was conducted to compare the overall costs for municipal solid waste disposal services with the cost charged in Skagit County. The results of the tip fee survey are shown in Table 12.

Table 12 - Tipping Fee Comparison

Area	\$/Ton	Comments
Port Angeles	\$ 80.65	Landfill Operations Only
Kitsap-Olympic TS	\$ 62.02	\$8.81/ton excise and \$2/tn litter&illegal cl
King County TS	\$ 85.56	Disposal at County landfill
Snohomish County	\$ 89.00	Rail Haul to Roosevelt landfill
Tacoma	\$ 125.00	Dispose at Tacoma owned landfill
Pierce County	\$ 89.24	Rail Haul to Roosevelt landfill
San Juan County	\$ 238.00	Ferry operations increase costs.
Island County	\$ 85.00	
Seattle	\$ 99.15	Rail Haul
Grays Harbor-Central	\$ 79.00	Rail Haul to Roosevelt landfill
Skagit County RTS	\$ 82.00	Rail Haul to Roosevelt landfill
Average	\$ 101.33	

The average tipping fee for the municipal governments, listed in Table 14, of \$101.33 per ton is substantially higher than Skagit County's tip fee of \$82.50 per ton. It should be noted that the average is unduly influenced by the \$238 per ton tip fee charged by San Juan County. If the San Juan County tip fee is removed the average tip fee becomes \$87.66 per ton, which is still significantly higher than Skagit County's fee.

Peer Services Comparison

The rate structure of several peer operations which use transfer stations for containerization and rail shipment were investigated in more detail. Based on the data reported by these public entities, a breakdown comparison of the tipping fee portions related to the various programs provided by those public entities is compared with Skagit's budget breakdown in Table 13. This data shows Skagit County costs compare favorably to both King County and Snohomish County. In fact, transfer station operations for Skagit County are the lowest of these three municipally operated systems.

Table 13 - Cost Comparisons of Municipal Operated Systems

	Skagit County 2005 Budget	Snohomish County Tip Fee ^{1,3}	King County 2005 Budget ^{2,3}
Administration	\$ 7.34	\$ 6.23	\$ 14.32
Planning/Program Management⁴	\$ 3.07	\$ 5.34	\$ 7.84
Operations⁵	\$ 13.70	\$ 21.36	\$ 16.78
Rail Haul & Disposal⁶	\$ 46.40	\$ 38.27	\$ 36.58
LF Post Closure⁷	\$ 2.58	\$ 1.78	\$ 4.20
Debt Service	\$ 10.68	\$ 15.13	\$ 3.86
Total Costs Per Ton	\$ 83.77	\$ 89.00	\$ 83.59

Notes:

¹ Program breakdowns based on percentages provided by Snohomish County and solid waste tipping fee.²² Based on King County 2005-2006 rate study (dated March 2004) for solid waste system of 8 transfer stations and 2 drop boxes.³ Potential withdrawals from reserves and receipt of grant amounts are unknown.⁴⁴ Includes long range planning, waste prevention (education, litter clean-up, etc.), recycling, and moderate risk waste programs.⁵ Includes scalehouse and transfer station operations, transfer station self haul drop-off, rural self haul drop-offs, and railhead transport.⁶ Skagit County and Snohomish County include rail haul and disposal costs. King County includes Cedar Hills Landfill operations and truck transportation from transfer station to the Cedar Hills Landfill.⁷ King County includes debt service payments for environmental remediation projects completed in the 1980s.

A proportional comparison of the Skagit County and Whatcom County tipping fees was conducted based on the primary components of the 2005 budgets to assess how Skagit County's cost of services compared with that of Whatcom County, which relies principally on the private sector for solid waste management and recycling services. As can be seen in Table 14, Whatcom County has a more complicated tiered rate structure than Skagit County.

Table 14 – Tip Fee Comparison With Whatcom County

	Skagit County Average Tip Fee ¹	Whatcom RDS ² CH ³	Whatcom RDS ² SH ⁴ Large Vehicles	Whatcom RDS ² SH ⁴ Small Vehicles	Whatcom RDC ² CH ³ B'ham	Whatcom RDC ² MSW ⁵	Whatcom SSC ⁶
Admin/Public Education	\$ 8.35	\$ 3.57	\$ 3.57	\$ 3.57	\$ 3.57	\$ 3.57	\$ 3.57
Yard Waste/Recycling Drop-Offs	\$ 1.43	\$ 1.28	\$ 1.28	\$ 1.28	\$ 1.28	\$ 1.28	\$ 1.28
LF ⁷ Monitoring/Maintenance	\$ 2.49	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70	\$ 1.70
MRW ⁸	\$ 0.27	\$ 1.96	\$ 1.96	\$ 1.96	\$ 1.96	\$ 1.96	\$ 1.96
Subtotal Admin/Prog Mgmt	\$ 12.54	\$ 8.50	\$ 8.50	\$ 8.50	\$ 8.50	\$ 8.50	\$ 8.50
Operations/Disposal/Imp'r'mts	\$ 59.68	\$ 67.84	\$ 69.50	\$ 91.50	\$ 72.86	\$ 61.50	\$ 159.73
Subtotal before Debt Service	\$ 72.22	\$ 76.34	\$ 78.00	\$ 100.00	\$ 81.36	\$ 70.00	\$ 168.23
Debt Service	\$ 10.28	\$ -	\$ -	\$ -	\$ -	\$ -	N/A⁹
Total Tip Fee	\$ 82.50	\$ 76.34	\$ 78.00	\$ 100.00	\$ 81.36	\$ 70.00	\$ 168.23

Notes:

¹ Based on 2005 Budget breakdown divided by estimated annual solid waste at 100,975 tons. Individual programs net of state grant revenues, reserve withdrawals, appliance revenues, and misc. revenues.² Tipping rate (total cost) includes \$8.50 excise tax paid to Whatcom County.³ Commercial Haul.⁴ Self Haul.⁵ Municipal Solid Waste.⁶ MSW per Cubic Yard (loose) tipping rate is \$29.44. The waste from this convenience site in downtown Bellingham goes through either transfer stations where their tip fee is paid, including excise tax. At an assumed average cubic yard (loose) weighs 350 pounds, an average per ton t would be \$168.23 (2,000 pounds / 350 pounds * \$29.44).⁷ Land Fill.⁸ Moderate Risk Waste (i.e., household hazardous waste).⁹ Privately owned facility; some debt service might be included in the above tipping fees.

There are two private transfer stations that export waste from Whatcom County: Recycling and Disposal Services (RDS), and Regional Disposal Company (RDC). RDS trucks its waste to Seattle, where it is loaded on a train and sent to the Columbia Ridge landfill in eastern Oregon. RDC loads waste onto a train on their rail spur and the waste is disposed at Roosevelt landfill in eastern Washington. The RDS site has three primary rates for MSW based on delivery vehicle types; commercial haulers, large vehicles (self-haul), and small vehicles (self-haul). The RDC site has a base rate and contract rates for certain municipalities. About 60% of the waste that passes through the RDC site is from Bellingham, which imposes a surcharge for ash disposal from the former incinerator.

Waste collection services throughout Whatcom County are contracted privately and the largest collection contractor is SSC. SSC also operates a drop-off facility in Bellingham for self-haul customers. Four other remote drop-off facilities are operated by private companies at former landfill sites throughout the County. Although there is no cost breakdown available separating the costs for transfer station operations in Whatcom County, a comparison of transfer and disposal costs in Table 14 (Operations/Disposal and Improvements) for both counties shows that Skagit's costs are lower for this component of the provided solid waste services. If it were not for Skagit's debt service component related to the closed incineration facility, the Skagit overall solid waste charges would also be lower than Whatcom County's solid waste programs.

Whatcom County does not bill any of the hauling customers at the transfer station sites, which are leased to the operators. However, the County imposes an excise tax (\$8.50) on the commercial haulers for all municipal solid waste tonnage delivered to the transfer stations to cover the costs of county solid waste administration, fund a yard waste program in Bellingham, provide post-closure care for its landfills, operate a moderate risk waste facility, and distribute a public education /recycling brochure. The excise tax is calculated for municipal solid waste only and excludes recycling, white goods, yard waste, etc., and tonnage from exempt customers (e.g., Tribal Nations, Government, Housing Authority). The tax is documented by the commercial haulers and paid directly to the County on a quarterly basis. The excise tax is not collected for waste dropped off by self-haul customers, because the transfer station operators brought a lawsuit against the County, stating they are not a taxing authority. The result of this action left the County with no means to collect the tax on self-haul waste, and resulted in a situation where those who choose waste collection are funding the County programs for those who choose self-haul. As both Whatcom and Skagit receive grant monies from the state, the comparison is shown net of grant monies and other revenue sources such as recycling revenues and rate stabilization contributions from reserves.

The Administration and Public Education component for both counties includes only two personnel, but Whatcom County appears to have lower inter-departmental costs or fund these costs from the general fund. In addition, Whatcom County has no debt service costs. Therefore a subtotal comparison excluding debt service is also shown to provide a true comparison of operational costs of both of the counties.

FIXED AND VARIABLE COSTS

The Solid Waste Section costs have been broken down into two major categories to assist decision-makers in planning for future variations in solid waste quantities handled by the division consisting of the following:

- Fixed operating costs, which are not expected to change with fluctuations in the waste quantity deliveries

- Variable operating costs, which will fluctuate based on the quantities of waste handled

The fixed costs include the outstanding debt service on the RTS, the administration costs, environmental management costs relating to the post-closure care of the County's landfills, litter control programs and recycling education programs. The County site management costs for citizen drop-offs for recyclables and waste and the moderate-risk waste facility could also be classified as fixed costs unless these programs are discontinued or privatized. Since the RTS scale operation hours are really a function of convenience to facility customers more than a tonnage related function, this portion of the operation should also be considered a fixed cost, unless the hours of operation are changed.

Table 15– Summary of Fixed and Variable Costs

Cost Allocations based on the 2005 Budget	Fixed Costs/Ton	Variable Costs/Ton
RTS Operations		
Scalehouse Operations	\$1.52	
Transfer Operations (w/out Hauling, Disposal, Drop-off & CIP\$)		\$6.34
SW Hauling		\$1.42
RDC Disposal		\$46.40
RTS Self-Haul SW Drop-Off	\$2.33	
RTS Self-Haul Recycling Drop-Off	\$0.66	
Remote Operations		
Remote Drop Sites SW Operations	\$1.05	
Remote Drop Sites Recycling Operations	\$0.81	
SW Hauling		\$1.04
Administration	\$7.34	
Debt Service Principal & Interest	\$10.68	
Environment/Landfill Post-Closure	\$2.58	
Education	\$0.90	
Hazardous Waste Program	\$0.28	
Litter Clean-Up	\$0.42	
TOTALS	\$28.58	\$55.19
TOTAL COSTS FROM TABLE 11		\$83.77

The variable costs principally include the RTS labor costs, equipment operating costs, inter-facility transportation costs and rail haul/disposal costs. The costs of hauling waste from the remote drop-off and RTS drop-off sites has been increasing more rapidly than any other program provided by the County due to the large increase in the number of customers and the quantities of waste handled. Although these costs are variable, cost reductions for this program are only likely to occur due to increases in charges for this service to encourage the use of franchise collection services, privatization of this service or other changes to this program to reduce the high cost for double handling the waste. Table 15 provides a summary of the division fixed and variable costs, based on the current operations.

RATE SETTING MODEL

Based on our review of the historical operating costs, the 2005 Budget estimates and current estimates of the cyclical repair and replacement costs, a rate setting model has been developed to evaluate and establish solid waste rates over a rate stabilization period. The rate setting model is designed to be used in conjunction with the budgeting

process for Fund 401 under the County's current annual budgeting model in order to assist the County in substantiating future rate adjustments.

The steps in developing the solid waste rate setting model are as follows:

- Develop estimates for future waste quantity deliveries by customer category
- Determine the revenue requirements for operating the system over the current budget year
- Assess the debt obligations and cyclical costs for future years
- Develop appropriate escalation provisions to project future system operating costs
- Allocate system costs into functional categories (i.e., Remote drop-off, RTS operations, hauling, disposal, HHW, litter control, etc.)
- Allocate supplemental non-rate revenues into the appropriate functional categories (i.e., grants, moderate risk waste, interest revenues)
- Allocate system costs by functional category to appropriate customer service characteristics (municipal, franchise hauler, self-haul)
- Design a solid waste rate structure based on established policy goals and the cost responsibility of the respective customer class

Policy Goals and Objectives

The primary County policy goal relating to budgeting and rate setting are to maintain a stable rate structure which is not subject to major fluctuations and is only adjusted to account for normal escalation impacts every three years. In order to meet this policy goal, the County's objective is to continue to operate the solid waste system as an enterprise fund by maintaining appropriate reserves to address anticipated cyclical and reasonable emergency funding requirements.

Waste Quantity Projections

The Solid Waste Section receives waste deliveries from the cities of Anacortes, Burlington, Mount Vernon, and Sedro-Woolley, Waste Management (the franchise hauler in the County) and from various self-haulers. Historical data on the deliveries received from each of these customer categories was reviewed to establish waste disposal trends within the County, as shown in Table 16.

This data revealed several trends which were subsequently used to develop estimates for future revenue and disposal requirements during the first three-year rate stabilization period and beyond.

The primary trends that were identified are as follows:

- The tonnage deliveries from the cities showed relatively uniform growth over the five year period and generally followed the population growth trends
- Deliveries from Waste Management have shown a slower growth pattern since 2000
- Deliveries for cash and credit card customers has grown dramatically in the five year period
- Credit card tonnage has shown slower growth over the last two years

Table 16 - Waste Quantity Estimates

Cities ⁽¹⁾	2005	2010	2015	2020
Anacortes	7,858	8,667	9,560	10,545
Burlington	5,602	6,877	8,441	10,362
Mount Vernon	19,515	22,365	25,632	29,377
Sedro Woolley	5,239	6,366	7,736	9,401
Subtotal City Tons	38,214	44,276	51,370	59,685
Waste Management	32,791	35,504	38,416	41,567
Self-Haulers				
Commercial Acct.	5,827	6,976	8,351	9,997
Cash (Res & Comm)	16,963	23,836	33,495	47,068
Credit Card	4,042	6,551	10,617	17,207
Subtotal Self-Haul	26,832	37,363	52,463	74,272
Remote Sites (Drop Boxes)				
Sauk	1,769	2,517	3,582	5,097
Clear Lake	514	532	551	571
Other Sites	-	-	-	-
Subtotal Drop-Off	2,283	3,049	4,133	5,667
Total Revenue Tons	100,119	120,192	146,382	181,192

Notes: 1 Estimated based on historical growth patterns between 2000 and 2003.

Based on these identified trends, the tonnage growth rates shown in Table 18 were used for the base case future rate projections, although these tonnages are higher than the values contained in the Draft Comprehensive Solid Waste Plan. Therefore, rate sensitivity will be tested to determine the impact of lower waste deliveries during the rate setting process.

Modeling Assumptions

In preparation of this report and the rate setting model, HDR used and relied upon economic data provided by the County, and made certain assumptions with respect to future economic impacts from cost escalation, normal equipment repair and replacement events and historical expense patterns. The 2006 budget basis for a rate study analysis also includes \$1.5 million for equipment replacement taken from reserves. While these assumptions are reasonable for the purpose of this report, to the extent that actual future conditions differ from those assumed herein or provided to us by others, the actual results will vary from those forecast.

The Solid Waste Section revenue and expense projections set forth in Table 16 are based upon contractual commitments and cost estimates discussed throughout this report. A summary of the principal assumptions utilized in preparing the Solid Waste Section revenue and expense projections is set forth below, and a statement of detailed assumptions are defined in the rate model. We reviewed these assumptions and believe all to be reasonable, based on information available to us at the time this report was prepared.

- The respective obligations of the County, Municipalities, Ecology, Skagit River Steel & Recycling, Inc., Rick's Refrigeration, Larry's Auto, Recycle Systems LLC, and RDC, as set forth in various System contracts and agreements, will not change throughout the rate setting period and will be extended with similar terms throughout the planning period, subject to the assumed escalation. We have made no determination as to the validity or enforceability of any ordinance, contract, rate order, agreement, rule, or regulation applicable to the System and its operations.

- All licenses, permit renewals and approvals necessary to operate the System components will be affirmed, issued, approved or obtained on a timely basis without any substantial changes in System operation requirements or to any additional programs, facilities or programs.
- The current mechanisms directing the flow of waste in the County will remain effective and enforced throughout the term of the planning period, and the Cities and County will direct sufficient solid waste to the System to economically operate the individual System components.
- The amount of solid waste generated in the County and delivered to the System will not vary substantially from the waste quantity estimates contained in the rate model.
- The level of recycling, waste reduction and hazardous waste diversion which occurs in the County will be consistent with historical patterns.
- The County will continue to operate and maintain the RTS and Remote Drop-Sites in accordance with generally accepted engineering practices and in a sound and business-like manner.
- Changes in environmental laws, regulations, and enforcement policies will not occur which will have a material adverse effect on future System revenues, operating expenses, or capital expenditures. The EPA, Ecology, or WUTC will not affect any regulatory changes that will adversely impact the System.
- No additional taxes will be imposed on the System and current tax rates will not increase substantially above the existing levels. The 3.6% State refuse tax is added separately to the System tipping fees, which is not shown as a revenue or expense of the System.
- The County will fund future fixed equipment replacements and major repairs, as necessary, through the use of established reserve funds. The County will replenish the reserve funds through appropriate tip fee increases to maintain adequate monies for operating cash flow reserves, future fixed equipment replacements and major repairs, rate stabilization, uninsured risks, and potential environmental liabilities with the old waste disposal sites.
- The County will continue to receive a Coordinated Prevention Grant and Litter Grant from Ecology throughout the planning period at the levels currently anticipated by the County.
- The tipping fee structure for solid waste delivered by municipalities at a reduced tipping fee and solid waste delivered by private haulers and self-haulers to the RTS and Remote Drop Sites will be maintained throughout the planning period at the \$1 per ton higher tip fee.
- The projected rates of escalation applied to expenses and revenues reasonably reflect actual levels of inflation and the prevailing conditions of the economy.

Base Case Model

Table 17 shows the projected 2006 tipping fee required to meet projected solid waste system expenses as \$87.00 per ton for municipal customers and \$88.00 per ton for private firms and individuals self-hauling to the RTS and remote drop sites. Annual allocations to reserves are included as a system expense in order to support future withdrawals from reserves for major transfer station repairs and fixed equipment

purchases. The Base Case rate model is structured based on the current system configuration and methods of operation.

The annual tipping fees reflect the annual escalation of expenses, debt service payments, periodic capital outlays, other sources of revenue, and waste quantity projections. The tipping fee calculated for 2007 is lower than year 2006 due to a reduction in the debt service payment of approximately \$180,000. Based on the projected annual tipping fee revenues and waste quantities, average tipping fees for a three-year period and five-year period are provided in Table 17. The tip fee increase over the 2005 rate is \$5.00 per ton and \$5.90 per ton, respectively. In the initial years of an average tipping fee period, excess revenues are accumulated in a rate stabilization reserve fund to pay for escalation of expenses in the final years.

The Model contains the specific assumptions utilized to calculate the projected revenues, expenses, and tipping fees. These tipping fees will vary from projections as Skagit County adjusts assumptions, as necessary, to meet changing conditions and with implementation of any of the improvement options listed in Chapter 5.

Table 17- Tip Fee Model (Base Case)

	2006	2007	2008	2009	2010
Solid Waste Quantities					
Municipal Tonnage	39,351	40,525	41,736	42,986	44,276
Individuals/Private Firms	61,993	64,458	67,099	69,892	72,867
Remote Drop-Offs	2,416	2,558	2,711	2,874	3,049
Total Revenue Tons	103,760	107,541	111,546	115,752	120,192
Revenues					
Municipal Fees ¹	\$3,423,567	\$3,513,536	\$3,639,413	\$3,799,973	\$3,984,813
Individuals/Private Firms ¹	\$5,455,391	\$5,652,980	\$5,918,163	\$6,248,358	\$6,630,910
Remote Drop-Offs ¹	\$212,573	\$224,335	\$239,068	\$256,933	\$277,471
Other Revenues ²	\$340,107	\$306,200	\$310,200	\$315,200	\$321,200
Total Revenues	\$9,431,638	\$9,697,052	\$10,106,844	\$10,620,464	\$11,214,394
Expenses					
Operating Costs ³	\$7,248,795	\$7,664,111	\$8,109,549	\$8,586,552	\$9,098,277
Capital Outlays	\$1,671,000	\$20,000	\$212,000	\$20,000	\$139,000
Debt Service	\$1,077,060	\$895,113	\$779,563	\$779,625	\$782,950
Interfund Transfers ⁴	\$783,693	\$807,306	\$854,177	\$883,803	\$925,331
Total Expenses	\$10,780,548	\$9,386,529	\$9,955,289	\$10,269,980	\$10,945,558
Expense Accruals to Reserves⁵	\$304,450	\$312,850	\$340,850	\$350,550	\$390,350
Net Revenues/(Expenses)⁶	(\$1,653,360)	(\$2,328)	(\$189,295)	(\$66)	(\$121,514)
Tip Fee Projections					
Municipal Tip Fee (\$/Ton)	\$87.00	\$86.70	\$87.20	\$88.40	\$90.00
	\$87.00 per Ton (3-Year Average)				
	\$87.90 per Ton (5-Year Average)				
Individuals/Private Tip Fee (\$/Ton)	\$88.00	\$87.70	\$88.20	\$89.40	\$91.00
	\$88.00 per Ton (3-Year Average)				
	\$88.90 per Ton (5-Year Average)				

Notes:

- ¹ Annual tip fee multiplied by tonnage.
- ² Other Revenues include appliance recycling fees, grants, moderate hazardous waste fees, interest earnings, and miscellaneous revenues.
- ³ Operating Costs include salaries and wages, personnel benefits, supplies, and other services and charges.
- ⁴ Inter-fund Transfers include external taxes/op assessment and inter-fund payments for services.
- ⁵ Expense Accruals to Reserves assumes payments to reserves for depreciation, annualized major equipment replacements and repairs, and escalation increases on operating cash flow and environmental liability reserves.
- ⁶ Net Revenues/(Expenses) equal to Total Revenues minus Total Expenses minus Expense Accruals to Reserves. Monies from reserves are anticipated to be utilized to cover any net expenses.

CHAPTER 5 – FINDINGS AND CONCLUSIONS

SUMMARY OF EVALUATIONS

Based on our evaluation of the County system and the budget and rate comparisons, the County Solid Waste Section is efficient and competitive when compared with other operating systems in the region. The results of the survey indicate customers of the County system are satisfied with the services they receive. The system operating costs and tipping fees (user charges) when compared with the other municipality-operated and privately-operated systems in the region are competitive when compared on a service component basis. The existing pre-load compactor is in need of immediate replacement and upgrading in order to handle the anticipated annual waste delivery increases over the remaining term of the agreement with RDC (2013) and debt amortization period (2015).

Recycling and Transfer Station Capacity

An evaluation of the RTS processing capacity indicates that although the receiving capacity at the scale facility is adequate for commercial waste haulers through 2015 based on the anticipated waste increases, the growth in self-hauler deliveries has begun to create congestion at the scale facility. Some modifications to the traffic flow patterns at the site are necessary to alleviate this problem.

The RTS evaluation also indicates that the three unloading bays and storage capacity at the RTS are sufficient to handle the commercial haulers deliveries of waste through 2015 as long as the self-haul traffic is handled at a separate unloading location. However, if the self-haul traffic continues to increase at the current growth rates additional self-haul unloading capacity may be required to handle this in the future. Currently all refuse from self-haul customers is double handled because refuse delivered to the remote sites is hauled to the RTS then dumped on the tipping floor and, at the RTS, self-haul customers unload into 40 cubic yard open top trailers which are then hauled to the tipping floor. The County should evaluate methods to reduce the amount of self-haul deliveries and consider reconfiguring the transfer building to allow some self-haul customers to unload on the tipping floor, in order to reduce the double handling costs for this waste stream.

The RTS load-out capacity is controlled by the crane and pre-load compactor processing capacity and the number of operating hours for this function. The current configuration can handle an average of 38 tons per hour. An automated crane with a larger capacity grapple could increase this handling capacity to 64 tons per hour. Because the compactor needs to be replaced anyway, a larger capacity compactor should be considered for the replacement. Due to seasonal fluctuation in weekly waste deliveries, the design capacity for a facility of this type is usually based on a maximum of 20 hours per day of operations. Since there is only one compactor with no redundancy for maintenance and repairs of equipment, operating at this level for any extended period of time is not advisable and would increase staffing requirements and maintenance costs. Therefore a more conservative maximum operating time of 16 hours per day should be considered if hours of operation are increased. With these types of changes, the RTS could continue to process the currently projected solid waste deliveries at least until 2013 (the end of the RDC contract).

A previous study conducted in 2002 identified facility modifications that could increase the capacity of the current RTS and extend the serviceable life of the facility. One option that was not considered in that study was the installation of a side-loading pre-load compactor, which could allow for direct loading of the compactor with a loader and

eliminate the crane entirely. This option should be evaluated as soon as possible so as not to impose an extensive delay in the procurement of a new pre-load compactor.

Fee Comparison

A comparison of the cost of solid waste services and tipping fees in Skagit County with the costs of the same services provided by other counties in the region shows that Skagit County is very competitive. The comparison included the publicly-operated King County and Snohomish County operations and privately-operated Whatcom County operations. This comparison indicated that the Skagit County costs, at approximately \$9.27 per ton for transfer station operations, appear to be the lowest of the four counties for this component of the tipping fee. The King County and Skagit County tipping fees vary only by a few cents, even though King County's disposal cost is approximately \$10 dollars less. Snohomish County tipping fees are approximately \$5 higher than Skagit County's even though their rail-haul and disposal cost is approximately \$8 less than Skagit's. The Whatcom tipping fee structure does not include any debt service for the transfer station facilities, which are leased by the county to the private operator. This lack of debt service, higher inter departmental charges and the higher tipping fee charges for self-haul waste are the primary differences in the comparison of the reported tipping fees in Whatcom County.

IMPROVEMENT OPPORTUNITIES

During the course of this efficiency-rate study, several items were identified that could improve the system if implemented and provide a more cost effective operation. The opportunities are presented in three categories:

- **Equipment Replacement**

These recommendations relate to equipment replacements in the normal course of business.

- **Capital Improvements**

These recommendations require higher levels of investment, and will bring the greatest long-term benefits to the system.

- **Operational Efficiency Improvements**

These improvements require small, and in some cases no levels of investment, but most require policy decisions prior to implementation.

The opportunities are discussed in their order of importance, based on their ability to have an immediate and cost effective versus a longer term impact on the system efficiency.

Equipment Replacement

The recommended equipment replacements consist of the following:

- **Compactor Replacement**

The current transfer station is approaching its handling capacity based on the capacity analysis. One of the primary constrictions is the current pre-load compactor. It has reached the end its useful life and therefore should be replaced immediately, preferably with a higher capacity model. The use of a side-load compactor should be considered to reduce the loading height differential and minimize costs of a retrofit.

- **Modification/Change to Compactor Loading Method**

The other primary constriction to handling capacity at the current transfer station is the use of a crane to load the compactor. The County has several options to consider that would relieve this constriction:

- Extend the operating hours, using the current crane.
- Replace the current crane with a faster crane.
- Reconfigure the station to eliminate the need for the crane. This could be accomplished by filling the pit and installing a side-load compactor, reducing the loading height differential.

Capital Improvements

The following capital improvements are recommended for consideration:

- **Traffic Flow Changes at the RTS**

Reconfigure traffic flow at the RTS, as the traffic-crossing patterns at the site cause congestion and delays in scale operations and result in traffic back-ups on to Ovenell Road.

- **Allow More Self-Haul Traffic to Dump on the Tipping Floor**

Re-configure the RTS to allow more of the self-haul traffic to direct dump on the tipping floor to reduce the need to manage the waste containers at the RTS drop-off area. This might be accomplished by demolition of the back wall of the pit area to allow dumping on both sides of the pit.

- **Relocate a Recycling Drop-Off Location to Minimize Transfer of Loads**

Relocate one of the RTS recycling drop-off locations adjacent to the recycling market to reduce the need to transfer the recyclable loads.

Operational Efficiency Improvements

The County has several short-term opportunities available to improve operational efficiency, which principally require a reassessment of the customer service priorities that are currently in place. HDR recommends the first recommendation be resolved immediately, as it does not impact customers or level of service. The majority of the opportunities listed in this section require policy decisions regarding the level and value of service to customers, and should be discussed by the municipalities and Board of County Commissioners before any implementation decisions are made.

- **County Transport of Remote Site Waste**

Negotiate new terms with Waste Management or begin using County equipment and staff to transport the waste from the remote drop-off sites (Clear Lake and Sauk) to the RTS. Based on the late 2004 rate increase by the current franchise hauler, this could result in substantial savings for the County.

- **Change Self-Haul Hours at the RTS**

Change the hours of operation at the RTS for the self-hauler traffic (e.g., 11:00 am to 6:00 pm) and consider installation of an automated scale operation for the commercial accounts, using a bar code reader or radio frequency reader. This would allow a reduction in scale operator staffing. Transfer station operators would still be

on-site to monitor vehicle access. The cost for installation of the equipment to implement this type of system is in the range of \$20,000 to \$30,000. Customers would need to equip their vehicles with the appropriate bar codes or radio frequency tag devices in order to participate.

- **Increase Small-Load Self-Haul Rates**

Increase the rate charged for small-load, self-hauled vehicles to be more in-line with the actual costs resulting from providing this service. The cost for handling self-haul waste on a per ton basis is more than twice that of the waste delivered by commercial haulers. The self-haul customer is avoiding the collection cost charges by delivering to the drop-off sites and should pay at least a portion of the costs for this additional service. Increasing the rates would encourage these self-hauler customers to contract with the franchise hauler, which could reduce the customer transactions and scale house staffing requirements.

- **Decrease Hours of Operation at the Clear Lake Site**

Re-evaluate the hours of operation at the Clear Lake site, which handles less than half of the tonnage volume that the Sauk site handles, but has considerably more hours of operation.

- **Eliminate Yard Waste Drop-Off at the RTS**

Discontinue accepting yard waste at the RTS facility and require that those loads be delivered directly to the nearby composting site instead.

- **Establish Reserve Fund Sub-Accounts**

Establish sub-accounts under the reserve fund in order to better track the adequacy of reserve amounts in relation to escalation factors and changes in future needs.

- **Maintain a Reserve Fund for an Additional Landfill**

In addition to budgeting for maintenance of three closed landfills, the County should maintain a reserve fund of sufficient size to enable it to cover its potential liability for costs that might arise during a typical budget year, such as installing monitoring wells and meeting first-year monitoring and reporting requirements, for at least one additional site.

Appendix A

SKAGIT COUNTY FACILITY STAFFING SCHEDULE

SKAGIT COUNTY DROP-OFF STAFFING SCHEDULE

Monday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									
Tuesday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									
Wednesday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									
Thursday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									
Friday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									
Saturday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									
Sunday			6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Sauk	Operator																									
	Part-Time Oper.																									
	On-Call																									
Clear Lake	Operator																									
	Part-Time Oper.																									
	On-Call																									



SKAGIT COUNTY RTS STAFFING SCHEDULE

Monday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Sale Operator										10 - Hour Shift														
	PT Scale Operator											8 - Hour Shift													
	TS Tech												8 - Hour Shift												
	TS Tech													8 - Hour Shift											
	TS Tech														8 - Hour Shift										
	Driver															8 - Hour Shift									
	Mechanic																8 - Hour Shift								
	TS Tech																	8 - Hour Shift							
	TS Tech																		8 - Hour Shift						
	TS Tech																			8 - Hour Shift					
Tuesday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Sale Operator										10 - Hour Shift														
	PT Scale Operator											8 - Hour Shift													
	TS Tech												8 - Hour Shift												
	TS Tech													8 - Hour Shift											
	TS Tech														8 - Hour Shift										
	Driver															8 - Hour Shift									
	Mechanic																8 - Hour Shift								
	TS Tech																	8 - Hour Shift							
	TS Tech																		8 - Hour Shift						
	TS Tech																			8 - Hour Shift					
Wednesday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Sale Operator										10 - Hour Shift														
	PT Scale Operator											8 - Hour Shift													
	TS Tech												8 - Hour Shift												
	TS Tech													8 - Hour Shift											
	TS Tech														8 - Hour Shift										
	Driver															8 - Hour Shift									
	Mechanic																8 - Hour Shift								
	TS Tech																	8 - Hour Shift							
	TS Tech																		8 - Hour Shift						
	TS Tech																			8 - Hour Shift					
Thursday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Sale Operator										10 - Hour Shift														
	PT Scale Operator											8 - Hour Shift													
	TS Tech												8 - Hour Shift												
	TS Tech													8 - Hour Shift											
	TS Tech														8 - Hour Shift										
	Driver															8 - Hour Shift									
	Mechanic																8 - Hour Shift								
	TS Tech																	8 - Hour Shift							
	TS Tech																		8 - Hour Shift						
	TS Tech																			8 - Hour Shift					
Friday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Sale Operator										10 - Hour Shift														
	PT Scale Operator											8 - Hour Shift													
	TS Tech												8 - Hour Shift												
	TS Tech													8 - Hour Shift											
	TS Tech														8 - Hour Shift										
	Driver															8 - Hour Shift									
	Mechanic																8 - Hour Shift								
	TS Tech																	8 - Hour Shift							
	TS Tech																		8 - Hour Shift						
	TS Tech																			8 - Hour Shift					

SKAGIT COUNTY RTS STAFFING SCHEDULE (CONTINUED)

Saturday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Scale Operator																								
	Scale Operator																								
	PT Scale Operator																								
	PT Scale Operator																								
	TS Tech																								
	TS Tech																								
	TS Tech																								
	TS Tech																								
	Driver																								
	Mechanic																								
TS Drop-	TS Tech																								
	TS Tech																								
	TS Tech																								
	TS Tech																								
	Driver																								
Sunday		6:30	7:00	7:30	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	13:00	13:30	14:00	14:30	15:00	15:30	16:00	16:30	17:00	17:30	18:00
Transfer Station	Scale Operator																								
	Scale Operator																								
	PT Scale Operator																								
	PT Scale Operator																								
	TS Tech																								
	TS Tech																								
	TS Tech																								
	TS Tech																								
	Driver																								
	Mechanic																								
TS Drop-	TS Tech																								
	TS Tech																								
	TS Tech																								
	TS Tech																								
	Driver																								

Appendix B

CUSTOMER SURVEY SUMMARY

Labor Union Representative Questions

Probe for information when the rating is a 1 or 2.

1 = Very Dissatisfied, 2 = Somewhat Dissatisfied, 3 = Neutral, 4 = Somewhat Satisfied, 5 = Very Satisfied, 0 = No Opinion	1	2	3	4	5	0
1. How satisfied are your members with the opportunities they've had to develop skills that will help them in their current positions? <i>Comments:</i> 1) The Public Works management is very supportive of the workers. Two of the commissioners want out of the business and are not supportive of spending money to upgrade equipment, which limits how much skills development is available to the members. 2) No Comments.				4		
2. How satisfied are your members with the opportunities they've had to develop skills that will help them advance? <i>Comments:</i> 1) Same comments as question 1. Only have 2 ranges for transfer site technicians: Range 9, the range for the majority of the technicians (currently 5 to 6 employees); Range 12, Lead Technician – there is one lead. Therefore, there is not a lot of opportunity due to the organization structure. 2) There is not much opportunity for advancement due to very few jobs to move in to (only driver positions and 1 lead position). But people have moved up when the opportunity arose.			3			
3. How satisfied are your members that the equipment, tools, supplies and physical work environment where they work allow them to be productive? <i>Comments:</i> 1) Would be able to say very satisfied if the commissioners would spend money on newer equipment. 2) Both high and low points. There are some places the County has done well, like the new armature for the crane. But in other areas there is less political will to fund new equipment.			3.5			
4. How satisfied are your members with the safety of their work environment? <i>Comments:</i> 1) Doesn't hear of problems, and is on the safety committee. 2) No comments.				4		
5. How satisfied are your members with the safety training and safety equipment available in the workplace? <i>Comments:</i> 1) No comments. 2) There is not too much opportunity for safety training, but they have received whatever safety equipment is requested. A recent example is the welder requested and received a respirator.				4		

1 = <i>Very Closed</i> , 2 = <i>Slightly Closed</i> , 3 = <i>Neutral</i> , 4 = <i>Somewhat Open</i> , 5 = <i>Very Open</i> , 0 = <i>No Opinion</i>	1	2	3	4	5	0
6. How open is your organization to new ideas that improve the way your members work? <i>Comments:</i> 1) If it was all up to the Public Works management, the rating would be a 5, Very Open. 2) He couldn't think of a time when this came up.				4		
				✓		✓
1 = <i>Very Uncooperative</i> , 2 = <i>Somewhat Uncooperative</i> , 3 = <i>Neutral</i> , 4 = <i>Somewhat Cooperative</i> , 5 = <i>Very Cooperative</i> , 0 = <i>No Opinion</i>	1	2	3	4	5	0
7. How cooperatively does management and your union leadership work together to solve mutual problems? <i>Comments:</i> 1) Rating is for Public Works management. 2) No comments.					5	
					✓	✓
1 = <i>Very Dissatisfied</i> , 2 = <i>Somewhat Dissatisfied</i> , 3 = <i>Neutral</i> , 4 = <i>Somewhat Satisfied</i> , 5 = <i>Very Satisfied</i> , 0 = <i>No Opinion</i>	1	2	3	4	5	0
8. How would you rate the satisfaction of your members in regard to union negotiations being conducted in an atmosphere of mutual trust and respect? <i>Comments:</i> 1) Because it's a smaller group, the members don't think they're represented as well as the larger groups at the County. 2) The members have normal feelings regarding negotiations, but nothing specific to issues at the transfer station.			3.5			
				✓		
			✓			
9. How would you rate the satisfaction of your members in regard to labor issues raised by the union being addressed reasonably? <i>Comments:</i> 1) No comments. 2) No comments.				4		
				✓		✓
1 = <i>Very Dissatisfied</i> , 2 = <i>Somewhat Dissatisfied</i> , 3 = <i>Neutral</i> , 4 = <i>Somewhat Satisfied</i> , 5 = <i>Very Satisfied</i> , 0 = <i>No Opinion</i>	1	2	3	4	5	0
10. How would you rate the satisfaction of your members in regard to worker training programs being implemented on a reasonable schedule? <i>Comments:</i> 1) No comments. 2) They don't have many instances where a training program applies.						0
						✓
						✓
11. How would you rate the satisfaction of your members in regard to the County providing a good program for workplace hazard minimization? <i>Comments:</i> 1) No comments. 2) The response of County management is they're willing to make accommodations and changes to help the employees.				4		
				✓		
				✓		

12. If there was one thing your members could change at the Skagit County solid waste operations, what would it be?

Comments:

- 1) The security of knowing the transfer station would stay in business, rather than the current environment of having the possibility of privatization weighting on their minds.
- 2) Overall long term security. The discussion about potential privatization has been going on for years (he thought as many as 10), so the employees always have an underlying concern about why it's being discussed and if they'll have a job next year.

13. If there was one thing your members could keep the same at the Skagit County solid waste operations, what would it be?

Comments:

- 1) The operation itself. The management is good and the structure is good.
- 2) The work atmosphere at the transfer station. Everyone enjoys working there. It's a great place to work.

Overall Comments:

- 1) No additional comments.
- 2) All the members like working at the transfer station, There are very few problems with the facility. There are never any grievances from the transfer station workers, and they never have labor/management issues like other County Departments. They just feel a bit under-appreciated, especially with the on-going discussion about potential privatization.

Cities and Waste Management Questions

The following questions relate to the services provided by the Skagit County Solid Waste Department at the transfer station and drop boxes.							
1. What County provided services does your organization utilize? <i>Comments:</i> 1) Contract for disposal; City trucks use tipping floor; All citizens have access to use county provided on-site services (yard waste, recycle, white goods, household hazardous waste, etc.) 2) Solid waste transfer. 3) The transfer station. 4) The transfer station, to dispose of all waste collected in the city. The residents use the Household hazardous waste disposal and self-haul. 5) Waste Management collects the MSW and recycling in the City of Burlington. Waste Management uses the County's transfer station for the MSW.							
1 = <i>Unsatisfactory</i> , 2 = <i>Below Expectations</i> , 3 = <i>Satisfactory</i> , 4 = <i>Above Expectations</i> , 5 = <i>Exceptional</i> , 0 = <i>No Opinion</i>		1	2	3	4	5	0
2. How you would rank the transfer station facility services? <i>Comments:</i> 1) For what they have out there, meaning the crane system and compactor, they do a really good job. 2) There is a lack of communication between his company and the County. There are only 3 bays for commercial garbage to be dumped on the tipping floor, and self-haul vehicles are often directed to the commercial bays, causing his trucks to wait. 3) Rank is for just the transfer station. He likes the service and believes they could make it better. 4) The crew does a great job, even without the needed improvements occurring at the transfer station. 5) The main problem is having commercial truck wait in line with the public self-haul before going across the scale. Would like to have a separate line for the commercial vehicles.			✓	3.8		✓	
1 = <i>Regular Long Waits</i> , 2 = <i>Occasional Long Waits</i> , 3 = <i>Intermediate Waits</i> , 4 = <i>Occasional Minor Waits</i> , 5 = <i>Short Waits</i> , 0 = <i>No Opinion</i>		1	2	3	4	5	0
3. How you would rank the transfer station services in terms of typical queuing and driver wait times? <i>Comments:</i> 1) Garbage trucks from the city almost never wait (4 trucks with staggered shifts). 2) Rated this a 2 to 3. The wait time depends on how many self-haul vehicles are at the transfer station. 3) No comments. 4) The rating is low because so much of the public self-haul traffic is being directed into the commercial bays. Would prefer more commercial doors being open. This is fixable, but they have noticed an increase in congestion in the last year. Also noted that increasing the hours of operation (open at 6 am instead of 8 am) has helped. 5) It depends on the time of day.			✓	3	✓		
			✓		✓		
			✓				
				✓			

4. Is the transfer station location adequate for the needs of your constituents and city disposal system? ☒ Yes ☐ No Comments: 1) The location is very adequate, and couldn't be better located within the county. 2) The location is great for them (about 2 ½ miles away from their shop). 3) The site at Clear Lake is very good for their city. 4) and 5) None.																																									
5. Are there any issues regarding the transfer station location that need to be addressed? ☐ Yes ☒ No Comments: 1) Can't think of any. It only takes 45 minutes round trip, which is good considering their distance from the transfer station. 2) No comments. 3) It is pretty centrally located for all of the County. 4) But it would make better sense if the multi-modal location (where the containers are loaded onto rail cars for waste export) was adjacent to the transfer station, so the containers didn't have to be hauled by truck. 5) None.																																									
6. Is there anything that the County could do to improve existing services at the transfer station? ☒ Yes ☐ No Comments: 1) Provide disposal for e-waste and mercury lamps. They do a good job with the services. The hours of operation are very good (6 am to 6 pm). They appreciate being able to hold a special collection event in their city that ends at 5 pm and still be able to take the waste to the transfer station on the same day 2) The County needs more commercial truck bays (places for commercial trucks to dump). The County should have 2 people in the scale house during all operating hours. 3) Don't let residents (self-haul) dump in the commercial areas (3 large bays for commercial trucks). Keep them in the designated self-haul area. 4) Spend some of the \$3.5 million available for improvements on the transfer station. Suggested splitting the facility into two, with separate areas for commercial and residential customers. Also noted the pit needs to be resolved – either filled in or some other disposition. Felt there should be some simple fixes that could be implemented. 5) They could improve existing services by providing separate lines to the scales (for commercial and self-haul) and keeping bays separated between commercial and the public.																																									
Please indicate your level of satisfaction with the following (#7 - #18)																																									
1 = <i>Unsatisfactory</i> , 2 = <i>Below Expectations</i> , 3 = <i>Satisfactory</i> , 4 = <i>Above Expectations</i> , 5 = <i>Exceptional</i> , 0 = <i>No Opinion</i>																																									
<table border="1"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>0</th> </tr> </thead> <tbody> <tr> <td>7. Acceptance of deliveries of MSW at the transfer station facility Comments: 1) He's had no trouble with any deliveries being accepted. 2) The County needs more commercial truck bays (places for commercial trucks to dump). The County should have 2 people in the scale house during all operating hours. 3) No comments. 4) The County staff has never refused a load. They have been given suggestions about the next time – being made aware of any problems so they can address them. 5) No comments.</td> <td></td> <td></td> <td>3.8</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td>✓</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>✓</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>								1	2	3	4	5	0	7. Acceptance of deliveries of MSW at the transfer station facility Comments: 1) He's had no trouble with any deliveries being accepted. 2) The County needs more commercial truck bays (places for commercial trucks to dump). The County should have 2 people in the scale house during all operating hours. 3) No comments. 4) The County staff has never refused a load. They have been given suggestions about the next time – being made aware of any problems so they can address them. 5) No comments.			3.8							✓		✓						✓	✓					✓			
	1	2	3	4	5	0																																			
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			✓		✓																																				
				✓	✓																																				
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8. Truck turn-around time (queuing time) at the transfer station facility <i>Comments:</i> 1) No comments. 2) Rated between a 2 and 3. 3) No comments. 4) The turn-around time could be improved. This comment is related to the self-haul being allowed in the commercial bays, discussed in question 3. 5) No comments.		✓	3.4 ✓ ✓ ✓	✓		
9. Accuracy of the weigh records <i>Comments:</i> 1) He's never had a question about the accuracy of the weigh records. 2) Experienced very few problems. 3) Minimal amount of mistakes, but they do happen. He suggested checking the records before billing. 4) They caught a couple of errors, and adjustments have been made with no problems (when they've given an explanation). The errors are rare, and have been fixed to everyone's satisfaction. 5) No comments.			4.2 ✓ ✓ ✓ ✓	✓		
10. Traffic control at the site <i>Comments:</i> 1) He hasn't seen any need for traffic control at the site. The drivers usually find an empty stall waiting, or have a very short wait to be directed to one. 2) The honor system is used for getting back on the scales to go out. 3) The self-haul issue mentioned in question 6. Suggested that keeping self-haul in their own area would help decrease the traffic congestion. 4) Traffic control is impacted by the self-haul issue mentioned before. So many people are jammed into the west side, and confusion about traffic patterns is common for self-haul drivers when using the commercial side. Stated better instructions could be given to the self-haul drivers and suggested they queue up for 1 of the commercial bays, rather than have access to all of them. The congestion costs them money in wait time. 5) The rating of 2 is the wait time, because of being combined with the public (self-haul) to get to the scales.		✓	3.2 ✓ ✓ ✓	✓		
11. Screening of unacceptable waste at the transfer station facilities <i>Comments:</i> 1) He's never had an issue with waste being refused. 2) The facility is limited to what they can take due to equipment constraints. 3) The County is pretty good about screening and telling them if something is a problem. 4) They haven't had to haul back anything. Stated it has mainly been		✓	3.6 ✓ ✓	✓		

appliances that a client put in a dumpster that couldn't be seen when collected. The County moves them to the white goods area and bills the City, who in turn bills the customer. This process works well for the City. Stated there is good communication about what is and isn't acceptable waste. 5) No comments.			✓			
1 = <i>Unsatisfactory</i> , 2 = <i>Below Expectations</i> , 3 = <i>Satisfactory</i> , 4 = <i>Above Expectations</i> , 5 = <i>Exceptional</i> , 0 = <i>No Opinion</i>	1	2	3	4	5	0
12. Safety record at the transfer station <i>Comments:</i> 1) No comments. 2) Rating is due to 1 incident (fatality). Since that happened, it has gotten better, but he still has some concerns. 3) Hasn't heard anything on the topic. 4) Aware the staff is trained for emergencies. Felt the current facility lay-out is a liability, which could be decreased by implementing common sense improvements like adding signage and putting existing signs in the right place, using better traffic control, and adding bumpers along the pit. 5) Can't think of any problems they've had.	✓	2.7				✓ ✓
13. Environmental compliance at the transfer station <i>Comments:</i> 1) The floor is kept as clean as possible. 2) No comments. 3) Hasn't heard anything on the topic. 4) As far as he can see, it's satisfactory. He is not aware of any compliance problems. The household hazardous waste collection has helped. He knows the County staff does what they can to manage the items brought to the transfer station. 5) No comments.			3.7			✓ ✓ ✓
14. Maintenance of the transfer station <i>Comments:</i> 1) Rating of 1 - given to the Commissioner's due to lack of funding for equipment upgrades. Rating of 5 – given to Skagit County staff for keeping everything running. They do a great job with what they've got. 2) He did not have an opinion on the maintenance of the current equipment, but stated the equipment needs upgrading. 3) The County needs to maintain their equipment to get the most out of it, and the Commissioners need to provide budget to allow the maintenance recommended by staff. Suggested the staff be empowered to make the maintenance choices and given enough budget to perform the required maintenance. 4) It is far too muddy/dirty outside the bays. Stated the County doesn't clean the slab often enough, both in front of and inside the bays. The concrete inside the building needs to be replaced or refinished. 5) If the crew could do what they wanted without influence of the politics, his satisfaction rating would be higher.	✓ ✓	2.4			✓	✓

15. Accuracy of invoices <i>Comments:</i> 1) The city hasn't had a problem. The tonnage is always correct. 2) He hasn't had many problems, but occasionally the staff keys in the wrong truck. 3) Could be a bit more diligent on accuracy reviews before billing. 4) Noted there have been a couple of mistakes that were fixed easily. 5) Never had any problems.				4	2	
				✓	✓	
				✓		
				✓		
				✓		
1 = <i>Unsatisfactory</i> , 2 = <i>Below Expectations</i> , 3 = <i>Satisfactory</i> , 4 = <i>Above Expectations</i> , 5 = <i>Exceptional</i> , 0 = <i>No Opinion</i>	1	2	3	4	5	0
16. Value of services provided <i>Comments:</i> 1) The county provides great services for the community; funding education, flood clean-up, hazardous waster, etc. from the rates. 2) No comments. 3) Very happy with the hazardous waste program, free recycling, etc. It is keeping the city clean, and he's seen a decrease in the illegal dumping. 4) All eight cities use the transfer station. The City counts on a stable, cost competitive, and efficient facility. 5) No comments.				4		
					✓	
			✓			
				✓		
				✓		
				✓		
17. Skagit County's ability to work out problems, including uncontrollable circumstances <i>Comments:</i> 1) Staff does really well with what they have to work with, and don't get any recognition. The staff always ends up getting the garbage moved, no matter what happens to equipment, etc. 2) Rating is due to poor communications, both internally (within the County) and with his company. 3) Staff at the transfer station does whatever they can to ensure the garbage is processed. 4) Rated low due to the politics. If there were no politics involved, he felt it would be well run. Noted the staff at the facility is willing to work out anything. Feels the Commissioners are not supporting improvement in a way to solve problems. Noted the increased hours (from 6 am to 8 am) allows them to do service roll-offs. 5) Would like to say the rating would be a 2, due to politics in the last several years, but stated staff does a good job, but is not getting what they need.			3			
		✓			✓	
			✓			
		✓				
			✓			
18. Skagit County's timeliness in responding to issues of concern <i>Comments:</i> 1) He calls Gary with any concerns and gets immediate/same day response. 2) The County has needed to upgrade both the equipment and the whole site for a long time. 3) Staff isn't empowered enough to get things done in a timely manner. 4) The rating is for everything operationally, but not for any monetary			3			
		✓			✓	
		✓				
				✓		

improvement. Noted the recommendations from 1995, 1998 and 2001 efficiency studies have not been given any funding. 5) Political issues have been holding thing up. Maintenance has been deferred, and the Comp Plan is taking too long.		✓				
19. In your opinion, does Skagit County live up to its contractual commitments? ☒ Yes ☐ No If no, please describe your reasons for this rating <i>Comments:</i> 1) No comments. 2) The County does the best they can with what they have. 3) Right now they have. 4) No comments. 5) No comments.						
20. Overall, are you satisfied with the service provided by Skagit County? ☒ Yes AND ☒ No If not satisfied with Skagit County's service, please describe your reasons for this rating <i>Comments:</i> 1) No comments. 2) Yes, as County does the best they can with what they have. AND No, as there is so much work that needs to be done to the site to adequately handle all the solid waste that comes to the County. 3) No comments. 4) Supports the efforts of staff and crew at the transfer station. 5) No comments.						
21. If price and terms were satisfactory, would you be willing to continue to have your community's non-recycled MSW processed by Skagit County? ☒ Yes ☐ No If not willing to continue with Skagit County's transfer service, please describe your reasons for this rating. <i>Comments:</i> 1) Definitely 2) No Opinion 3) No comments. 4) No comments. 5) No comments.						
22. Other comments, issues, testimonies or concerns related to the services provided by Skagit County. <i>Comments:</i> 1) He has done a lot of research on other transfer stations in the area, including the rates they charge and the services they provide, and fees the County is right in there for the amount they charge, and have even lower rates when you consider how much they deliver in the way of services. 2) No other comments. 3) No other comments. 4) Nothing additional. 5) None.						

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23. Do you see a value to the other non-garbage programs provided by Skagit County to your community? a) Education b) Litter Control Program c) Illegal Dumping Program d) Recycling e) Household Hazardous Waste f) Landfill Environmental Monitoring Program <i>Comments:</i> 1) He has done a lot of research on other transfer stations in the area, including the rates they charge and the services they provide, and fees the County is right in there for the amount they charge, and have even lower rates when you consider how much they deliver in the way of services. 2) N/A 3) Believes they are an instrumental part of the solid waste plan for keeping the County clean, especially the Hazmat services. Noted that without them, "dirty" things, like oil and paint, make their way into the landfills. 4) The programs have been good. The County Commissioners should work with the service provider (Waste Management) to extend curbside recycling to a bigger area in the rural County. Stated expand the footprint, but understands it's not yet feasible for the curbside recycling throughout the entire County 5) Would like to see the Household Hazardous Waste open on a weekly basis, rather than the current 1 week per month. (Not a question for Waste Management)		1	3 2 1 2 1 1	1 2 2 1 1	1 1 2 1	1	3.25 3.5 4 3.33 4.25 4.33
24. Is your community committed to continued support of these services? ☒ Yes ☐ No ☐ Not applicable If no, please identify which services and why not <i>Comments:</i> 1) No comments. 2) N/A 3) No comments. 4) No comments. 5) No comments. (Not a question for Waste Management)							
25. Other comments, issues, testimonies or concerns related to the services provided by Skagit County as they pertain to these other Solid Waste Management services. <i>Comments:</i> 1) No Comments. 2) N/A 3) He believes they have to keep the services at least at the current level. 4) Need to continue funding these services, and expand them wherever possible. 5) No comments. (Not a question for Waste Management)							

The following questions are about your vision and opinions about continued relationships with Skagit County upon expiration of the current interlocal agreement in 2014.						
1 = <i>Strongly Disagree</i> , 2 = <i>Disagree</i> , 3 = <i>Neutral</i> , 4 = <i>Agree</i> , 5 = <i>Strongly Agree</i> , 0 = <i>Don't Know</i>	1	2	3	4	5	0
26. The current regional approach to solid waste management has been beneficial to my community. <i>Comments:</i> 1) He doesn't agree with the new Comp Plan Chapter 7 provisions to open a second transfer station, but does agree with everything else in the new Comp Plan (stated it's "a great plan"). 2) N/A 3) He rated it a 2 as he disagrees with the inclusion of the second transfer station in the approach. He feels if it's not broken, it doesn't need fixing. As the plan is OK otherwise, he would rate the rest of the plan a 4. 4) None. 5) None. (Not a question for Waste Management)				4.2		
1 = <i>Strongly Disagree</i> , 2 = <i>Disagree</i> , 3 = <i>Neutral</i> , 4 = <i>Agree</i> , 5 = <i>Strongly Agree</i> , 0 = <i>Don't Know</i>	1	2	3	4	5	0
27. Continuing the regional approach to solid waste management after the current interlocal agreement expires in 2014 will be beneficial to my community. <i>Comments:</i> 1) Any time you can pool resources for one facility, it gives everyone more bang for the buck. 2) N/A 3) He thought that after 2014 it should open a new round of discussions on what should happen next. 4) Anytime they can pool tonnages together, whether at the Cities or County level, they all benefit. Knows the tip fees will go up over time. Next time would like to see a broader audience; include Counties, not just Cities. Noted they voted 54 to 1 to stay with the current co-system, and would like to extend that thought process to joining with other Washington Counties for waste export tonnage pricing. 5) Their Mayor says as long as the debt is in place, but once it's gone, it should be opened up to competition (which would include the County begin able to bid on the work). (Not a question for Waste Management)				4		