



TG-120408

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

March 22, 2012

Mr. Dave Danner  
Washington Utilities and Transportation Commission  
1300 South Evergreen Park Drive SW  
PO Box 47250  
Olympia, WA 98504-7250

STATE OF WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION  
2012 MAR 23 AM 8:08  
COMMUNICATIONS SECTION

Dear Mr. Danner:

Please forward the following to Ms. Penny Ingram:

The Department of Ecology has received copies of the *Thurston County Draft 2012 Solid Waste Management Plan* on March 8, 2012. Pursuant to Section 70.95.096, we are forwarding two copies of this draft local comprehensive solid waste management plan for WUTC review. The Cost Assessment for recommended programs is contained in Appendix F.

The county contact person for this plan is:  
Terri Thomas, Education and Outreach Specialist  
Thurston County Department of Public Works  
2404-A Heritage Ct. SW  
Olympia, WA 98502  
Phone: (360) 754-4580  
thomaste@co.thurston.wa.us

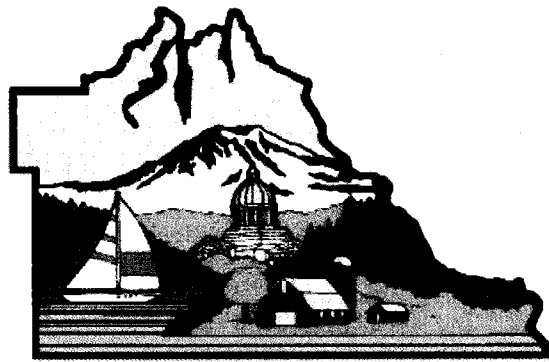
For questions to the Department of Ecology on this plan, please contact:  
Mike Drumright  
Waste 2 Resources Program  
Southwest Regional Office  
PO Box 47775  
Olympia, WA. 98504-7775  
Phone: (360) 407-6397 Fax: (360) 407-6305, E-mail: [mdru461@ecy.wa.gov](mailto:mdru461@ecy.wa.gov)

Sincerely,

Mike Drumright  
Solid Waste Planner  
Waste 2 Resources Program

Enclosures





**THURSTON COUNTY**

**WASHINGTON**

**SINCE 1852**

Draft Solid Waste Management Plan  
Request for Department of Ecology Review  
Preliminary Draft Review

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March 8, 2012



2012 MAR 23 AM 8:08

STATE OF  
WASHINGTON  
COUNTY

COUNTY COMMISSIONERS

Cathy Wolfe  
District One

Sandra Romero  
District Two

Karen Valenzuela  
District Three



**PUBLIC WORKS**  
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American Public Works Association

Lester Olson  
Director

Dear Mr. Drumright:

**SUBJECT: Thurston County Draft Solid Waste Management Plan (SWMP) request for Department of Ecology (Ecology) review, Preliminary Draft review**

At this time, Thurston County would like to request Ecology's preliminary review of the County's draft SWMP. To that end, enclosed are the following items as required per SWMP guidelines:

- This letter of request for review of the preliminary draft SWMP
- Three (3) hard copies of the SWMP
- The WUTC cost assessment, which was completed in 2011 (Appendix F)
- Copies of interlocal agreements (Appendix G) with participating cities in Thurston County. As of this submittal, we have not received agreements from the cities of Olympia or Lacey. The documents will be forwarded once received by the County and included in the final SWMP
- SEPA compliance review (Appendix H)
- Thurston County Solid Waste Advisory Committee (SWAC) meeting agendas and meeting minutes for March, May and September 2008 indicating participation, discussion and presentation concerning the development of the draft SWMP

We have also enclosed two CD's of the above documents for your convenience.

The Preliminary Draft was submitted on January 26, 2010. Unfortunately, Ecology reviewed the Assessment used to draft the SWMP (Appendix A), rather than the actual SWMP. In addition, an incorrect version of the SWMP was submitted. After discussing these issues with you, it was agreed that we would be permitted to resubmit the preliminary draft for review. We have also provided an updated WUTC assessment, as requested.

Please note, this SWMP draft is still for the years 2009-14. While we have not completed adoption of the SWMP, we have been diligently working on the tasks it contains and are on schedule. We will review the SWMP again in 2014, as required, to determine if an update or amendment is needed.

Thank you for taking this time to review our draft SWMP document. For our records, please provide me with an email or written notification of receipt.

Sincerely,

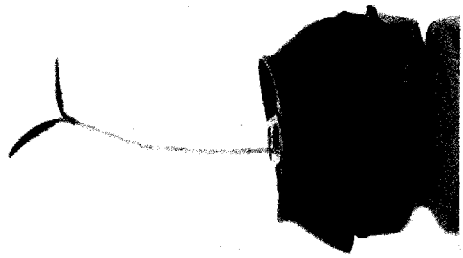
A handwritten signature in black ink, appearing to read "Terri Thomas". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

Terri Thomas  
Education and Outreach Specialist III

Attachments

Thurston County

# Solid Waste Management Plan



“Working together to preserve and enhance the quality of our community’s environment.”

*Thurston County Solid Waste  
Mission Statement*

“To provide quality, timely and responsible service to the residents of Thurston County in the most cost-effective manner.”

*Thurston County Mission Statement*

## ACKNOWLEDGMENTS

The Thurston County Solid Waste Management Plan was prepared by a team consisting of Thurston County Solid Waste staff, the Solid Waste Advisory Committee, and the Maul Foster & Alongi consultant team. Throughout the develop of the SWMP, the individuals involved dedicated an extensive amount of time and energy in formulating recommendations, discussing approaches, and reviewing the document. Thurston County would like to acknowledge the following individuals for their dedication in the preparation and production of this document.

### Thurston County Staff

Scott Schimelfenig  
Scott Clark  
Terri Thomas

### Plan Review Committee

Joe Hyer, City of Olympia  
Robert Macleod, Thurston County  
Commissioner  
Jason Hearn, City of Lacey  
Karen Valenzuela, City of Tumwater  
Robert Scribner, City of Terino  
Russ Hendrickson, City of Yelm  
Rusty Howell, District #1  
Burton Guttman, District # 2  
Bill McGregor, Port of Olympia  
Delroy Cox, Refuse Industry  
Diana Wall, Recycling Industry  
Ursula Euler, City of Olympia

### Maul Foster & Alongi, Inc.

Neil Alongi  
Erik Bakkorn  
Amy Dvorak

### Bell and Associates

Chris Bell

### Zia Engineering & Environmental Consultants, LLC

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### Contact Information

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2404 Heritage Court, A-1  
Olympia, WA 98502

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Fax: (360) 786-5582

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WWM-webmaster@co.thurston.wa.us

Thurston County Waste Line:  
(360) 786-5494



## PREPARATION NOTE

The Solid Waste System Assessment that contains Thurston County's population and waste projections was completed at the end of 2007. This Solid Waste Management Plan (SWMP) was begun in early 2008 and is based on the projections contained within the System Assessment. Beginning in 2007 and continuing through 2008 and 2009, Thurston County and the rest of the nation have slid into a serious recession. The recession has led to a significant change in waste generation habits, reducing disposal volumes by 10 to 20%.

The actions recommended within the SWMP are meant to generally guide activities conducted by Thurston County Solid Waste, however they must also be regularly reviewed and adjusted based on current needs and funding. Due to the recession and the decrease in waste volume, revenues for the department have decreased. However, the decreased volume has also reduced the need for additional disposal capacity. These changes do not require a revision of the overall SWMP and/or System Assessment. The schedule for the capital facilities recommended by the System Assessment needs to be considered to be longer than what is shown in the planning tool (System Assessment, Figure 6-1) due to the decreased waste tonnage. The future need for a new transfer station will be evaluated annually by comparing the year-end tonnage to the planning tool.

The waste projections contained in this Cost Assessment have been revised from the System Assessment to reflect current conditions and are based on the year end data for 2008. However, it is important to note that it is not possible to evaluate the current trend with a single year of information. This stresses the importance of the County's ability to utilize the recommendations of the SWMP with consideration to the current staffing and funding requirements, which are changing continually.

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## ACRONYMS AND ABBREVIATIONS

|                   |  |
|-------------------|--|
| County            | Thurston County                        |
| C/D               | Construction and Demolition Waste      |
| Ecology           | Washington State Department of Ecology |
| LeMay             | LeMay Enterprises, Inc.                |
| MFRW              | Moderate-Risk Waste                    |
| MSW               | Municipal Solid Waste                  |
| RCW               | Revised Code of Washington             |
| SWAC              | Solid Waste Advisory Committee         |
| SWMP              | Solid Waste Management Plan            |
| System Assessment | The Solid Waste System Assessment      |
| WARC              | Waste and Recovery Center              |
| TCSW              | Thurston County Solid Waste            |



# 1 INTRODUCTION

Thurston County Solid Waste (TCSW) is charged with administering systems to handle solid waste produced in the county and with responding to the needs of all county residents for various solid waste-management services. In carrying out its responsibilities, TCSW must comply with state and federal laws while striving to maintain the highest standards for protecting human health and the environment, including groundwater, surface water (such as rivers and streams), soil, and air.

TCSW and the Thurston County Solid Waste Advisory Committee (SWAC) have prepared this Solid Waste Management Plan (SWMP) and the Action Plan presented in Section 3 to proactively meet the needs of the county's residents and businesses. The Action Plan was developed cooperatively by TCSW and the SWAC by considering the priorities of the County's solid waste system, as identified in Appendix A, the Solid Waste System Assessment (the System Assessment). The System Assessment describes current solid waste practices (covering disposal, collection, recycling, composting, reuse, moderate risk waste, education, and administration), estimates future demands on the system, and describes ways in which TCSW can address those demands.

The Action Plan in Section 3 is intended to guide the future management of solid waste in Thurston County, and the SWAC has tried to make the plan easily accessible and understandable to the public. In addition, TCSW emphasizes that the Action Plan should contain specific, measurable goals that are achievable in the near future so that progress toward these goals

can be readily evaluated.

The Action Plan offers a concise summary of the current solid waste management system, followed by a discussion of recommended objectives and actions. Previous SWMPs have portrayed individual solid waste system components in great detail, with recommendations for improvement provided at the end of each discussion. The previous plans often resulted in a segmented understanding of the system, in contrast to the more comprehensive, integrated portrait undertaken in this plan that shows how the system elements are interconnected and how they impact one another.

## 1.1 PLANNING PERIOD

The Action Plan provides guidance for development of the system for short-term (six years) and longer-term (20 years) planning periods as identified in this document and its appendices, including the System Assessment (Appendix A) and the Planning Tool. The SWAC and TCSW intend to revisit the Action Plan annually to assess progress and to update the plan in five years (by 2014) to identify new actions as required in Revised Code of Washington (RCW) 70.95.110.

## 1.2 COOPERATION WITH STATE AND LOCAL PLANS

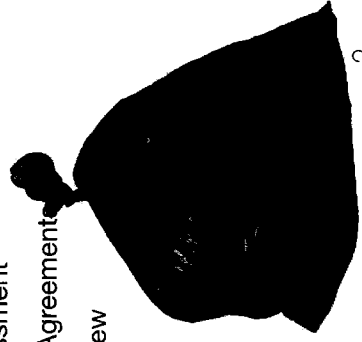
The Action Plan has been developed with due consideration of state and local SWMPs. It was designed to support the goals of the State's *Beyond Waste Plan* (Washington State Department of Ecology [Ecology], 2004) wherever possible, as discussed in detail in Section 4. In addition, ideas contained in the City of Olympia's

*Toward Zero Waste Plan* (City of Olympia, 2007) have been incorporated in the Action Plan through active participation by the City's SWAC member and by the Waste Resources program manager.

## 1.3 REGULATORY PURPOSE

TCSW has developed this Action Plan to be considered, along with several supporting documents, to fulfill the State of Washington requirements under RCW 70.95.090 for the preparation of a comprehensive SWMP, as well as Ecology's SWMP guidelines (Ecology, 1999). The supporting documents and regulatory compliance are exhibited in the following:

- Appendix A - Solid Waste System Assessment
- Appendix B - Action Plan Objectives and Actions
- Appendix C - RCW 70.95090 requirements
- Appendix D - Waste Services Contact information
- Appendix E - Waste Services Map (WUTC Districts)
- Appendix F - Cost Assessment
- Appendix G - Interlocal Agreement
- Appendix H - SEPA Review



# 2 THE SOLID-WASTE MANAGEMENT SYSTEM

This section describes the County's solid waste management system<sup>1</sup> as background for understanding the improvements recommended in the Action Plan. The information contained in this section generally describes:

- The movement of waste materials within the county.
- The generation of waste materials and trends in generation
- Administration of the solid waste management system
- Solid-waste facilities within the county system
- Programs to divert material from landfill disposal

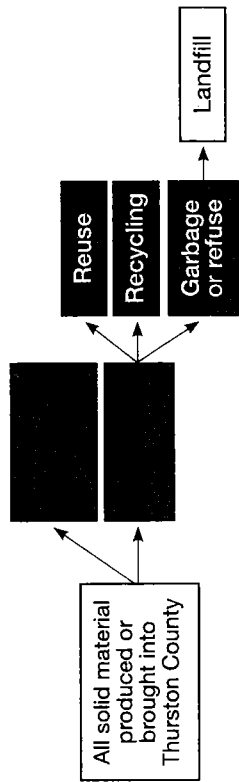
A more detailed description of each of these system elements is presented in the System Assessment (Appendix A).

## 2.1 WASTE MATERIAL MANAGEMENT IN THURSTON COUNTY

The terminology used to describe solid waste can be confusing, especially since much of the material that is waste in one sense—that is, those who generate it

**1**  
**Solid Waste Management System:**  
 The infrastructure to pick up, move, and process solid waste (recycle, compost, dispose of).

don't want it—is not waste in the sense that it may still have value to someone else or at least can be recycled into useful material. The following flow chart shows the structure of the solid waste management system and its terminology.



As the flow chart shows, materials that are no longer useful to their current owners constitute *solid waste*, commonly called *municipal/solid waste (MSW)*<sup>2</sup>. However, this material has three possible fates. Items that may be useful or valuable to another may be diverted for *reuse*. Those made of materials that can be remade for some other purpose can be *recycled*. So only materials that have no remaining use or value need be disposed of in a landfill—these are referred to as *garbage or refuse*. Naturally, a major goal of TCSW, in addition to waste reduction, is to decrease the *disposal rate* by establishing efficient mechanisms for diverting materials for reuse or recycling, leaving an absolute minimum of garbage to be landfilled.

**2**  
**Municipal Solid Waste (MSW):**  
 All wastes that are generated by residential, business, industrial, and institutional locations. For the purposes of this report, MSW represents those materials that are transported to the Roosevelt Landfill for disposal.

Waste materials are collected and managed in a variety of ways. The following discussion is a brief summary of material management methods in the county.

## 2.1.1 SOLID WASTE MANAGEMENT

County residents generally dispose of their garbage either by placing trash cans at the curb in front of their houses or bringing accumulated material to County-owned sites. All of this material is ultimately transported to the transfer station at the County's Waste and Recovery Center (WARC) in northeastern Lacey. Commercial entities (businesses, institutions, and government) have similar options.

Residential and commercial waste-collection services are regulated by the Washington Utilities and Transportation Commission. State law allows municipalities to offer their own collection services or for collection to be provided by a certified hauler. In Thurston County, collection services are offered by the City of Olympia within city boundaries, and by LeMay Enterprises, Inc. (LeMay), and its subsidiaries outside those boundaries. Waste from state governmental offices in the capitol campus are hauled by the General Administration department.

### System Update:

Harold LeMay Enterprises was purchased in August 2008 by Waste Connections, Inc. of Folsom, California.

### 3 Garbage or Refuse:

Solid waste disposed of in a landfill or other nonproductive use. For the purposes of this report, garbage means materials that are transported to the Roosevelt Landfill for disposal.

TCSW also owns, operates, and sets rates for all of the waste-handling facilities—three drop-box facilities (at Rochester, Rainier, and Summit Lake) and the WARC (public drop-box site and transfer station).

MSW that arrives at the WARC is dumped onto the floor of the transfer station where it is then loaded into transfer containers. The transfer containers accommodate a large volume of waste and are easily transported to the landfill by truck or train. Thurston County's waste is transported by truck to Centralia and then by train 250 miles away to the Roosevelt Regional Landfill in Klickitat County, a facility owned and operated by Rabanco, a subsidiary of Allied Waste Industries, Inc.

### System Update:

In June 2008, Allied Waste Industries merged with Republic Services.

Thurston County is bordered by several counties, most notably Pierce, Lewis, and Mason Counties, which have significantly higher disposal fees. These counties use the extra revenue to support necessary infrastructure and programs such as waste reduction, reuse, and recycling. Because of Thurston County's lower disposal rates, there may be a certain amount of waste coming into the County's solid waste system from other counties. With an increase in tip fees to better match the surrounding counties' tip fees, Thurston County could reduce the incentive for out-of-county waste. However, this reduction of out-of-county waste may also reduce Thurston County's out-of-county revenues. A rate increase would result in additional funds that could support county services such as:

- Additional TCSW waste education staff working to achieve the goals of this Action Plan,
- Development Services staff providing Green Building assistance,
- In-house Sustainability Coordinator and Resource Conservation Manager,
- Resource Stewardship staff providing Green Building assistance.

TCSW determines the minimum service that the LeMay owned haulers must offer to residents of the county; however, it does not provide or set rates for curbside garbage and recycling services.

### 500 R.C.

The city of Athens organizes the first municipal dump in the Western world. Citizens are required to dispose of their waste at least one mile from the city walls.

Construction and demolition waste (C/D) may be brought to the WARC for disposal. A portion of this material is processed by the facility operator to recover certain high-value recyclables, and the residue is transported to the Roosevelt Regional Landfill for disposal.

Asbestos may also be brought to the WARC, by appointment. Because of its hazardous nature, this material is segregated and transported to the Roosevelt Regional Landfill for disposal in the landfill's designated asbestos area.

### 2.1.2 MATERIAL RECYCLING

Paper, plastics, metals, and glass recycling<sup>4</sup> service is available to all residents and businesses in the county. Curbside residential recycling service is automatically offered to residents who subscribe to curbside trash pickup service. Recycling services for businesses must be subscribed to as a service separate from garbage service.

In 2006, the County adopted a new ordinance specifying the minimum level of recycling service and requiring that residential recyclables be mixed

together, or commingled, in a single container at the curb, except for glass, which is kept separate. Commercial recycling services that are offered to businesses may vary with the service provider. The

#### 1690

The Rittenhouse Mill, America's first paper mill, opens in Philadelphia making paper from recycled cotton and linen as well as used paper.

**4**

**Recycling:** Separating a given waste material from the waste stream and processing it so that it may be used again as a useful material for products that may or may not be similar to the original. Ecology's definition of recyclable materials generally includes paper, metal, glass, plastic and organics.

commingled and source-separated recyclable materials are hauled to sorting facilities, where they are processed and made ready for markets. Residential waste services within the City of Olympia are not subject to the County's minimum level of service ordinance.

As a result of the System Assessment, TCSW expanded the organics composting program in 2008 to include food waste and compostable paper with the original yard-waste program that is offered curbside and at the WARC. After initial processing at the WARC to remove large woody debris, the waste is sent to the Silver Springs compost facility. The woody debris is either chipped and composted or sent to a facility that burns the wood for energy recovery (e.g., to run boilers).

County residents have historically had access to recycling of computer monitors, hard drives, and televisions at a drop-off center at the WARC. Implementation of the states product stewardship requirement for manufacturers through Electronic Waste Law Enforced Substitute Senate Bill 6428 has increased the number of sites countywide to six sites.

## 2.2 WASTE-STREAM DESCRIPTION

Waste disposal is a basic indicator of the consumption habits of county residents, businesses, institutions, and government entities. In spite

of significant success with reuse<sup>5</sup> and recycling efforts to divert material from landfill disposal, the county has experienced a steady increase in refuse from about 145,000 tons in 1999 to 205,000 tons

**5**

**Reuse:** Diverting materials by repairing them, donating them to charity and community groups, or selling them.

in 2007, a growth rate of about 5 percent per year since 1999. Only a portion of the waste stream growth is attributable to population growth. Table 2-1 summarizes the county's overall waste generation between 1999 and 2007.

**TABLE 2.1 WASTE SUMMARY 1999-2007**

|      | County Wide                                       |   | Per Capita Waste                                |                           | Waste Generation (lb/person/year) <sup>4</sup> |
|------|---|---|---|---------------------------|--|
|      | Total Recycling (tons/year, Ecology) <sup>1</sup> | Total Diversion (tons/year, Ecology) <sup>2</sup> | Total Disposal (tons/year, County) <sup>3</sup> | Disposal (lb/person/year) |  |
| 1999 | 69,091  | 3,643   | 144,803   | 1,429                     | 2,146  |
| 2000 | 82,597  | 43,796  | 149,842   | 1,464                     | 2,699  |
| 2001 | 77,255  | 37,324  | 152,174   | 1,448                     | 2,598  |
| 2002 | 108,056   | 67,580  | 162,731   | 1,533                     | 3,188  |
| 2003 | 72,618  | 78,133  | 174,772   | 1,627                     | 3,031  |
| 2004 | 105,033   | 107,331   | 178,788   | 1,637                     | 3,580  |
| 2005 | 188,860   | 113,645   | 175,944   | 1,570                     | 4,270  |
| 2006 | 116,549   | 193,169   | 190,837   | 1,652                     | 4,332  |
| 2007 | 104,068   | 85,766  | 196,221   | 1,649                     | 3,244  |

<sup>1</sup> Ecology recycling information is derived from annual recycling survey results provided by Washington Ecology.

<sup>2</sup> Ecology diversion information is derived from annual recycling survey results provided by Washington Ecology

<sup>3</sup> County disposal information is MSW from Thurston County financial tracking database used to monitor transactions at the scale house at the disposal facility. Prior to 2005, total disposal numbers may not reflect materials

**System Update:**

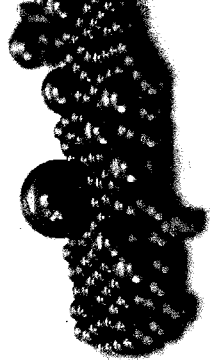
Due to an economic slowdown in 2008, the amount of waste received at the WARC is projected to decrease by up to 10% when compared to 2007. This is consistent with trends observed across the U.S.

recovered at the WARC.

<sup>4</sup> Per Capita Waste Generation = (Disposal + Diversion + Recycling) / Population  
 TCSW must plan for future increased demand for both the recycling and disposal capacity of the county solid waste system. Demands on the system will continue to increase because of population growth and changes in purchasing and consumption habits in all sectors. Population growth in the county is generally unavoidable, so TCSW must plan for the increased demand that growth places on the solid waste management system.

In 2004, a study of the composition of refuse received at the transfer station was completed for TCSW (Green Solutions, 2005). The study was performed by taking random samples from the waste stream entering the transfer station (prior to any recovery activities at the transfer station sorting line) and hand-sorting them into several material categories. The results are described in detail in Figure 2-1. The largest portion—paper, plastics, metal, and glass—made up a combined total of 43 percent of the waste stream by weight. C/D debris and wood waste, which has significant monetary and recycling/reuse value, accounted for 23 percent by weight, and organic materials made up another 23 percent by weight. Other wastes and special waste streams made up the remaining portions of total waste received. About one quarter of

**1776**



The first metal recycling in America occurs when patriots in New York City melt down a statue of King George III and make it into bullets.

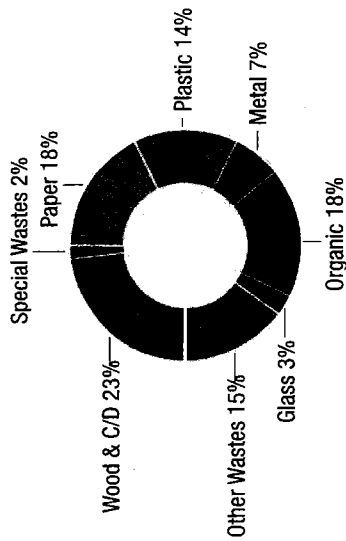


FIGURE 2-1. 2004 THURSTON COUNTY DISPOSED WASTE

the C/D and wood in the waste stream is separated in the WARC and recycled.

TCSW accepts the following materials as moderate risk waste (MRW) at collection events in the county and at the HazoHouse facility located at the WARC: auto products; paints; thinners and solvents; pesticides; glues and adhesives; batteries; solvents and cleaning supplies; pool and hobby chemicals; fluorescent light tubes; contaminated kerosene and gasoline; propane tanks; used motor oil; and products containing mercury. MRW is picked up by a hazardous waste contractor and hauled to a permitted treatment and disposal facility in accordance with federal regulations. In 2007, the County's MRW program

6

**MRW:**

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

successfully diverted several hundred tons of hazardous materials from the landfill and from over 16,000 people. This included 370 tons from the permanent HazoHouse facility at the WARC and another 38 tons from the WasteMobile. MRW programs and policies such as these are addressed in a separate plan.

## 2.3 ADMINISTRATION AND MANAGEMENT

TCSW is responsible for the overall administration of the County's solid waste system. This responsibility includes all facets of solid waste disposal services that are provided in the county, from general policy and planning for solid waste management to funding and final recycling or disposal of waste.

TCSW administers contracts for the transport and disposal of all solid waste collected in the county via the WARC; for operating the transfer station, yard-waste, and recycling areas of the WARC; for operating the County drop-box facilities; and for transporting and composting yard waste. Solid-waste management planning enables TCSW to define the issues at hand, determine the impacts of the project, evaluate the cost,

7

**Transfer Station:**

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

1860

American newspapers are now printed on paper made from wood-pulp fibers rather than rags.

and determine if the project is in the best interest of the county. After approving new programs, TCSW is also responsible for implementation of each program or for obtaining the service through contracts.

Each city in the county is responsible for providing solid waste services within its incorporated boundaries, but it may opt to administer its own solid waste and recycling program or defer to the County program. The City of Olympia currently administers its solid waste services through the Waste ReSources Utility, which is charged with ensuring that the city's waste is properly managed and directly offers materials collection and management (residential and commercial garbage, residential recyclables, and residential yard waste). The cities of, Yelm, Tenino, Bucoda, and Rainier have contracted with LeMay for the collection of garbage, recyclables, and yard waste. The cities of Lacey and Tumwater receive collection services offered to unincorporated parts of the county, and so they defer to the County minimum service level ordinance.

TCSW develops policies and ordinances for managing solid waste. It generally develops drafts through consultation with the SWAC before taking a proposed policy to the general public for comment and to the County Board of Commissioners for approval. Solid waste ordinances provide the basis for enforceable regulation in the county, such as establishing the minimum level of solid waste service provided to all residents and establishing what materials are acceptable in the waste stream. TCSW is responsible for implementing the County ordinances and resolutions as well as state laws and regulations regarding certain solid waste practices.

**8**

**Waste Reduction:**  
The act of consuming and discarding less material by redesigning products to use fewer raw materials in production, have a longer life, or so they can be used again after original use.

TCSW also collects and reports solid waste information to Ecology.

TCSW is also responsible for County-owned facilities, including the WARC and the three public drop-box facilities at Rochester, Summit Lake, and Rainier (see Figure 2-2). The WARC includes the public self-haul drop-box site and the transfer station.

TCSW also provides waste-prevention programs and education for residents, schools and businesses. These programs promote resource conservation through waste

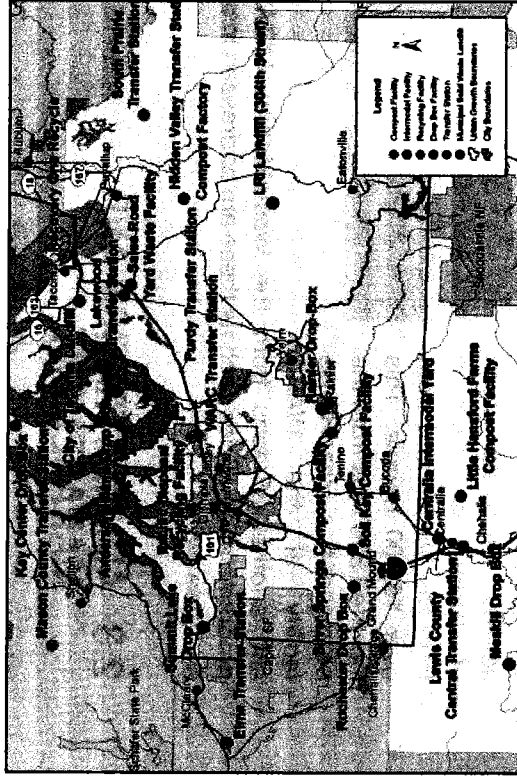


FIGURE 2-2. THURSTON COUNTY FACILITY LOCATIONS



reduction<sup>®</sup>, reuse, composting, recycling, and environmentally preferable purchasing. The programs are also the primary means through which TCSW communicates with the general public.

## 2.4 SURVEILLANCE AND ENFORCEMENT

Surveillance and enforcement at the WARC consists of several state and county ordinances addressed through education, signage and limited monitoring. The relevant ordinances include:

### 8.12.080 SPILLAGE FROM VEHICLES PROHIBITED.

All loads entering the Hawks Prairie Sanitary Landfill or transfer stations which are subject to dropping, sifting or blowing solid waste shall be covered with a tarp or other appropriate device to prevent solid waste from escaping from vehicles. An amount of fifty percent of the fee for depositing solid waste shall be charged on all loads which are not in compliance with this section. The effective date for this section shall be July 1, 1991 (Ord. 9679 § 9, 1990).

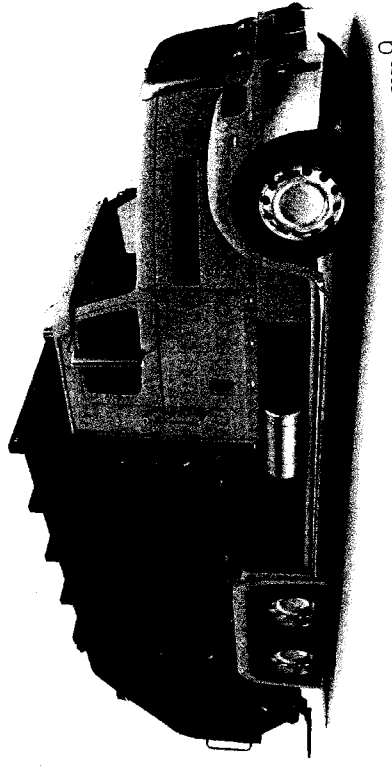
### 8.20.010, 8.20.020, 8.20.030 RESTRICTIONS ON OUT-OF-COUNTY GENERATED SOLID WASTE.

Effective July 1, 1988, solid waste generated outside of the territorial limits of Thurston County shall not be accepted for disposal at the Thurston County landfill. (Ord. 8927A § 1, 1988). Out-of-county disposal is

not specifically monitored or enforced at the WARC. However, if someone is turned away at the gate they may request a hearing before the Thurston County hearings examiner (Ord. 8927A § 3, 1988) which may also be appealed (Ord. 8927A § 4, 1988).

While the above ordinances can be difficult and costly to enforce, the County has taken the following measures:

- Provided literature regarding illegal dumping and litter.
- State patrol has monitored vehicles for overweight loads.
- Future installation of surveillance cameras (not intended for enforcement) may be used to identify vehicles that have removed their tarp prior to entering the WARC.



In the future, the County may choose to levy additional fees on vehicles which are not tarped; likewise the Department of Environmental Health may provide additional resources for enforcement.

## 2.5 SOLID WASTE FACILITIES

In general, residential and commercial solid waste is collected and delivered to the WARC. The WARC operator segregates a limited amount of some higher-value recyclables from the garbage stream, and then loads the various materials (garbage and recyclables) into trailers for transport to recycling, composting, or disposal facilities.

Garbage and C/D debris from the county are disposed of at the Roosevelt Regional Landfill in Klickitat County, which is operated by Allied Waste, Inc. The landfill, which serves municipalities in Washington, Oregon, Alaska, British Columbia, and elsewhere, is estimated to have capacity available for more than 40 years at the current rate.

Various privately owned recycling facilities accept recyclable materials recovered from the waste stream or that are source-separated. Recycling facilities are located in Thurston County, the Puget Sound area, and the Portland metro area. Curbside recyclables collected in the county, as well as material recovered at the WARC, are taken to these private facilities for processing. Compostable materials are sent to the Silver Springs Organics facility near Tenino.

### 1900'S

"Piggeries" are developed. At these facilities, swine eat food waste. It is estimated that 75 pigs consume 1 ton of refuse per day.

As identified in the System Assessment, the maximum amount of material that the WARC can handle is limited by the speed at which MSW can be loaded loosely into transfer trailers or into the compactor. The nominal design capacity of the transfer station is 190,000 tons per year. The transfer station managed 200,000 and 205,000 tons of waste in 2006 and 2007, respectively. The data indicate that TCSW should actively consider options for providing additional capacity, through increased recyclable recovery, additional disposal capacity, longer operating hours, or other methods. Also, in 2005 a contract amendment was administrated between the County and Allied/

9

#### Recovery:

Refers to material removed from the waste stream for the purpose of recycling and/or composting.

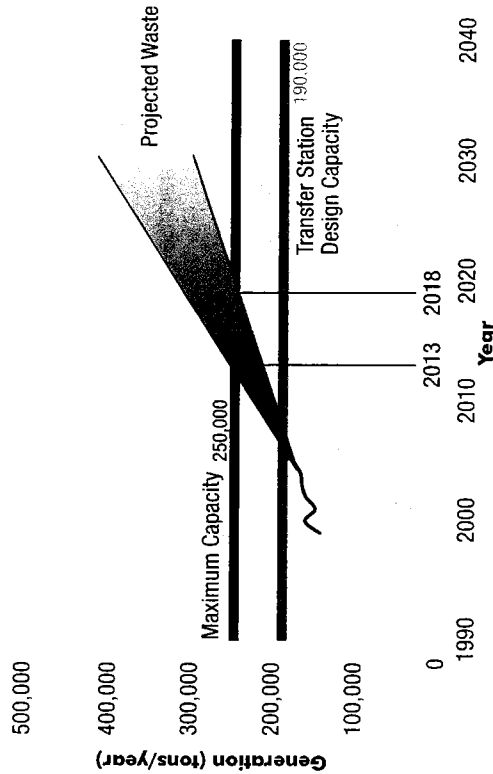


FIGURE 2-3. WARC CAPACITY

Rabanco reflecting inefficiencies in Transfer Station operational through-put, which extended the per ton capacity of the transfer station beyond the original capacity, as shown in Figure 2-3.

## 2.6 GENERAL DIVERSION

MSW and recyclables are collected throughout the county by both private- and public-sector haulers. A clear understanding of waste disposal and recycling behavior as well as the materials disposed of is necessary for effective planning for waste reduction. For this reason, TCSW routinely performs a waste-characterization study (a waste sort) of MSW to understand the composition of the materials that are being discarded (that is, not separated for recycling or reuse). This information is then used by the County to identify opportunities for waste reduction.

To reduce the overall generation of garbage in the county, TCSW has a well-developed series of waste-diversion® programs

### Diversion:

The process of removing waste materials from the solid waste stream through reuse or recycling.

10

Recent advances in the composting process have made it possible to compost more than just yard debris without generating significant nuisance odors. The Silver Springs facility composts food waste and compostable paper along with yard debris. This advance allowed TCSW to expand its composting program in 2008.

to promote recycling and reuse, with an emphasis on education. TCSW relies on three types of programs to reduce the amount of waste that is disposed of in the landfill:

**Waste-reduction programs** generally aim to reduce the amount of waste generated by residents and businesses, or to reduce the toxicity of the waste products. These programs often focus on educating the public about ways to avoid generating certain waste at all—for instance, by buying more durable or less toxic products, or purchasing products with less packaging.

**Waste-reuse programs** focus on educating the public and providing opportunities for reusing products by repairing, donating, or selling products that can still be used. Reusing products is more advantageous than recycling because items do not have to be reprocessed.

**Waste recycling** is the process of collecting certain materials, sorting them into marketable commodities, and remanufacturing them into products with full- or partially-recycled content. Equally important in this process is increasing the demand for recycled products—to ensure that there is a financial incentive for current and proposed recycling programs and collection. Past programs have focused on easily recycled products such as plastic containers and films, metal products, and paper; however, new markets have begun to develop for many other materials, such as yard waste, food waste, and construction materials.

Data regarding recycling show the impact of waste-diversion programs most

1942

Americans collect rubber, paper, glass, metals and fats to help the war effort. Paper collections are so successful they overwhelm the markets.

clearly, since most of these materials are collected and weighed. The recycling data presented in Table 2-1 show that the TCSW program has steadily increased the amount of recycling and diversion reported to Ecology. However, as evidenced by the waste-sort and the continued increases in waste disposal, additional resources should be dedicated to diversion and recycling efforts.

The most significant waste-stream components identified in the waste sort are specifically targeted in this Action Plan with objectives and actions to reduce their generation and increase diversion over the planning period. As discussed in Section 2.2, this includes organics; C/D; and paper, plastic, metal, and glass.

### 2.6.1 ORGANICS RECYCLING

Organic material, such as yard debris, compostable paper, and food waste, makes up almost 23 percent of the total county waste stream going to disposal. This does not include the organic material composted at home, diverted to composting through curbside collection, and directly delivered to yard-waste collection areas. TCSW will target organics as materials with a significant potential

for diversion; it has initiated several programs to increase organics recycling and intends to enhance these programs and increase participation over the next five years.

TCSW currently subsidizes



**11**

**Composting:**  
The controlled biological decomposition of organic solid waste materials, which produces a relatively stable mixture that can be used as a soil conditioner.

the sale of two types of compost bins that are available to residents through the Master Gardeners / Master Composters program provided through Washington State University. This program also provides composting courses free to the public and regularly advertised in the TCSW quarterly *Talkin' Trash* newsletter, which is mailed to residents. Currently, composting programs are in place at several schools and commercial organizations in the county.

TCSW also funds a compost demonstration garden at the WARC. This and two other demonstration gardens in the county are maintained by the Master Gardeners and Master Composters associations.

**1954**  
Olympia, Washington, enacts one of the first "pay-per-can" programs.

Curbside organics collection is available in most of the county. The exceptions are small pockets in rural areas and are due to a lack of demand. Areas without current access can request service through their hauler, who will offer service as demand builds. Residents of Olympia can also bring their yard waste to the City of Olympia Yard Waste Drop-Off Center. All county residents can also dispose of yard waste by bringing it to Silver Springs Organics where it is sorted and sent out for composting or energy recovery, as fuel in wood-fired boilers (hog fuel).

The residential curbside organics collection program was enhanced in 2008 with the addition

Approximately **23%** of Thurston County's garbage is easily compostable.

of food waste. To achieve successful participation in the program and to reach the program's full diversion potential, TCSW will need to provide residential outreach and education of the public.

### 2.6.2 CONSTRUCTION AND DEMOLITION WASTE RECYCLING

The demolition and construction of structures by residents and the construction industry generates an enormous amount of waste including concrete, lumber, metal, brick, and shingles. This C/D waste accounted for 23 percent of the county's disposed-of waste in 2004. Monitoring of waste received at the WARC indicates that the percentage of this C/D material increased significantly during the 2004-to-2007 construction boom, though it currently shows some signs of decreasing because of the weak housing market. Nevertheless, because C/D waste is such a large fraction of the total, reducing it is an important part of TCSW's overall goal of reducing the per capita rate of waste disposal. The methods for increasing C/D recovery, reuse, and recycling focus on

12

#### Construction and Demolition Waste:

Those waste that are typically associated with the construction industry and considered 'recyclable C/D' include stone, concrete, brick, metal, lumber, and shingles.

voluntary efforts to encourage more C/D recovery, as well as programs to encourage the building community to consider reusing and/or recycling before disposal. It is equally important for the building community to consider ways to incorporate recycled materials into construction projects.



Implementing changes to the waste-recycling practices in the construction industry should be a priority for the County. The current regional focus on sustainable

processes has resulted in a higher demand for "green building" construction practices in both residential and commercial markets, making builders more receptive to the C/D recycling effort. Likewise, this approach supports both the State of Washington's Beyond Waste goals and those described in the City of Olympia's Waste ReSources Plan.

### 1958-1976

The amount of packaging produced and disposed of in the United States increases by 67%, due to the increase in consumerism after World War II.

C/D recycling at job sites is as simple as ordering recycling bins. Private C/D recycling facilities typically accept certain types of material, depending on their primary business (e.g., recycled concrete to aggregate manufacturers). Separating and transporting C/D materials to the different processors in the county can be time-consuming and a hurdle to large-scale acceptance in the building community. On-site separation of recyclable materials also requires dedicating space to accumulate different

23% of Thurston

County's garbage is Construction and Demolition waste, most of which is recyclable.

materials, space that may be hard to find on a tight site.

### 2.6.3 PAPER, PLASTIC, METAL, AND GLASS RECYCLING

Paper, plastic, metal, and glass—the traditional materials collected in the curbside recycling programs—make up 43 percent of the solid waste stream received at the transfer station. Comparing the amount of these potential recyclables with the amount actually recovered from the waste stream shows that large amounts of these materials are still being disposed of as much of the material received has been contaminated so that it no longer has value for recycling. TCSW has a well-developed series of programs directed at recovering these materials prior to disposal; such programs generally aim to increase participation by residents and schools. Due to a focus on other waste reduction programs, TCSW staff have only been able to provide a minimal level of support to commercial businesses.

The new ordinance referred to above, requiring commingled curbside collection as part of residential

Commercial businesses produce

nearly **60%**

of Thurston County's garbage.

More than **70%**

of commercial garbage is easily recyclable paper, plastic, metals, glass, and C/D.

An active commercial waste assistance program has the ability to easily divert an additional

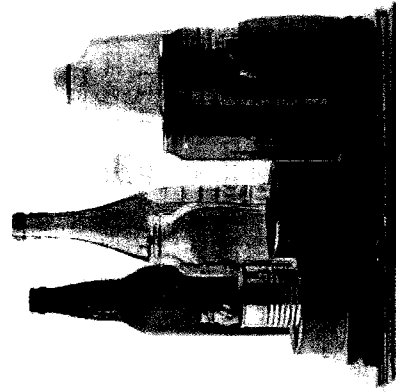
**10 to 20%**

from garbage disposal, reducing demand on disposal facilities and extending the capacity of the WARC by several years.

garbage-collection service, has resulted in a significant increase in the residential recycling rate.

LeMay has recently begun offering a new business recycling program called Certified Green. The program allows the business and LeMay staff to determine and select services for source-separated recyclables that the business typically generates in large quantities. Participation in the Certified Green program also helps businesses to qualify for the Thurston County Chamber of Commerce Green Business Award.

Evaluation of the waste sort, described in Section 2.2, with an emphasis on commercial solid wastes, indicates that there is a significant amount of recyclable material that is being disposed of. Paper, plastic, metals, and glass, materials that are easily recyclable, make up more than 60 percent of commercial garbage. By actively promoting business recycling programs and providing assistance, TCSW may be able to recycle an additional 10 to 20 percent from the garbage stream. A reduction of this magnitude should extend the capacity of the WARC for several more years.



# 3 ACTION PLAN

As the first step in developing this Action Plan, TCSW prepared the System Assessment (Appendix A), which summarizes the solid waste system, estimates future demands on the system, critiques existing services and facilities, and summarizes a series of actions for further discussion. Thurston County staff and the SWAC evaluated the options presented in the System Assessment and developed the following priorities for system improvements:

- 1) Consistent tracking and reporting of solid waste data will facilitate a county-wide discussion of solid waste generation and enable TCSW to predict needs for changes in the system's capacity.
- 2) The need for additional recycling and disposal facilities must be monitored and anticipated so as to provide adequate capacity and reliable service to residents and the commercial, industrial, and governmental sectors.
- 3) Increased attention to diversion and recycling programs represents the most sustainable way to lessen the demand for increased disposal capacity.
- 4) Recycling of traditional materials (paper, plastic, metals, glass) continues to be a priority for TCSW programs, with a particular focus on increasing services offered to the commercial, industrial, and governmental sectors.
- 5) Programs for organics recovery should be developed to take full advantage of new facilities

in the county that can compost food waste and food-contaminated paper together with yard waste.

- 6) C/D waste represents a significant portion of the waste stream. A C/D recycling program should be developed cooperatively with builders' organizations during the current downturn in the construction market, so that the programs can be adopted thoughtfully.

Based on these priorities and the evaluation of options by TCSW and the SWAC, a series of 17 objectives supported by 42 recommended actions was developed and organized into five major categories (see inset). The actions include (a) procedural and operational modifications to the WARC that the County can implement internally; (b) large-scale or long-term capital projects; and (c) policy initiatives requiring multiparty cooperation and coordination involving the County, the incorporated jurisdictions, and/or the private sector. These objectives and actions are presented in Table 3-1 and are discussed in detail in Appendix B.

As part of this Action Plan, TCSW has developed a series of *metrics*, a metric being a statement defining the methods used to measure outcomes. These metrics, included in Appendix B, are an integral part of the Action Plan because they establish the basis for judging its success.

## ACTION PLAN CATEGORIES

- A. Administration and Management
- B. Solid Waste and Recycling Facilities
- C. General Waste Diversion
- D. Organics Recycling
- E. Construction and Demolition Debris

### 3.1 GOALS

The goals outlined here reflect realistic yet challenging targets to be implemented over the planning period. Results of the System Assessment and input by the SWAC have significantly influenced the establishment of these goals; the objectives and recommended actions presented in Table 3-1 should contribute to achieving them. Thus the goals provide assistance in determining the success of this SWMP and will influence future planning efforts.

**Solid Waste and Recycling Facilities Goal:** Ensure sufficient facilities to maintain capacity and access to resources/services throughout the system (see Figure 2-2).

TCSW must provide adequate capacity for managing solid waste generated in the county. Since public welfare will be jeopardized if the waste stream grows beyond the handling capacity of the transfer station, it is critical that TCSW actively track generation trends and continue to project future needs of the solid waste system, especially since the WARC transfer station has already exceeded its nominal design capacity.

#### General Waste Reduction

**Goal:** Reduce per capita waste generation to 2005 levels and by the end of the planning period.

Reducing per capita waste generation to 2005 levels will be a positive indication that the trend of increasing waste disposal has been broken. This reduction will show that consumption habits are

1972

The first "buy-back" centers for recyclables open in Washington State. These centers accept beer bottles, aluminum cans, and newspapers.

becoming more sustainable and will decrease the County's reliance on a long-haul disposal option. Additionally, reducing per capita waste disposal is a very effective way to extend the useful life of the existing WARC transfer station, thus keeping waste-management costs to a minimum.

### 3.2 IMPLEMENTATION SCHEDULE

Table 3-1 presents an implementation schedule showing the objectives, recommended actions, and time frame.



13

#### Per capita waste generation:

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



**TABLE 3.1 IMPLEMENTATION SCHEDULE**

2009 2010 2011 2012 2013 2014 & BEYOND

**OBJECTIVES**

**ACTIONS**

**ADMINISTRATION / DATA MANAGEMENT**

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| <b>A1. Track Data in Order to Evaluate Effectiveness of Programs, Policies, and Actions</b> | A1.a. Maintain and report waste landfilled per capita data; create a baseline for 2005.   | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
|   | A1.b. Monitor annual system disposal for facility planning purposes and maintaining system capacity.  | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
|   | A1.c. Continue to collect and monitor curbside, WARC, waste sort and DOE data for disposal/recycling of all commodities to track trends.          | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
|   | A1.d. Work with haulers to establish disposal/recycling tracking for commercial accounts.   |   |   | ✓ |   |   |   |
|   | A1.e. Conduct waste sort in 2009 and 2013 to quantify types of materials being disposed and to inform SWMP implementation updates.                | ✓ |   |   |   | ✓ | ✓ |
| <b>A2. Maintain Balance Between Solid Waste Program Responsibilities and Funding</b>        | A2.a. Evaluate rates relative to solid waste, programs, staffing levels and capital improvements to ensure achievement of goals within this plan. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

**SOLID WASTE AND RECYCLING FACILITIES**

|   |   |   |   |  |  |  |  |
|---|---|---|---|--|--|--|--|
| <b>B1. Provide Adequate System Capacity as Needed</b> | B1.a. Complete facility needs analysis (capital, O&M).  | ✓ |   |  |  |  |  |
|   | B1.b. Explore feasibility for creation of IGA for use of the Centralia Transfer Station or jointly site a new facility to provide additional waste/recycling-handling capacity. |   | ✓ |  |  |  |  |

**1996**

The nation reaches a 25 percent recycling rate. EPA sets a new recycling goal of 35 percent.

**TABLE 3.1 IMPLEMENTATION SCHEDULE, CONTINUED**

| OBJECTIVES  | ACTIONS  |   | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 & BEYOND |
|---|--|---|------|------|------|------|------|---------------|
|   |  | B2.a. Separate commercial haulers and self-hauler systems.                          |      |      | ✓    |      |      |               |
|   | B2.b. Modify existing public Z-wall to a "resource recovery" concept with voluntary recycling.   |   | ✓    |      |      |      |      |               |
| <b>B2. Restructuring the WARC to Decrease Self-Hauler Traffic Congestion and Stimulate Reduction, Reuse, and Recovery</b> | B2.c. Create signage and literature for WARC users.  |   | ✓    |      |      |      |      |               |
|   | B2.d. Establish a transaction fee to cover administration cost (scale and house billing).  |   |      | ✓    |      |      |      |               |
|   | B2.e. Increase minimum weight for the transaction basis.   |   | ✓    |      |      |      |      |               |
|   | B2.f. Accept credit and debit payment.   |   | ✓    |      |      |      |      |               |
|   | B2.g. Round-up transaction charges to the nearest \$1.   |   | ✓    |      |      |      |      |               |
|   | B3. Increase Diversion at WARC by Operator   | B3.a. Amend operation and disposal contracts for increased diversion opportunities. |      | ✓    |      |      |      |               |
| <b>B4. Increase Recycling by Expanding Rochester and Rainier Drop Box Services</b>  | B4.a. Add yard waste to drop-box sites and charge accordingly.   |   |      |      | ✓    |      |      |               |
|   | B4.b. Add bulk recycling (appliances, electronics, large metal, C/D at drop-box sites.   |   |      |      | ✓    |      |      |               |
| <b>GENERAL WASTE REDUCTION</b>  |  |   |      |      |      |      |      |               |
| <b>C1. Increase Community Education and Program Development</b>   | C1.a. Expand general education and outreach through media, presentations, events, billing inserts etc. for residential, commercial and multi-family sectors. |   | ✓    | ✓    | ✓    | ✓    | ✓    | ✓             |
|   | C1.b. Increase number of school presentations.   |   | ✓    |      |      |      |      |               |
|   | C1.c. Increase assistance to schools with development, start-up and maintenance of waste diversion programs.   |   |      |      | ✓    |      |      |               |

**TABLE 3.1 IMPLEMENTATION SCHEDULE, CONTINUED**

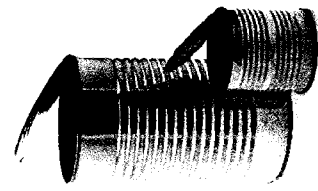
| OBJECTIVES  | ACTIONS   | 2009   | 2010 | 2011 | 2012 | 2013 | 2014 & BEYOND |
|---|---|--|------|------|------|------|---------------|
|   |   | <p><b>C2. Increase Reuse and Recycling Partnership Opportunities</b></p> <p>C2.a. Promote private recycling/reuse locations and develop private sector/government partnerships for sites/programs.</p> <p>C3.a. Form and facilitate a Business Recycling Focus Group.</p> <p>C3.b. Work with hauler to provide material commingling in the same manner as the residential mix where applicable (where there is not a large amount of paper) for program consistency, cost effectiveness, and space savings.</p> <p>C3.c. Implement a business assistance program.</p> <p>C3.d. Consider mandatory commercial recycling if the recycling goal of a 15% increase is not met.</p> | ✓    | ✓    | ✓    | ✓    | ✓             |
| <p><b>C3. Increase Commercial Recycling Participation</b></p>                                   |   |  |      | ✓    |      |      |               |
| <p><b>C4. Increase Consistency For Recyclables Collection County-Wide</b></p>                   | <p>C4.a. Work with haulers and City of Olympia to achieve consistency for recyclables collection among all jurisdictions for residential and commercial accounts to extent practical.</p> |  |      |      | ✓    |      |               |
| <p><b>C5. Increase Effectiveness of E-waste Recycling Programs</b></p>                          | <p>C5.a. Evaluate and implement, as needed, additional recycling drop-offs for e-waste, with consideration of products not included in the producer take-back programs.</p>               |  | ✓    |      |      |      |               |
| <p><b>C6. Increase Advocacy for Policy Changes to Improve Waste Reduction and Recycling</b></p> | <p>C6.a. Promote product stewardship policies.</p>  | ✓  | ✓    | ✓    | ✓    | ✓    | ✓             |
|   | <p>C6.b. Collaborate with Building Departments to encourage and promote green building standards and the use of C &amp; D recycling plans.</p>  |  |      |      | ✓    | ✓    | ✓             |
|   | <p>C6.c. Consider mandatory C/D recycling deposits if the recycling goal of a 15% increase is not met.</p>  |  |      |      |      |      |               |

**2000**

EPA establishes a link between global climate change and solid waste management, showing that waste reduction and recycling help stop global climate change.

**TABLE 3.1 IMPLEMENTATION SCHEDULE, CONTINUED**

| OBJECTIVES  | ACTIONS   | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 & BEYOND |
|---|---|------|------|------|------|------|---------------|
|   |   |      |      |      |      |      |               |
| <b>C7. Increase Information for Reduction, Reuse, Recycling and Buying Recycled within Thurston County Government</b> | C7.a. Serve as an example by implementing Thurston County's Sustainability Policy.  |      | ✓    |      |      |      |               |
|   | C7.b. Provide web-based resources and implementation strategies for local jurisdictions and businesses to use as a template.        |      | ✓    |      |      |      |               |
| <b>C8. Increase Residential Curbside Participation and Recycling</b>  | C8.a. Evaluate mandatory residential curbside trash and recycling collection if the number of self-haulers does not decrease by 5%. |      |      |      |      |      | ✓             |
| <b>GENERAL WASTE REDUCTION: ORGANICS RECYCLING</b>  |   |      |      |      |      |      |               |
| <b>D1. Increase Opportunities for Organics Recycling</b>  | D1.a. Establish use of WARC as food waste transfer site.  | ✓    |      |      |      |      |               |
|   | D1.b. Add food waste to yard debris collection for residents.   | ✓    |      |      |      |      |               |
|   | D1.c. Implement food waste collection program at schools and businesses; assist with set-up and training.                           |      |      |      |      |      | ✓             |
| <b>GENERAL WASTE REDUCTION: C/D RECOVERY AND RECYCLING</b>  |   |      |      |      |      |      |               |
| <b>E1. Increase C/D Recovery</b>  | E1.a. Evaluate potential locations and partnerships for a regional C/D facility.  |      | ✓    |      |      |      |               |
|   | E1.b. Establish C/D rates at the WARC to encourage mixed and source separated C/D recycling.  |      |      | ✓    |      |      |               |
|   | E1.c. Increase recovery reimbursement to facility operator.   |      |      | ✓    |      |      |               |
| <b>E2. Increase Waste Reduction, Reuse, and Recycling for New Buildings and Remodels</b>                              | E2.a. Promote available reuse opportunities and resources to the building community.  |      |      | ✓    |      |      |               |



## 4 SUPPORT OF LOCAL AND REGIONAL PLANS

Local and regional solid waste planning efforts were important considerations in developing the County's SWMP. The objectives and strategies outlined in the previous chapters were specifically selected and organized to align with the goals described in Washington State's Beyond Waste program, as well as to accommodate the goals described in the City of Olympia's Waste ReSources Plan. Table 4-1, following this document, summarizes how the County's objectives support these plans.

### 4.1 STATE OF WASHINGTON BEYOND WASTE

The vision of the State of Washington's *Beyond Waste* plan is to:

Transition to a society where waste is viewed as inefficient, and where most wastes and toxic substances have been eliminated. This will contribute to economic, social and environmental vitality.

The County's SWMP, while structured differently than a statewide plan, reflects the vision and focuses on key initiatives in *Beyond Waste*. The primary initiatives are:

#### MOVING TOWARD BEYOND WASTE WITH INDUSTRIES

The goal of the Industries Initiative is to maintain the economic vitality of Washington State industries as we

reduce wastes and toxic releases, and to increase the use of recyclable material. This initiative is supported by Objectives C3, C6, and C7 of this document.

#### REDUCING SMALL-VOLUME HAZARDOUS MATERIALS AND WASTE

The goal of this initiative is to increase progress toward eliminating the risks associated with products containing hazardous substances, including products and substances commonly used in residential and commercial settings. Objective C5, increase the effectiveness of e-waste recycling programs, will contribute directly toward progress on this initiative. TCSW's Moderate Risk Waste Plan revision will strive to support a larger portion of this goal.

#### INCREASING RECYCLING OF ORGANIC MATERIALS

The goal of the Organic Materials Initiative is to create a closed-loop reuse and recycling system for organic materials that is effective and pervasive throughout the state. The County's plan will support this initiative by providing infrastructure, partnerships, and educational material to improve progress toward this mutual goal (Objective D1).

#### MAKING GREEN BUILDING PRACTICES MAINSTREAM

The objective of this initiative is to increase green building practices throughout the state, to increase the use of reused and/or recycled building materials, and to expand overall knowledge

**2008**

Twenty years ago, almost 1,000 curbside recycling programs existed in the United States. Today there are more than 10,000 across the nation.

and awareness of green building resources. The County intends to actively promote green building policy as well as to develop the infrastructure and programs necessary to increase C/D recycling and reuse (see Objectives C6 and E2).

#### MEASURING PROGRESS TOWARD BEYOND WASTE

The objective of the Measuring Progress Initiative is to transition Ecology to a long-term data-tracking system that measures progress toward the Beyond Waste vision. The County will implement a similar process, to track progress on goals and infrastructure needs, as described in Objective A1.

## 4.2 CITY OF OLYMPIA WASTE RESOURCES PLAN

In 2006, the City of Olympia adopted a Zero Waste resolution, which resulted in development of its 2008-2013 Waste ReSources Plan with the following overarching goals:

- Reduce the overall waste created in Olympia.
- Increase the quantity of recyclable and compostable material diverted from the landfill.
- Manage Olympia's waste stream responsibly.

The City of Olympia's Waste ReSources Plan outlines several strategies to achieve these goals, which are linked with the County's objectives and strategies described in the previous sections.

#### STRATEGY 1.1 ENCOURAGE WASTE REDUCTION

This strategy aims primarily to encourage waste reduction by targeting upstream production and downstream consumption and disposal practices. This will be accomplished by educating residential customers about personal waste reduction strategies and providing technical assistance to commercial waste generators, including businesses, government agencies, and other institutions. This strategy clearly aligns with the County's General Waste Reduction Objectives C1, C3, C6, and C7, which provide educational resources and promote waste reduction policies and programs throughout the county.

#### STRATEGY 2.1 OPTIMIZE RECYCLING OF RESIDENTIAL WASTE

This strategy intends to increase residential recycling from 32 to 37 percent and eliminate paper from the residential garbage waste stream. Many of the objectives outlined in the County's Action Plan under General Waste Reduction will assist in achieving this goal. Specifically, Objective C8, consideration for a mandatory recycling collection system, will support the City of Olympia's residential recycling goals if needed.

#### STRATEGY 2.2 INCREASE RECYCLING OF COMMERCIAL WASTE

To increase recycling of commercial waste, the City of Olympia plans to work with commercial haulers and implement education and outreach programs. This approach overlaps significantly with the County's Objective C3 and will likely include joint implementation.

**2008**

Today, the U.S. recycles 32% of its waste, a rate that has almost doubled during the past 15 years.

**STRATEGY 2.3 INCREASE DIVERSION OF ORGANICS**

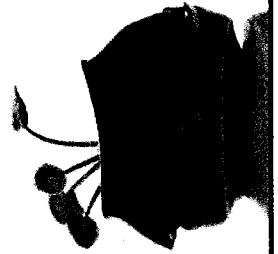
This plan calls for an increase in diversion of residential organics from 3,600 tons in 2005 to 4,600 tons in 2013, and to increase diversion of commercial organics from virtually zero tons in 2005 to 3,300 tons (excluding self-hauled material) in 2013. Objective D1 of the County's Action Plan will provide a portion of the infrastructure, policies, and outreach programs needed to reach this goal.

**STRATEGY 2.4 IMPROVE RECYCLING OF C/D**

Improving recycling of C/D debris will significantly impact the overall waste-reduction goals in the City of Olympia's plan. One of these strategies is to partner with the County and other jurisdictions and agencies to bring a Materials Recovery Facility to the South Puget Sound to process C/D debris. This option is further explored in this Action Plan in Objective E1a.

**STRATEGY 3.1 ENSURE THAT RECYCLABLE MATERIALS ARE ACTUALLY RECYCLED AND THAT OPERATIONS ARE EFFECTIVE**

The City of Olympia and the County could coordinate the implementation of this strategy as part of Objectives C3 and C4, increasing consistency and effectiveness among the commercial and residential sectors. In addition, this strategy considers requiring recyclers and haulers to report to the city on the types and quantities of recycled materials they collect.



**TABLE 4.1  
THURSTON  
COUNTY PLAN  
ELEMENT  
COMPARISON**

**SWMP ACTIONS<sup>1</sup>**

|                           |                         |                             |               |
|---------------------------|-------------------------|-----------------------------|---------------|
| Total Recycling (Ecology) | Total Disposal (County) | Per Capita Waste Generation | C/D Recycling |
|---------------------------|-------------------------|-----------------------------|---------------|

**BEYOND WASTE INITIATIVES**

|   |    |          |    |
|---|----|----------|----|
| Moving Toward Beyond Waste with Industries          |    | C3/C6/C7 |    |
| Reducing Small-Volume Hazardous Waste and Materials | C5 |          |    |
| Increasing Recycling of Organic Materials           |    |          | D1 |
| Making Green Building Practices Mainstream          |    | C6       | E2 |
| Measuring Progress Toward Beyond Waste              | A1 |          |    |

**CITY OF OLYMPIA WASTE RESOURCES PLAN**

|   |    |             |    |
|---|----|-------------|----|
| Strategy 1.1 Encourage Waste Reduction  |    | C1/C3/C6/C7 |    |
| Strategy 2.1 Optimize Recycling of Residential Waste  |    | C8          |    |
| Strategy 2.2 Increase Recycling of Commercial Waste   |    | C3          |    |
| Strategy 2.3 Increase Diversion of Organics   |    |             | D1 |
| Strategy 2.4 Improve Recycling of C/D   |    |             | E1 |
| Strategy 3.1 Ensure That Recyclable Materials Are Actually Recycled and That Operations Are Effective | A1 | C3/C4       | E1 |

<sup>1</sup>Element numbers from Table 3.1





# APPENDIX C

## COMPLIANCE CHECKLIST



| Plan Requirements   | Plan Location   |
|---|---|
| 1) A detailed inventory and description of all existing solid-waste-handling facilities, including an inventory of any deficiencies in meeting current solid-waste-handling needs.  | System Assessment<br>Sections 2.7, 4.3, and 4.4   |
| 2) The estimated long-range needs for solid-waste-handling facilities projected 20 years into the future.   | System Assessment<br>Section 3<br>Section 6   |
| 3) A program for the orderly development of solid-waste-handling facilities in a manner consistent with the plans for the entire county, which shall: <ul style="list-style-type: none"> <li>(a) Meet the minimum functional standards for solid-waste handling adopted by the department and all laws and regulations relating to air and water pollution, fire prevention, flood control, and protection of public health;</li> <li>(b) Take into account the comprehensive land use plan of each jurisdiction;</li> <li>(c) Contain a six-year construction and capital acquisition program for solid-waste-handling facilities; and</li> <li>(d) Contain a plan for financing both capital costs and operational expenditures of the proposed solid-waste management system.</li> </ul>                       | Action Plan<br>Section 3.2, Table 3-2<br>WUTC Cost Assessment   |
| 4) A program for surveillance and control.  | See section 2.4   |
| 5) A current inventory and description of solid-waste collection needs and operations within each respective jurisdiction, which shall include: <ul style="list-style-type: none"> <li>(a) Any franchise for solid-waste collection granted by the WUTC in the respective jurisdictions, including the name of the holder of the franchise and the address of his or her place of business and the area covered by the franchise;</li> <li>(b) Any city solid-waste operation within the county and the boundaries of such operation;</li> <li>(c) The population density of each area serviced by a city operation or by a franchised operation within the respective jurisdictions;</li> <li>(d) The projected solid-waste collection needs for the respective jurisdictions for the next six years.</li> </ul> | System Assessment<br>Sections 2.1, 2.6, 2.7, and 2.8<br><br>SWMP Appendix D<br><br>SWMP Appendix E<br><br>System Assessment<br>Figure 3-1 and 3-2<br><br>Toward Zero Waste<br>Chapter 10<br>Rest of county is private<br>collection contracts |
| 6) A comprehensive waste-reduction and recycling element that, in accordance with the <i>priorities</i> (listed in next cell) established in Revised Code of Washington (RCW) <u>70.95.010</u> , provides programs that (a) reduce the amount of waste generated, (b) provide incentives and mechanisms for source separation, and (c) establish recycling opportunities for the source-separated waste.  | System Assessment<br>Sections 2.5, 2.7, 2.8, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3, and 5.4<br>Action Plan<br>Table 3-1   |

| Plan Requirements   | Plan Location   |
|---|---|
| <p>7) The waste-reduction and recycling element shall include the following:</p> <ul style="list-style-type: none"> <li>(a) Waste-reduction strategies;</li> <li>(b) Source-separation strategies, including: <ul style="list-style-type: none"> <li>(i) Programs for the collection of source-separated materials from residences in urban and rural areas. In urban areas, these programs shall include collection of source-separated recyclable materials from single and multiple family residences, unless the department approves an alternative program, according to the criteria in the planning guidelines. Such criteria shall include: Anticipated recovery rates and levels of public participation, availability of environmentally sound disposal capacity, access to markets for recyclable materials, unreasonable cost impacts on the ratepayer over the six-year planning period, utilization of environmentally sound waste-reduction and recycling technologies, and other factors as appropriate. In rural areas, these programs shall include but not be limited to drop-off boxes, buy-back centers, or a combination of both, at each solid-waste transfer, processing, or disposal site, or at locations convenient to the residents of the county. The drop-off boxes and buy-back centers may be owned or operated by public, nonprofit, or private persons;</li> <li>(ii) Programs to monitor the collection of source-separated waste at nonresidential sites where there is sufficient density to sustain a program;</li> <li>(iii) Programs to collect yard waste, if the county or city submitting the plan finds that there are adequate markets or capacity for composted yard waste within or near the service area to consume the majority of the material collected; and</li> <li>(iv) Programs to educate and promote the concepts of waste reduction and recycling;</li> </ul> </li> <li>(c) Recycling strategies, including a description of markets for recyclables, a review of waste-generation trends, a description of waste composition, a discussion and description of existing programs and any additional programs needed to assist public and private sector recycling, and an implementation schedule for the designation of specific materials to be collected for recycling, and for the provision of recycling collection services.</li> </ul> | <p>System Assessment<br/>Sections 5.1 through 5.4<br/>System Assessment<br/>Sections 5.1 through 5.4</p> <p>System Assessment<br/>Sections 2.5, 5.1 through 5.4<br/>Action Plan<br/>Table 3-1</p>     |
| <p>(d) Other information the county or city submitting the plan determines is necessary.</p>  | <p>None</p>   |
| <p>8) An assessment of the plan's impact on the costs of solid waste collection. The assessment shall be prepared in conformance with guidelines established by the WUTC. The commission shall cooperate with the Washington State association of counties and the association of Washington cities in establishing such guidelines.</p>  | <p>WUTC Cost Assessment Questionnaire</p>   |
| <p>9) A review of potential areas that meet the criteria as outlined in RCW <u>70.95.165</u>. (Disposal Facility Siting)</p>  | <p>This information will be prepared during the facility site selection process when a new facility is sited. Existing facilities are permitted and therefore meet the criteria of RCW 70.95.165.</p> |



# APPENDIX A

## SOLID WASTE SYSTEM ASSESSMENT



**THURSTON COUNTY  
SOLID WASTE SYSTEM ASSESSMENT**

Prepared for  
Thurston County  
Department of Water and Waste Management

November 21, 2007

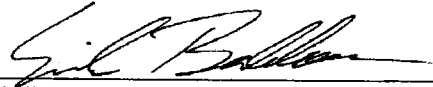
Prepared by  
Maul Foster & Alongi, Inc.  
7223 NE Hazel Dell Avenue, Suite B  
Vancouver, Washington 98665

Project No. 9135.02.01

## Thurston County Solid Waste System Assessment

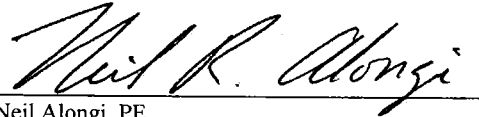
The material and data in this report were prepared under the supervision and direction of the undersigned.

Maul Foster & Alongi, Inc.



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Erik Bakkom PE  
Project Engineer



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Neil Alongi, PE  
Principal Engineer

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## ACRONYMS AND ABBREVIATIONS

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|              |  |
|--------------|--|
| Allied       | Allied Waste Industries, Inc.                            |
| Beyond Waste | Washington State Beyond Waste Plan                       |
| C/D          | Construction and Demolition                              |
| CRT          | Cathode Ray Tube   |
| E-waste      | electronics waste  |
| Ecology      | Washington Department of Ecology                         |
| GIS          | Geographic Information System                            |
| GMA          | Growth Management Act                                    |
| HHW          | Household Hazardous Waste                                |
| lb           | Pound  |
| LeMay        | LeMay Enterprises, Inc.                                  |
| LOTT         | Lacey, Olympia, Tumwater, Thurston Alliance              |
| MFA          | Maul Foster & Alongi, Inc.                               |
| MRF          | Material Recovery Facility                               |
| MRW          | Moderate-Risk Wastes                                     |
| MSW          | Municipal Solid Waste                                    |
| ND           | non-detect   |
| SWAC         | Solid Waste Advisory Committee                           |
| SWMP         | Solid Waste Management Plan                              |
| TRPC         | Thurston Regional Planning Center                        |
| UGA          | Urban Growth Area  |
| UGB          | Urban Growth Boundary                                    |
| UTC          | Washington Utility and Transportation Commission         |
| WAC          | Washington Administrative Code                           |
| WARC         | Waste and Recovery Center                                |
| WSDOT        | Washington State Department of Transportation            |
| WWM          | Thurston County Department of Water and Waste Management |

## GLOSSARY OF TERMS

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**Biosolids:** A primarily organic, semisolid product resulting from wastewater treatment processes. Biosolids contain essential plant nutrients and organic matter. Treatment of biosolids produces one of two classes of material: Class A (no detectible remaining pathogens) and Class B (detectible levels of pathogens). In general, Class A biosolids used in small quantities by general public have no buffer requirements, crop type, crop harvesting or site access restrictions. Class A biosolids used in bulk are subject to buffer requirements, but not to crop harvesting restrictions. In general, there are buffer requirements, public access, and crop harvesting restrictions for virtually all forms of Class B biosolids.

**Composting:** The controlled biological decomposition of organic solid waste materials, which produces a relatively stable mixture that can be used as a soil conditioner.

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

**Diversion:** Those materials that have been recovered from the waste stream. Diversion include materials which do not fit the definition of recycling as promulgated by the Washington Department of Ecology (Ecology), such as anti-freeze, concrete, ash and sand used in asphalt production, land clearing debris, and materials for energy recovery (wood, used oil, and tires).

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

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

**Municipal Solid Waste (MSW):** All wastes that are generated by residential, business, industrial, and institutional locations. For the purposes of this report, MSW represents those materials that are transported to the Roosevelt Landfill for disposal.

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

**Recovery:** Refers to material removed from the waste stream for the purpose of recycling and/or composting.

**Recycling:** Separating a given waste material from the waste stream and processing it so that it may be used again as a useful material for products that may or may not be similar to the original. Ecology's definition of recyclable materials generally includes paper, metal, glass, plastic, and organics.

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

## EXECUTIVE SUMMARY

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*This summary is not intended as a stand-alone document and must be evaluated in context with the entire document.*

The Thurston County Solid Waste System Assessment (the Assessment) was developed to provide supporting information for the Solid Waste Management Plan update, as well as to allow Thurston County (the County) to meet capital facilities planning requirements for the six- and 20-year planning horizons. The Assessment takes a look at the larger picture of the Thurston County Solid Waste System, including waste disposal, collection, recycling, composting, reuse, education, and diversion policies. Current County policies, programs, facilities, and contracts are reviewed to better understand potential needs and opportunities within the system.

Estimating future amounts of waste that may be produced within the county is critical in assessing the ability of the current solid waste system to continue to meet the needs of residents and businesses. Waste estimates are based on previously adopted county population projections and distributions, and reflect recent individual (per capita) waste-generation trends. It is shown that per capita waste generation has been increasing over the past five years, which means that, without additional efforts county-wide, this trend will result in a need for new or expanded solid waste transfer facilities earlier than previously anticipated. Identifying opportunities to increase diversion and recycling in the county and reverse this trend is one of the primary objectives of this assessment.

The various components of the current solid waste system (programs, policies, contracts, facilities) are reviewed to identify issues and problems, so that potential solutions can be discussed. A wide range of system alternatives are identified to address future solid waste needs, such as enhancing diversion and recycling and increasing the efficiency of the existing solid waste facilities. Specifically, the capacity and location of the existing transfer station are reviewed along with alternatives for facility expansion or construction of new facilities.

The Assessment includes a method for assisting in planning for increased transfer station capacity by tracking the waste-generation trends. This planning tool will help the County monitor growth of the waste stream with relation to the system's need for a new or expanded facility. The tool allows the County to identify the approximate time frame during which additional capacity may be needed, and allows the County time to plan the facilities based on actual generation trends and to accelerate or delay the construction of the facility accordingly.

Thurston County's solid waste system depends on contractors for the management of solid waste. The County contracts directly for the operation of the transfer station, transportation and disposal of waste, management of yard waste materials, and collection of some recyclables. Residents and businesses subscribe to garbage collection services offered by private companies or municipalities.

A discussion of current County solid waste service contract requirements is included, along with opportunities for future contract conditions that could be considered to advance the goals of increased diversion and recycling. To assist the County in linking the contract renewals with these opportunities, a chart outlines the timeline for existing contracts and identifies programs that may impact or be impacted by the implementation of a new contract.

The greater the WWM's success with increasing recycling, the less demand there will be to add transfer station capacity in the County.

Among the findings of the report is that there are opportunities to increase recycling in three categories. The opportunities to significantly impact recycling lie within construction/demolition debris (including wood waste), organics for composting (specifically commercial/residential food waste and compostable paper), and commingled recyclables (specifically plastics). The greater the success with increasing recycling, the less demand there will be to add transfer station capacity.

As a result of the review of the current solid waste system, a list of alternatives is developed for consideration by the County and the Solid Waste Advisory Committee (SWAC) for improving the solid waste system, through new or modified programs, policies, and facilities. The list will be considered by the SWAC during the pending update of the Solid Waste Management Plan to ensure that the plan meets the future needs of the County.

## ***Section 1***

## ***Introduction***

Thurston County's Department of Water and Waste Management (the WWM) retained Maul Foster & Alongi, Inc. to provide assistance in preparing a Solid Waste System Assessment (the Assessment) of solid-waste facilities, policies, and programs as a component of revising the Solid Waste Management Plan (SWMP). The Assessment is intended to provide supporting information for the SWMP update. The Assessment is not considered a plan but instead a planning tool that will enable the WWM to prepare for trends in solid-waste disposal before they lead to constraints on county finances and operations. The Assessment is also intended to aid the SWMP development process by providing alternatives for increasing diversion and recycling, as well as alternatives to increase the capacity of Thurston County's (the County's) current solid-waste system.

The approach of the Assessment is to first define the existing solid waste system (facilities, programs, and policies) in the County. The Assessment then examines projected development and growth within the County and the resulting demands on the solid waste system. An evaluation of the system in its present state identifies existing issues within the system, including issues that may become more pronounced with population growth. Alternatives for future policy, program, and facility development are presented which address increased diversion, reduced generation, or alternative handling methods for specific materials in the waste stream. The Assessment concludes with a summary of the next steps to be taken upon completion of this report.

The Assessment identifies alternatives for programs and policies that can be considered by the County for reducing the solid-waste stream destined for disposal.

One goal of the Assessment is to identify alternatives for programs and policies that can be considered by the County for reducing the solid-waste stream destined for disposal. These alternatives include policies to (1) reduce the amount of waste that is generated by residents, (2) increase the amount of recycling within the county,



## ***Introduction***

and (3) divert certain types of wastes to higher uses<sup>1</sup> A higher use is the ability to manage a waste through a higher priority method as defined by state law, such as recycling paper and wood rather than burning them to generate power, or reusing building materials instead of disposing of them.

The Assessment identifies facility or operational modifications that would extend and expand the service life of the existing solid-waste facilities.

Another goal of the Assessment is to identify facility or operational modifications that would extend and expand the service life of the existing solid-waste facilities. Planning for new solid-waste facilities is also a component of the Assessment; however, it is presented as a planning tool so that the timing of such facilities is adjustable and can be based on the success of efforts to minimize waste disposal.

The Assessment presents an analysis of how the County's population growth and waste generation can impact the solid waste system.

Understanding how the County's population growth and waste generation could impact the solid waste system is another goal of the assessment. Waste-generation projections were developed to gain an understanding of what the County's waste stream could look like in the future. The projections present a realistic estimate of the range of growth in solid-waste disposal that could occur due to population growth and to changes in the amount of waste generated per person. The waste projections suggest the potential magnitude of waste stream changes consistent with current or plausible future trends. These projections are used to create a planning tool to evaluate future progress toward slowing or reversing the growth in waste generation through the implementation of waste reduction and recycling policies and programs.

The Assessment presents a flexible planning tool for timing new facilities based on actual waste generation trends.

A typical planning document sets a schedule by which certain actions should be taken or implemented, but that approach is not flexible enough to be useful when trends change over a long planning horizon. A number of the alternatives identified in the assessment may result in lowering waste generation in the county, which could change the type or timing of new facilities. By tying the start of construction to an annual disposal tonnage, a flexible start date can be planned to allow the County to develop financial strategies to meet capital project needs; however, the actual start of construction can be reviewed annually to determine the continued need for the facility or to move the start date forward or back. The

---

<sup>1</sup> The Washington Administrative Code (WAC-173-304-010) defines the priority of waste management methods within the state to be: 1) waste reduction, 2) waste recycling, 3) energy recovery or incineration, and 4) landfilling.

## ***Introduction***

planning tool will enable the County to be proactive relative to changes in the actual disposal trends and in the scheduling of solid-waste-facility improvements.

Another goal of this document is to identify a list of feasible policy, program, and facility alternatives that the County can consider for properly managing the waste stream and that can be further considered during the development of the SWMP.

## ***Section 2***

## ***Current Solid Waste System***

- 2.1 Solid Waste Collection
- 2.2 Self-Haul Options
- 2.3 County Waste Disposal
- 2.4 Other Waste Streams
- 2.5 Recycling
- 2.6 County Solid Waste Administration
- 2.7 Solid Waste Facilities
- 2.8 Solid Waste Contracts
- 2.9 Solid Waste Generation
- 2.10 Funding
- 2.11 Regional Considerations

Residents of Thurston County are provided with solid waste services through a combination of public and private organizations. This section describes the solid waste system that operates in the County.

The section describes the current methods of providing solid waste collection, disposal, recycling, yard waste, moderate risk waste, and construction/demolition waste services as well as the facilities currently being used to provide those services.

WWM's role in administering these services as well as the Thurston County Solid Waste Advisory Committee's (the SWAC) role is also discussed.

### **2.1 Solid Waste Collection**

It is important to gain a common understanding of how solid waste is currently being managed in Thurston County prior to embarking on future system planning.

The collection of municipal solid waste (MSW) in Thurston County is a shared responsibility of incorporated cities and Thurston County for all unincorporated areas. The Cities of Olympia and Rainier employ their own MSW collection services for curbside collection of MSW, recyclables, and yard waste. The cities of Tumwater and Lacey have private MSW collection services operated by LeMay Enterprises, Inc. (LeMay). The cities of Tenino, Bucoda, and Yelm receive collection services offered to unincorporated parts of the county, as discussed below.

The collection of solid waste within the unincorporated portions of the county are regulated by the Washington Utilities and Transportation Commission (UTC), which issues collection permits granting the sole right to offer MSW collection services within specific geographic areas. LeMay and its subsidiaries Pacific Disposal, Butler's Cove, Joe's Refuse, and Lakewood Refuse (collectively referred to as LeMay) possess all of the UTC permits for the County. In addition to the cities and unincorporated areas, several entities in the county elect to provide their own garbage

## *Current Solid Waste System*

services, including the Panorama City retirement center and the state government offices.

Curbside collection of municipal solid waste accounts for 80% of the waste stream handled at the Waste and Recovery Center.

Material collected throughout the County is brought to the Waste and Recovery Center (WARC) transfer station in the northeast portion of the county for processing prior to disposal. Curbside (residential and commercial) collection accounted for 119,000 tons of the 150,000 tons or 80%, of the MSW stream delivered to the WARC in 2005, Table 2-1. This includes collection by Pacific Disposal accounts, the City of Olympia, The City of Rainier, Panorama City, and the State General Administration (GA) collection services.

Panorama City is a 140 acre retirement community with approximately 900 residences. Panorama City maintains an account at the WARC for their own waste services; in 2005 they hauled 600 tons.

The State of Washington governmental offices employ their own collection of solid waste within the main campus of offices in Olympia and Tumwater. The State employs their own trash collection, to haul garbage to the WARC on a daily basis. In 2005 about 900 tons were hauled to the WARC by the State GA collection service. The GA has an agreement with Weyerhaeuser for the collection of recyclables, in which Weyerhaeuser provides containers in exchange for the right to pick up the recyclables. This includes high grade office paper, low grade mixed paper, and containers (glass, plastic, and metal). The paper materials are brought to the Weyerhaeuser facility in Kent, Washington for processing, and containers are dropped off at the Waste Management Material Recovery Facility (MRF) in Auburn, Washington.

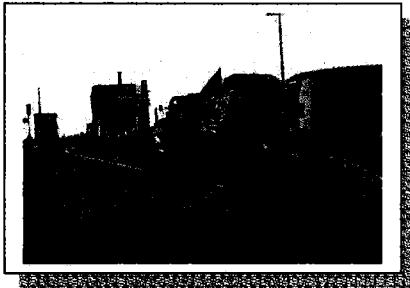
The Washington Department of Ecology (Ecology) uses garbage service offered by Pacific Disposal, with pickup on a daily basis. However, they are also using the same arrangement with Weyerhaeuser for the collection of recyclables as discussed for the GA. In addition, Ecology has an internal program for the composting of food waste. They use an enclosed composting vessel that is located near the loading dock. Ecology provides recycling bins at the common areas throughout the building, that are labeled for office paper, mixed paper, containers, and a sealed container for food waste. Employees are asked to periodically bring their recyclables from their desks to the recycling bins so that the

## ***Current Solid Waste System***

facilities staff can remove the material. Ecology weighs all waste materials before they are picked up for hauling so that they can track recycling and diversion internally. In 2006, Ecology sent 46 tons of garbage to the WARC, generated 75 tons of recyclables, and collected and processed 11 tons of food waste. Overall this facility is able to achieve a 62% recycling rate.

All residents and businesses of the County are offered solid waste disposal service through a combination of collection and drop off services. WWM has established a minimum level of service for residential and multi-family customers that includes curbside collection of MSW and recyclables but does not apply to commercial entities. The primary means of disposing of MSW is by placing a garbage can and/or recycling can at the curbside where a collection company then picks up the debris and leaves the empty can. These services are offered to customers on a regular basis ranging from weekly to monthly. These customers pay a monthly fee for collection services. After collection the waste is brought to the county transfer station that is located at the WARC.

### **2.2 Self-Haul Options**



Those who have excess waste or who do not wish to have regular collection at their residence or business have the option of self-hauling their waste and recycling to the WARC or to one of the three county drop box facilities. At these locations customers are charged a fee based on the volume or weight of material they have. Users of the WARC and the drop box facilities have access to MSW disposal as well as options for free recycling.

The drop box facilities are located at Rochester, Rainier, and Summit Lake. These facilities are open 1 to 3 days per week, depending on the location. LeMay is contracted to haul material from the drop box facilities to the WARC. WWM maintains and staffs the facilities. The drop box facilities received about 3,900 tons or 2% of the waste stream in 2005, Table 2-1. Self hauling directly to the WARC accounts for 25,700 tons or 13% of the total incoming MSW received.

### **2.3 County Waste Disposal**

All MSW collected curbside, at the transfer station, or at the county drop box facilities is combined at the WARC transfer station where

## ***Current Solid Waste System***

it is compacted and loaded into long-haul transfer trailers and then sent 250 miles via truck and rail to the Roosevelt Regional Landfill in southern Washington. Construction and demolition (C/D) waste is also sent to the Roosevelt Landfill via rail. Recyclables collected within the county are sent to markets in the Pacific Northwest and overseas. Yard and wood waste is sent for composting or energy recovery. Moderate-risk wastes (MRW) are sent for treatment and disposal in accordance with federal hazardous waste regulations. Electronic wastes (E-wastes) are sent to recyclers in the Seattle/Tacoma area.

Recycling material from the county drop box facilities is collected by Pacific Disposal and processed at their MRF.

### **2.4 Other Waste Streams**

#### **Construction & Demolition**

C/D waste generated within the County is brought to the WARC transfer station or to another processing facility, Recovery 1, Inc. (located in Tacoma), and sorted for recycling or diversion. A waste characterization performed for the county estimates that C/D and wood wastes make up 23% of the incoming solid waste stream at the WARC (Green Solutions, 2005). Recovery operations at the WARC transfer station are able to divert 10 to 20% of the C/D waste received at the facility. By comparison, the recovery amount at Recovery 1 is more than 99%. One contractor (Benchmark Recycling) has begun offering a pickup and transport service to bring C/D waste from Thurston County to Recovery 1. In 2005, 37,000 tons of C/D waste was recorded at the entrance scales for the WARC transfer station (Table 2-1), representing 18% of the incoming waste stream. Approximately 8,400 tons were recovered at the transfer station pickline for recycling, composting, or energy recovery, resulting in a recovery rate of about 23% of incoming C/D.

#### **Moderate Risk Waste**

MRW consists of materials that have toxic properties or are considered to be hazardous in nature but are generally sold to and handled by the general public. These materials are commonly referred to as Household hazardous waste (HHW), but the definition of MRW has been expanded to include those chemicals used by certain small businesses. The MRW program is offered to

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residential customers at no cost, to encourage use of the program and to reduce or eliminate the amount of these materials being disposed of at the landfill. A fee is charged for businesses that qualify to use the service, to cover the actual disposal costs of their materials.

WWM accepts the following materials as MRW at collection events within the county and at the HazoHouse facility located at the WARC: Auto products; paints; thinners and solvents; pesticides; glues and adhesives; batteries; solvents and cleaning supplies; pool and hobby chemicals; fluorescent light tubes; contaminated kerosene and gasoline; propane tanks; used motor oil; and products containing mercury. MRW is picked up by a hazardous waste contractor and hauled to a permitted treatment and disposal facility in accordance with federal regulations. In 2005, Thurston County's MRW program successfully diverted 622 tons of hazardous materials from the landfill.

WWM's MRW program has been very successful in offering proper handling services for hazardous wastes generated within the county by residents and small businesses. WWM's mobile collection events typically collect between 10 and 20 tons annually, with 23 tons collected at the events in 2005. The permanent HazoHouse facility located at the WARC is able to offer residents with year-round access and collected 598 tons in 2005. The program is estimated to cost \$41 per participant, which is near the middle of county program costs within the state, as summarized by Ecology in the 14<sup>th</sup> Annual Solid Waste Report (Ecology, 2006).

### **Asbestos**

Asbestos is accepted at the WARC when specific material preparation and containment criteria are met by the waste generator. Asbestos is then managed separately at the transfer station and sent to the Roosevelt Landfill for disposal.

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### **2.5 Recycling**

#### **Recycling**

The collection of recyclable materials in Thurston occurs curbside and at specific recycling drop off points. Curbside collection is offered in all cities and unincorporated areas by the MSW hauler for that area. Thurston County adopted an ordinance to require commingled recycling as the minimum level of service to be offered in the county. Starting in February 2007, county residents subscribing to solid waste services are able to place newspaper, cardboard, aluminum cans, mixed paper, and plastic bottles in one container to be collected curbside. Glass will continue to be collected separately, in order to address contamination issues associated with broken glass. Bluebox dropoff recycling area materials as well as County drop box facility recyclables are transported and handled by Pacific Disposal under a contract with WWM. There is a separate recycling dropoff at the WARC which is managed by LeMay under the transfer station contract.

All material received at the WARC is sent directly to markets without further processing. Pacific Disposal sorts the collected recyclables at their MRF in Lacey. Pacific Disposal markets recyclables received from curbside operations separately from the WARC materials.

Curbside recycling accounts for about 10% of the waste stream handled by the solid waste system.

About 1,500 tons of recyclables were collected at the WARC's recycling center in 2005, combined with between 15,000 and 20,000 tons of recyclables from Thurston County residents that was processed at Pacific Disposal's recycling facility. Recyclables are sent to markets in Washington, Oregon, and overseas.

#### **Electronic Waste**

Yard waste is transported as an organic material supply for a composting operation.

E-waste brought to the WARC is collected in the residential drop off area. The collected materials are placed on pallets and wrapped in plastic for shipping to a recycler. In addition to the scale rate for waste disposal, a \$5 handling fee is charged for each electronic item.

#### **Yard Waste**

Yard waste within Thurston County is collected in several ways. In Olympia, Lacey, Tumwater, Cooper Point, and Steamboat Island, curbside yard waste collection is offered along with MSW



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collection services. Residents of Olympia can also bring their yard waste to the City of Olympia Yard Waste Drop-off Center. All other residents wishing to dispose of yard waste must bring it to the WARC. All collected yard waste is sorted at the WARC to send out for composting or energy recovery, as fuel in wood-fired boilers (hog fuel). About 15,000 tons of yard waste was collected at the WARC in 2005, Table 2-1. Large woody items, such as large branches and stumps, are removed from the yard wastes and combined with other wood waste from the C/D waste stream. The remaining yardwaste is then sent to the Little Hanaford Compost Facility in Lewis County for composting. Composting facilities are discussed in more detail in Section 2.7.

There are several other yard waste sources within the county that do not enter the County waste stream. These are primarily crews that chip or shred limbs and branches so that it may be distributed as a mulch produce at the site where it is generated. These functions are generally performed by Washington State Department of Transportation (WSDOT) crews, the County Public Works crews, the City of Olympia, Evergreen State University grounds crews, and others. Since these activities are not typically monitored, it is not possible to estimate the amount of tree and yard trimmings that are managed in this fashion. This also includes residential yard trimmings that are successfully composted at home, as a result of the home composting program sponsored by WWM.

Outdoor burning is another method of managing yard waste and land clearing debris. Outdoor burning is prohibited within all urban growth areas. Burning of yard waste is allowed with a permit in the unincorporated areas of the County. Burning of land clearing debris is regulated by the Olympic Regional Clean Air Agency and requires a permit along with specific weather conditions and supervision. As a result, burned yard waste and land clearing debris do not enter the County waste stream and cannot be quantified

### **Wood Waste**

Wood waste is chipped and sent out as a fuel supply for energy recovery.

Wood waste such as large branches and used lumber is separated and managed as hog fuel. Wood from the construction and demolition waste stream processed at the transfer station pick line is combined with large woody items brought directly to the Yard Waste Drop-off Center. The wood waste is chipped and placed in piles, which are then sent out to Grays Harbor Paper where it is

## ***Current Solid Waste System***

used to heat boilers at the facility. Approximately 13,200 tons of hog fuel was produced at the WARC in 2005 (Table 2-1)

### **2.6 County Solid Waste Administration**

WWM is responsible for the overall administration of the county solid waste program. The program includes all facets of solid waste disposal services that are provided within the county from general policy to final disposal of waste and how to pay for those services.

WWM takes an active role in county solid waste practices through the development of solid waste policies and ordinances. Draft ordinances and resolutions are generally developed by WWM with input from the SWAC before taking the policy before the general public for comment and the County Board of Commissioners for approval. Solid waste ordinances are used to provide a basis of enforceable regulation within the county, such as establishing the minimum level of solid waste service provided to all residents and establishing what materials are acceptable in the waste stream. WWM is responsible for implementing the county ordinances and resolutions as well as state laws and regulations regarding certain solid waste practices. WWM also collects and reports solid waste information to Ecology.

WWM administers solid waste disposal services for the County. This currently includes contracts for the transport and disposal of all solid waste collected within the County via the WARC; for the operation of the transfer station, yard waste, and recycling areas of the WARC; for the operation of the County drop box facilities; and for transporting and composting yard waste. In most parts of the county, collection services are offered by a city sanitation department or by a private contractor that has been granted the exclusive collection rights to that area. The rights are granted by either the UTC in unincorporated areas or through an agreement with the city in incorporated areas of the county. Enforcement of solid waste regulations with these private collection companies is the responsibility of the UTC, after being notified of problems.

WWM administers solid waste planning within the County. Planning efforts are necessary for the general management of solid waste, development of solid waste programs, facility development, etc. Planning enables WWM to define the issues at hand, determine the impacts of the project, evaluate the cost, and determine if the project is in the best interest of the County. After approving new

## ***Current Solid Waste System***

programs, WWM is also responsible for implementation of the program or for obtaining the service through contracts.

WWM is currently managing several solid waste programs such as:

- collection and disposal of MRW, including HHW, from residents and small businesses.
- public education for solid waste reduction, reuse, and recycling;
- organics management, including home composting, yard waste reduction, yard chemicals reduction, and composting workshops;
- large item recycling including autos and building materials;
- hazardous/toxic material identification and disposal practices.
- food waste composting pilot program which will collect food waste from participating restaurants, schools, and hospitals and send the material directly to a compost facility that is approved to receive food waste.

WWM is also responsible for staffing and operating the toll house at the WARC. The toll house is responsible for collecting solid waste disposal fees which are used to fund a portion of WWM's activities (with the rest coming from Ecology's Coordinated Prevention Grants and Community Litter Cleanup Program grants). The toll house is also the source of actual disposal amounts, which is important information for reporting and facility planning.



### **2.7 Solid Waste Facilities**

WWM provides several facilities for the collection and handling and processing of MSW. The WARC is the primary waste handling facility within the county. In addition to the WARC, county residents are provided with three drop box facilities. There are also several private facilities in the County providing services associated with solid waste handling for recycling and composting.

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### **2.7.1 Waste and Recovery Center**

The WARC receives and ships virtually all municipal solid waste generated in Thurston County.

The majority of waste generated within the county passes through the WARC prior to being sent for disposal or recovery. The WARC was built on the Hawks Prairie Landfill, and was opened when the landfill closed in 2000. The landfill had served as the primary disposal facility in the county.

The WARC receives 415 tons/day of MSW, 100 tons/day of C/D waste, 42 tons/day of yardwaste, 4 tons/day of recyclables.

The WARC contains a collection of solid waste facilities, including a toll house, a recycling dropoff center, a yardwaste dropoff facility, a hazardous materials dropoff center (HazoHouse), and a transfer station. The facility is located just outside of Lacey in the northeastern portion of the county along the I-5 corridor. In addition, there is a demonstration garden at the WARC called the "Closed Loop Park". WWM provides space to Goodwill Industries for a collection center at the entrance to the facility. The WARC transfer station was constructed by Allied Waste Industries, Inc. (Allied) and LeMay to serve as the main collection point for all MSW collected in the county to be transferred to the Roosevelt Landfill. On average, the WARC receives about 415 tons/day of MSW, 100 tons/day of C/D waste, 42 tons/day of yard waste, and 4 tons/day of recyclable materials.

The site is accessed from Hogum Bay Road near I-5. The facility entrance first passes a recycling center where users can drop off certain recyclable materials at no charge. The Goodwill collection center is also located along the entrance road, allowing users to drop off clothing and other reusable items at no charge. After the Goodwill collection station the entrance road leads to the toll houses. Two entrance scales measure the incoming weight of the vehicle and attendants then direct the vehicle to the appropriate area to drop off their materials. On weekdays, one scale in each direction is staffed, while on the weekend both scales are staffed for cash customers. After the scalehouse the vehicle may proceed to the transfer station, residential drop box area, recycling, or yardwaste area to unload. The revenue generated by fees at the WARC fund the county's solid waste programs and partial facility operation costs. Disposal fees are collected on the outbound scales of the toll houses.

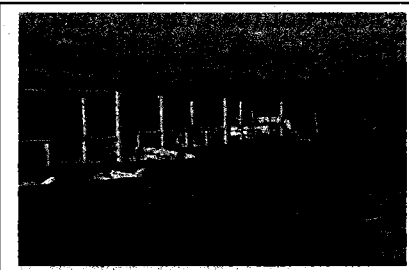
The WARC is equipped with a swipe card system for commercial haulers and frequent contractors to swipe in and out as they cross the scales, allowing for one scale in each direction to be unstaffed. The weight information and account number is transmitted directly

## Current Solid Waste System

to WWM's accounting system, from which a monthly bill is generated.

The transfer station is located on the east side of the facility and generally handles commercial collection truck traffic along with certain large self-haul loads (contractor or resident) that contain a large proportion of recoverable materials (such as wood, concrete, metal, etc.). The facility has 6 tipping lanes, which are directed by a LeMay employee. LeMay directs traffic to specific lanes and provides instructions to self-haulers for tipping materials onto the ground in front of the tipping bay wall to reduce the risk of falling into the pit. After the user leaves the area, the facility operator pushes the materials into the processing floor using a small skid loader. Commercial collection vehicles dump directly over the tipping bay wall onto the processing floor. Material dumped on the tipping floor is segregated on the tipping floor for further separation over a pickline or is directly loaded into the facility compactor by a front end loader. Material segregated for further separation is loaded onto a conveyor belt by an excavator/loader. The pickline is typically staffed by 4 to 6 people and is used to sort wood, gypsum, concrete, metal, and other recyclable materials out of the MSW stream. Separated materials are collected under the pickline in bins and are brought to other areas of the facility as needed after being weighed. The pickline operation salvages approximately 8,400 tons per year of material from the MSW and C/D stream (Table 2-1). The pickline conveyor leads to a second conveyor which has additional pick stations that are not staffed, before dumping directly into the MSW compactor. The compactor is a top loading Amfab 500 which has a maximum capacity of 120 tons/hour, and turns out 29 ton bales in a 15 minute cycle (including load and discharge cycles), which are discharged directly into long haul transfer trailers provided by Allied. The transfer station was designed by Allied as a result of the Transfer Station Development and Service Agreement, discussed in Section 2.8. The contract specified a design capacity of at least 190,000 tons per year, which was the projected volume of waste expected in 2021, based on waste projections developed in 1998. In 2005, the transfer station processed 187,000 tons (Table 2-1), 47,000 tons (34%) more than what was anticipated under the contract, and within 2% of the design capacity of the facility.

The WARC transfer station design capacity was 190,000 tons per year based on a single shift and was expected to last until 2020. The transfer station processed 187,000 tons in 2005.

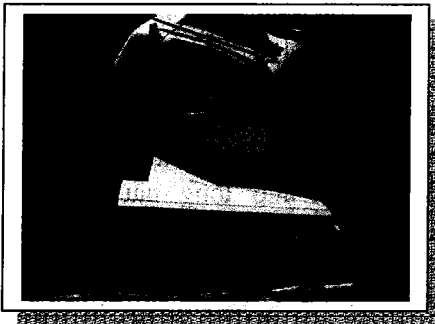


Most non-commercial haulers with MSW and general debris are directed to the self-haul tipping area, consisting of a z-wall equipped with 10 drop boxes which can be used by up to 10 to 15

## ***Current Solid Waste System***

users at a time. A metal frame above the drop boxes helps reduce the risk of a serious falling hazard at the facility. As the drop boxes fill up, LeMay transfers the waste to the transfer station and places an empty drop box back at the z-wall. The self-haul tipping area also has two drop boxes for metals along with other containers for the collection of miscellaneous recyclables. These recycle boxes are located away from the z-wall but in the same general area. By keeping the general public separated from the commercial collectors, LeMay aims to reduce the amount of interference between commercial and non-commercial traffic.

Yard debris is handled at the old composting pad area along with concrete, wood, and gypsum board that have been sorted from C/D waste loads at on the pickline at the transfer station. LeMay has established a moving "green wall" comprised of accumulated yard waste, where self-haulers are directed to dump their materials directly onto the ground. Commercial haulers are directed to dump on the other side of the green wall. LeMay sorts the materials into two piles: yard debris suitable for composting (green waste, small branches, lawn clippings, etc.) and materials suitable for energy recovery, as hog-fuel (large branches, cedar materials, stumps, etc.). Yard waste to be processed as hog fuel is combined with clean wood and gypsum from the transfer station pickline and then processed through a grinder to produce wood chips.



Other wastes accepted at the WARC include asbestos, e-waste, and cathode ray tubes (CRTs) or television sets. CRTs and e-waste are accepted at the facility for the standard disposal fee plus a \$5 special handling fee. Asbestos is accepted for \$105.47/ton and must meet the handling requirements of the transfer station operator (wetted, double bagged, taped closed, and labeled) prior to arrival at the facility. The material is then segregated at the transfer station prior to disposal offsite.

The WWM maintains an MRW collection facility, called the HazoHouse, in the vicinity of the recycling area at the WARC. The HazoHouse is a free service for residents of the County, though a fee is charged for small quantity business users. Hazardous materials collected at the facility are aggregated into drums of similar compatible material types, and are periodically sent out for disposal. The HazoHouse facility is open to receive materials Friday through Monday, and is staffed on Tuesday for the sorting and shipping of materials. In addition, the WWM hosts hazardous materials collection events (WasteMobile) twice per year in the

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spring and fall in areas that are outside of a 10 mile radius of the WARC. WWM offers the WasteMobile service for those residents who cannot easily access the WARC due to distance. Materials collected by these events are managed by the event contractor for disposal. Both the HazoHouse and WasteMobile events are run by the WWM. The HazoHouse facility annual handling has grown from 160 tons of material in 2000 to 598 tons in 2005 since opening. The facility serves about 10,000 residential customers and around 200 small quantity generators (businesses) per year. WasteMobile collection events collect 10 to 20 tons of materials per year with a range of 250 to 1,200 participants. The WWM contracts with Clean Harbors, Total Reclaim, and several smaller service vendors for the transport and disposal of various materials. Under these contracts MRW is transported north to the contractors' facility before being transported for treatment or disposal.

Following processing, the MSW leaving the transfer station for disposal includes MSW materials brought into the facility, as well as the remaining C/D waste after processing on the pickline, railroad ties, and waste from Public Works activities. Outgoing MSW is transported as a compacted bale in a transfer container via truck down I-5 to the intermodal rail loading facility in Centralia, Lewis County. The trip is approximately 32 miles one way and a typical transfer truck makes the round trip in about 2 hours. From the rail yard, the waste containers are transported via rail to the Roosevelt Regional Landfill in Klickitat County, a distance of about 250 miles from the WARC. The Roosevelt Landfill is the final disposal facility for all of the County's MSW, asbestos, and special waste.

Recyclables received at the WARC recycling area include glass, plastics, paper, cardboard, and metal.

Recycling materials received at the WARC are segregated into recycling bins that are labeled by material. Recyclable materials collected at the WARC are not processed at the WARC but sent directly to processors and mills by LeMay. Markets are generally located in Washington, Oregon, and overseas.

Compostable yard waste coming from the yard waste operations is sent down to the Little Hanaford Compost Facility which is located in Lewis County outside of Centralia. About 2 trucks per day are sent to the facility during the growing season. Trucks to the facility can make the roundtrip in about 2 hours. Hog fuel is sent to Grays Harbor Paper, where it is used to fire boilers at the facility. Grays Harbor sends trucks to the WARC to collect between 2 and 10 trucks of hog fuel per day.

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MRW disposal is handled through waste brokers and is sent directly to the treatment and disposal facility (a Subtitle C landfill and incineration facility operated by Clean Harbors in Utah).

### 2.7.2 Drop Box Facilities

Three rural drop box facilities provide solid waste disposal and recycling services to parts of the County that are distant from the WARC.

Thurston County maintains three drop box facilities in rural areas of the county as part of their minimum level of service to county residents. The operation and maintenance of the drop box facilities at Rochester, Summit Lake and Rainier is provided by the WWM. However, the hauling of waste from the Rochester and Rainier facilities is contracted to LeMay through the WARC operation contract, and they are responsible for staffing, servicing, and general upkeep of the facilities. Hauling of waste from the Summit Lake facility is contracted to Pacific Disposal. Hauling of recyclables from the three drop box facilities is contracted to Pacific Disposal under a separate contract. The drop box facilities are open several days per week. Rochester, the most utilized drop box facility, handled 2,700 tons of MSW in 2005; Rainier handled 1,000 tons, and Summit Lake handled 150 tons.



**Rochester** – The Rochester facility is located in the southwest part of the county, approximately 29 miles southwest of the WARC, and offers solid waste and recycling collection. The facility is open Tuesday, Saturday, and Sunday. The recycling area is designed so that traffic flows through with one center lane as a bypass lane and one lane on each side for vehicles to stop to unload recyclables. There are a total of 7 – 25 cubic yard (CY) drop boxes: 2 for plastic bottles, milk cartons and drink boxes, 3 for aluminum and tin cans, glass bottles and jars and 2 for newspapers and mixed paper with a separate plastic bag compartment. There are 14 – 8 CY front loader cage type containers to recycle cardboard and 2 containers for recycling clothing. The solid waste area has a z-wall configuration with 12 tipping lanes in front of 6 – 40 CY open top containers in a z-wall for customers to dump into. Customers are separated from the open top containers by yellow bars designed to keep customers from falling into the containers. Two extra 40 CY containers are positioned on the back side of the z- wall. Two County employees staff the solid waste area of the facility charging customers for waste material \$10.94/CY plus taxes and fees. Fees collected at the Rochester drop box facility are sufficient to cover operational costs.

**Rainier** – The Rainier drop box facility is located in the southeast portion of the county approximately 17 miles southeast of the



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WARC and offers solid waste and recycling collection. The facility is open Friday and Saturday. There are five recycling drop boxes: 2 for plastic bottles and milk cartons, 2 for metal cans and glass bottles and 1 for paper in addition, 4 front load containers collect cardboard. The solid waste area has a z-wall configuration with 8 tipping lanes in front of 4 – 40 CY open top containers in a “Z” wall for customers to dump into. Yellow bars reduce the risk of a falling hazard for customers. There are no backup containers kept at this facility. County employees work the solid waste area of the facility charging customers for waste material at the same rate as Rochester. Fees collected at the Rainier drop box facility are sufficient to cover operational costs.

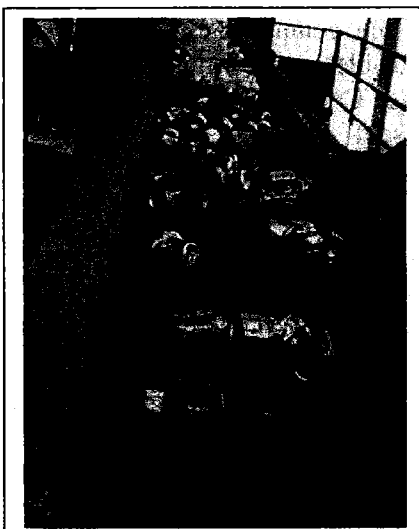
The Summit Lake drop box facility must be subsidized by fees collected at other County facilities since the volume of material and fees collected at Summit Lake do not cover operational costs.

**Summit Lake** – The Summit Lake drop box facility is located in the northwest portion of the county approximately 22 miles west of the WARC and offers solid waste and recycling collection. The facility is open on Sundays only. Due to the extremely low volume of material collected at the Summit Lake facility LeMay equips the facility with a self compacting drop box which has a 1 CY hopper and a 30 CY capacity, enabling waste to be stored in a closed container when the facility is not open. Recycling drop boxes are also included at this facility. The same rate as Rochester and Rainier is charged for waste material at Summit Lake. The Summit Lake drop box facility must be subsidized by fees collected at other County facilities since the volume of material and fees collected at Summit Lake do not cover operational costs.

### **2.7.3 Private Waste Facilities**

#### **Pacific Disposal Material Recovery Facility**

Pacific Disposal operates a MRF where collected recyclables can be sorted and consolidated for shipping to markets. The facility has two sort lines and two bailers contained in a 22,000 square foot building. The sort lines are generally used for papers and commingled containers. Office paper and shredded paper is processed over one line into a hi-grade office paper product and shred. Containers are sorted over the second pick line which separates steel, aluminum, and various grades of plastic. Newspaper is generally dumped directly on the facility floor and loaded out to markets as a loose commodity. Gypsum is separated and sent to the WARC for processing with the yard waste going for composting. Pacific Disposal recycling collection vehicles dump source separated materials at a “z-wall” into 40 CY open top containers.



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The collected material may be minimally sorted to remove contaminants. Pacific Disposal also collects commercial/office paper, commercial cardboard, and office paper shred. Office paper and cardboard is processed over the sort lines on an occasional basis if it is necessary. There is also a small material buy back center located at the MRF for aluminum and steel containers.

The City of Olympia hauls commingled materials to the Pacific Disposal MRF where the materials are dumped on an elevated platform and then consolidated into long-haul containers for delivery to SP Recycling in Portland. In addition to their Thurston County collections, the Pacific Disposal MRF also receives materials from Evergreen State College, Pierce County LeMay operations, and Lewis County LeMay operations. The out-of-county loads are generally limited to commercial loads. The MRF processes approximately 36,000 tons per year from the County and other sources, and materials are sent to several markets in Oregon, Washington, or overseas.

Implementation of single stream commingled recyclables collection within Thurston County will change the processing that will be done at the facility. All commingled recyclables that are collected curbside will be sent to a new SP Recycling facility in Frederickson (near Tacoma) for processing. The Pacific Disposal MRF will continue to receive and process commercial recyclables and the recyclables received at the county drop box facilities.

The LeMay hauler servicing the southern portion of the County commingles the collected recyclables and sends the material directly to a sorting facility in Portland, Oregon. The hauler servicing the eastern portion of the county (mainly Yelm) also commingles the collected recyclables and sends the material directly to a sorting facility in Pierce County. The amount of county generated recyclables that is sent to other jurisdictions for processing is less than 100 tons/month.

### **SP Recycling in Frederickson**

SP Recycling is opening a new recyclables sorting facility in Frederickson, Pierce County. The facility will be processing single-stream commingled materials from Thurston County in addition to materials from other counties. The facility has been sized to adequately handle the anticipated material stream, as well as to accommodate growth. As dictated by the market it can be expected

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that the facility will expand to meet demand or that another facility will open in the northwest Washington area.

### **Silver Springs Composting Facility**

A new composting facility is being constructed at the Silver Springs Ranch near Tenino. The facility is expected to open in early 2007 and will have a constructed capacity of 60,000 tons per year, and a permitted capacity of 120,000 tons per year. The facility will be permitted to handle multiple organic waste types including pre- and post-consumer food waste, yard waste, and animal waste. The facility expects to receive material from the Seattle/Tacoma area as well as from Portland. The facility will employ a composting system developed by Engineered Compost Systems, Inc. which will incorporate a covered compost pile located on a compost pad with a vacuum aeration system. The aeration system will develop a negative air pressure in the compost pile collecting odors from the pile and routing it through a biofilter for odor control. The facility will also have lined retention ponds for stormwater control and use. Using this system, Silver Springs expects to produce compost product in 45 days with three turns of the compost windrows, which will satisfy state requirements for finished compost. However Silver Springs is planning an additional aging period of about 30 days to produce a higher grade of compost product. A majority of the compost produced at the facility will be used in the cattle operations at the ranch, with some local sale of bulk finished compost as volumes increase. The Silver Springs facility could be utilized by the WWM during the food waste composting pilot program.

### **Little Hanaford Composting Facility**

WWM's compostable material is currently sent to the Little Hanaford Compost Facility which is located east of Centralia in Lewis County. The facility reports 40,000 to 60,000 tons processed in 2005. According to the Lewis County Health Department the facility permit does not identify a volume limit on operations at the facility, but instead requires that all storm and runoff water is captured and re-used in the composting process. This facility receives numerous feedstocks from various sources. Some are utilized on a seasonal and weather related basis. Some of these are: hog fuel, yard waste, chicken and fish slaughter solids, hay, coal ash, sheetrock and sawdust. There may be more at certain times. Most of yard waste comes from Thurston County with some from

## ***Current Solid Waste System***

Lewis County, and public dropoff. The process is to turn the compost pile weekly for approximately 6 weeks and then move to a storage/curing area for 6 to 12 months.

The site is approximately 6 to 10 acres with a composting pad of about 1.5 to 2 acres. The operators have 160 acres of surrounding land on which they might expand; however most of it is lower in elevation causing uncertainty with water ponding issues. Finished compost is marketed to local government operations, contractors, school districts, landscapers and gardeners. Approximately 80,000 to 120,000 CY of compost is sold a year.

### **Soil Key Composting Facility**

The Soil Key composting facility is located approximately 17 miles south and west of the WARC transfer station and is 10-15 minutes off of I-5. The facility owns 97 acres and is currently operating on only 50 acres; expansion is possible on the remaining area. The facility is permitted by the Thurston County Health Department. A positive air bio-filter is used at the facility in the initial process site to help reduce odors. The facility is working with consultants for improvement of the current bio-filter system.

The facility is permitted for the processing of Class B biosolids, (100 wet tons per day, 500 tons per week and 2000 tons per month), grit sewage, chicken feathers, and other chicken processing wastes. Class B biosolids have detectable amounts of pathogens remaining after final treatment at the generating waste water treatment facility. They are not permitted for pre- or post-consumer food waste or any other feedstocks at this time.

Biosolids are blended daily with the daily delivery of chicken products along with hog fuel, and are then processed indoors until the required pathogen reduction has been reached. The initial process is approximately 14 days with consistent temperature monitoring and then is moved to a secondary process period of 14 days also indoors. This process is for a minimum of 3 to 4 weeks. Incoming yard debris and hog fuel is ground and stored onsite to mix with biosolids as they arrive. There is sufficient space to receive yard debris in large quantities.

Biosolids are received from the Lacey, Olympia, Tumwater, Thurston Alliance (LOTT) waste water treatment plants between October and March. Approximately 6,700 wet tons of biosolids were delivered to the facility by the LOTT treatment plants in 2005.

## ***Current Solid Waste System***

Curing takes place outside on an asphalt pad and volume reduction is about 30% of the annual tonnage resulting in approximately 50,000 CY available for market to WSDOT and landscapers. The curing process takes place most of the winter and spring at which time the oldest pile is screened and made available for market.

### **2.8 Solid Waste Contracts**

Thurston County maintains several contracts for solid waste services offered in the county. The following discussion is a summary of the services and terms of the major solid waste contracts.

#### **Transfer Station Development and Service Agreement**

The Transfer Station Development and Operation Agreement with Allied/LeMay resulted in the construction of the WARC transfer station and provides for a period of operation through 2020.

Under the original terms of the Transfer Station Development and Service Agreement WWM contracted with Allied/LeMay to design, construct, own, equip, and operate a transfer station on leased property at the Hawks Prairie Landfill. Responsibilities of the contractor were divided so that Allied was responsible for designing and funding the construction of the transfer station. LeMay is responsible for the operation and maintenance of the transfer station. The agreement includes the operation of the existing County drop box facilities at Rainier and Rochester as well as the public tipping area at the transfer station, and to equip each with drop boxes. The contractor is also required to achieve a 10% material recovery rate (later amended to 5%) or pay fines for recovery less than the target rate. Ownership of acceptable waste is transferred to the operator once it is delivered to the transfer station.

Under the original contract, the WWM agreed to pay Allied for the services described; ensure that waste generated and collected within the County is directed to the transfer station to the extent possible by law; pay for improvements to Hogum Bay Road; perform an environmental audit of the site prior to construction and perform remediation if necessary; conduct a waste stream analysis to establish baseline information for the target recovery rate requirement; conduct additional waste stream analyses on a four year basis; pay incentives for exceeding the recovery rate requirement; make a reasonable effort to cooperate with Allied to provide assistance and information as needed; make the transfer station available to Allied on a defined daily schedule; and to continue to maintain ownership of the Hawks Prairie Landfill site. WWM is required to maintain records of all items affecting the

## ***Current Solid Waste System***

calculation of the service fee; and to staff the entrance gate and tollhouse. The contract also allows for an option to purchase the transfer station facilities during the term. The contract was executed in 1998 for an initial twenty year term beginning at the outset of facility operation in 2000 with the possibility to renew for an additional five more years. The original contract has been amended three times since it was signed.

An amendment to the contract was entered in 1999, in which the county exercised their option to purchase the transfer station and equipment and revise the service fees to reflect the purchase. The amendment also states that the operation of the transfer station will remain under the terms of the original contract.

An amendment to the contract in 2000 expanded the contractor's operation responsibilities to include the Recycle Center, and to perform certain landfill closure activities.

The 2005 amendment to the Transfer Station Operation Agreement modified the recovery requirement for the transfer station to 5% and established new criteria for penalties and incentives. In return the amendment also increased the projected annual tonnage to be processed at the transfer station through the year 2021. This modification was made because the contractor had not been able to meet the 10% goal on a consistent basis and a subsequent waste stream analysis demonstrated that the amount of recoverable material was less than previous thought. In addition, the volume of material handled at the transfer station had begun to outpace the contract amount so an adjustment of the tonnage was necessary.

## ***Current Solid Waste System***

The Waste Export and Disposal Agreement provides for the transport and disposal of waste from the WARC to Roosevelt Landfill by Allied/LeMay. The contract expires in 2010.

### **Waste Export and Disposal Agreement**

WWM contracted with Allied for waste that has been loaded into trailers at the transfer station to be accepted by Allied, and for Allied to transport that waste to Allied's disposal site (the Roosevelt Landfill). Allied has agreed to accept ownership, handle, store, unload, transport, and dispose of acceptable waste that is delivered to Allied in trailers at the transfer station; own, operate, and/or lease facilities necessary to perform these transport operations; and maintain closure and post-closure funds for all facilities. The agreement goes on to require the contractor to maintain a performance bond; maintain adequate records; maintain and pay for permits and taxes; provide and maintain long-haul transfer trailers; and provide sufficient trailers for up to three days of waste accumulation.

Under the contract, WWM has agreed to pay Allied for the services described; ensure that the transfer station operator complies with the terms of the Transfer Station Construction and Operation Agreement.; ensure that waste generated and collected within the County is directed to the transfer station to the extent possible by law; make a reasonable effort to cooperate with Allied to provide assistance and information as needed; make the transfer station available to Allied on a defined daily schedule; and to provide the transfer station at the Hawks Prairie Landfill site. WWM is required to maintain records of all items affecting the calculation of the Service Fee; and to pay for damage to transfer trailers beyond normal wear and tear.

The contract was executed in 1998 for an initial ten year term beginning with the start of operations in 2000 with the possibility to renew on an annual basis for a maximum of ten more years.

### **Compost Facility Operations**

WWM contracted with LeMay to staff, equip, and operate a compost receiving area at the WARC, for material received from the general public and commercial generators. The agreement calls for LeMay to load and transport the material to an off-site permitted compost, hog fuel, or other processing facility. WWM agreed to compensate LeMay for services provided and to provide a receiving area for the yard waste operations (the former Compost Facility at the WARC).

## *Current Solid Waste System*

The compost operations contract duration is five years, terminating on June 30, 2008, with an option to extend to 2013.

### Recycling Drop-Off Facilities

WWM's contract with Pacific Disposal is to maintain and operate WWM's multi-material drop-off centers through 2007.

## 2.9 Solid Waste Generation

**Total WARC Materials  
(Recycled, Diverted, or  
Disposed)  
(From Table 2-1)**

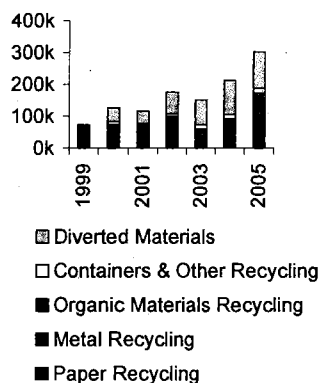
| Year | Total<br>(Tons) |
|------|-----------------|
| 1999 | 153,547         |
| 2000 | 174,235         |
| 2001 | 163,120         |
| 2002 | 173,747         |
| 2003 | 187,709         |
| 2004 | 193,687         |
| 2005 | 203,893         |

Collection information for waste generated within the County exists in many places and generally accounts for MSW disposal, recycling, and recovery. The following discussion is based on information obtained from various sources and is used to establish a general understanding of the solid waste generation patterns within the County.

### County Waste Data

WWM provided records from their solid waste accounting system, which detailed the annual collection of materials received at the WARC from 1999 through 2005, Table 2-1. The record provides a summary of recyclables received at the Recycling Center, materials pulled out of the solid waste stream at the transfer station pickline, outbound composting materials and CRTs, incoming MSW, incoming C/D waste, incoming yard waste, and incoming miscellaneous commodities. The record lists the quantity in tons, revenue generated at the toll house, and the total number of transactions recorded at the toll house. It should be noted however, that the records only include waste that is processed through the WARC. This analysis does not account for materials that may be generated within Thurston County, but transported outside of the county. WWM also does not differentiate between county and non-county users of the WARC, so, by default waste originating outside of the county disposed of at the WARC is included in this analysis

**County Diversion (tons)  
(from Table 2-2)**



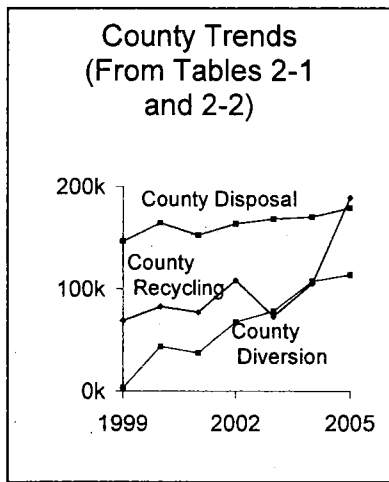
The information from the WWM's annual summaries were reorganized to provide a compilation of materials received at the WARC and tonnage of outbound materials after processing. The materials categories were combined and simplified to several major categories so that the outbound streams from the WARC consist of MSW, asbestos, recyclables, composting, hog fuel, CRT, and MRW. Inbound MSW and C/D waste is processed over the transfer station pickline, where material is recovered and redirected for



## *Current Solid Waste System*

recycling or hog fuel. The recovery aspect of the transfer station operations allows WWM to reduce the overall amount of waste being disposed of and to redirect it to a beneficial use, in this case for recycling or for energy recovery. As shown in Table 2-1 the County's total MSW disposal (after processing through the WARC) has increased from 147,000 tons in 1999 to 179,000 tons in 2005. In 2005, of the 187,000 tons of incoming MSW and C/D, approximately 8,400 tons (4.5%) of material was recovered.

Recycling information for the County was obtained from annual Ecology recycling survey results. The recycling survey is compiled by Ecology and is a summary of all reported recycling efforts that occur within the county, including those that occur at the WARC and at the Pacific Disposal MRF. Annual recycling results were compiled for 1999 through 2005 and have been organized into general material types of paper, metal, glass, plastic, vehicle related, organic materials, and other, Table 2-2. The survey also details materials that Ecology considers to be diversion instead of recycling. Residential diversion is made up of those materials that are not considered to be part of the US Environmental Protection Agency defined waste stream but that have been handled through means other than disposal in a landfill (antifreeze, carpet pad, oil filters, paint, and used oil that is used for energy recovery purposes). Between 1999 and 2004, the County has recycled 69,000 to 105,000 tons each year, with a significant increase to 189,000 tons in 2005. The large increase in 2005 may be an anomaly due to an additional 69,000 tons of wood waste recycling reported. Diversion in the County has dramatically increased from 3,600 tons in 1999 to 114,000 in 2005. Most of this increase appears in the asphalt, concrete, and land clearing debris categories. Due to the very large and inconsistent growth patterns for diversion, it is not included in the summary that follows.



Trends in the solid waste data have been broken down to estimate MSW disposal and recycling generation within the County, Table 2-3. MSW disposal has increased from 147,000 tons in 1999 to 179,000 tons in 2005 (an average annual rate of 3% per year). Recycling has increased from 69,000 to 105,000 tons in 2004, with a dramatic increase to 189,000 tons in 2005 which is most likely an anomaly, giving an average rate of 9% per year between 1999 and 2004. From 2000 to 2005, diversion has grown at an average rate of 21% per year. Discrepancies in recycling and diversion amounts may exist since reporting to Ecology is voluntary. In addition, new

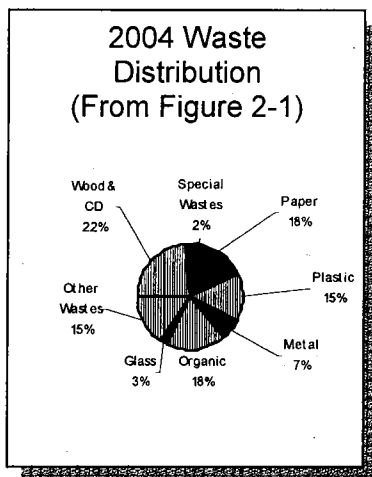
## Current Solid Waste System

materials added to the reporting list in 1999 may have skewed the average calculation.

When the information in Table 2-3 is reviewed in reference to the population of the county, individual trends in solid waste generation are apparent. MSW and recycling generation can be calculated on a per capita basis by dividing the total solid waste by the total population. The per capita generation rate is different from the overall county generation increase since it eliminates the impact of population growth and gives insight into the patterns of individuals. Between 1999 and 2005 the county's population increased from 203,000 to 224,000, an average rate of 1.69% per year. In this same time interval, MSW generation increased at an average rate of 1.65% per year per capita.

MSW and recycled and diverted materials increased from 219,000 tons to 482,000 tons between 1999 and 2005. On a per capita basis this increase is about 14% per year.

### Waste Characterization Study



In 2004, Green Solutions prepared a Waste Composition Study for Thurston County (Green Solutions, 2005). The study evaluated waste being received at the WARC and characterized the waste by randomly obtaining samples of materials from different users and sorting the samples. The study concluded that the overall annual amount of waste being received at the WARC was significantly higher than expected, with a significant portion coming from C/D waste and on an increased per capita waste generation rate; that wood had surpassed food waste as the largest component of the solid waste stream; that a portion of the wood, C/D waste, and yard debris arriving at the WARC is relatively clean and could easily be recycled; the amount of yard debris in the waste stream had increased significantly since 1999. A breakdown of the material make-up of the County waste stream is presented in Figure 2-1.

### MRW

Nationally, MRW represents 1% of the disposable waste stream. Based on the nationwide figure along with the County's disposal amount for 2005 (179,000 tons), Thurston County residents generate approximately 1,800 tons of MRW annually, while 621 tons were collected through the MRW program. This indicates that the program is successfully collecting about 35% of the MRW that is generated within the county. However, this also suggests that

## ***Current Solid Waste System***

nearly 1,200 tons of MRW are improperly disposed of within the County waste stream.

### **2.10 Funding**

Solid waste services provided by WWM are paid for entirely through solid waste rates and charges, Ecology grants, and interest on various solid waste funds that are maintained by the County. The current disposal fee for the WARC is \$72.46/ton plus taxes and fees for MSW and C/D waste, and \$35/ton for yard waste. A \$5 special handling fee is charged for each e-waste item received at the WARC.

WWM maintains landfill post-closure and equipment accounts with the county treasurer. The post-closure account is a fund that is required by Ecology to be established and funded to maintain closed landfill over a 30 year period. WWM established their account for the Hawks Prairie Landfill with a portion of the user fees collected while the landfill was in operation. Principal and interest in the account are now used to maintain the closed landfill.

WWM has created a solid waste rate model that is used to establish disposal rates and is reviewed annually. The model was originally used to set rates for a four year period, but it was found that with annual rate adjustments, the increase could be minimized making changes more acceptable to facility users. The model attempts to account for all upcoming expenses, such as transfer station operation and disposal costs, equipment costs, consulting costs, MRW expenses, special events and programs, etc. The model then projects the facility use and incoming tonnage to develop an appropriate usage fee that will cover all anticipated expenses, as well provide a small reserve for unanticipated expenses. The model is forward thinking in that it is used to plan and accumulate funds prior to major expenses, rather than to pay for expenses after they occur. This setup allows WWM to be flexible with their programs and also does not rely on municipal bonds to finance solid waste operations. The model has also allowed WWM to maintain low disposal fees since it is not paying additional interest or bond service.

## ***Current Solid Waste System***

### **2.11 Regional Considerations**

Although this assessment focuses on the solid waste services and facilities located within Thurston County, the scope of work also includes looking at the regional area including neighboring counties such as Pierce, Lewis, Mason and Grays Harbor. The purpose of considering regional solid waste management is to include the possibility of identifying cost sharing opportunities with other counties while attempting to lower cost and provide more user-friendly solutions for solid waste services to Thurston County residents. It is recognized that there are some administrative barriers to cross-county use of solid waste facilities; however, if the incentives are great enough, they can help overcome such barriers.

Given that disposal rates in Thurston County are lower than in Pierce County, and for some residents the Thurston County facilities are much closer than the Pierce County facilities, there is motivation for Pierce County residents to use the Thurston County facility. In Lewis, Mason, and Grays Harbor counties, the population center has a solid waste facility that is closer than neighboring Thurston County facilities, therefore, there is less motivation for residents of those counties to drive to Thurston County.

The following solid waste facilities are located near the Thurston County Line and could influence planning of new Thurston County facilities.

#### **Lewis County**

The Lewis County Central Transfer station is Centralia, about 5 miles south of Thurston County along Interstate 5. This transfer station offers solid waste disposal as well as recycling and diversion opportunities. Disposal fees at the facility are \$82/ton. The facility is open Monday through Saturday. All waste is hauled to the Centralia intermodal yard for loading onto railcars that are transported to the Roosevelt Regional Landfill in Klickitat County.

## ***Current Solid Waste System***

### **Pierce County**

The City of Tacoma operates a transfer station at the old Tacoma city Landfill, about 15 miles northeast of Thurston County along Interstate 5. This transfer station offers waste disposal and recycling services. Disposal fees at the facility are \$114/ton.

LRI Disposal operates the Hidden Valley Transfer Station in Puyallup, about 20 miles northeast of the county line. The general disposal rate for county waste is \$96.31/ton, and recycling opportunities are available.

All waste received at the transfer stations within Pierce County are hauled to the LRI Landfill for disposal.

Recovery 1, Inc. operates a C/D waste recovery facility in Tacoma, about 20 miles north of the County. The facility accepts clean construction and demolition waste (commingled debris) for \$56/ton, and clean wood for \$20/ton. The material is processed and sent to markets or for energy recovery.

### **Mason County**

The Mason County transfer station is located approximately 12 miles northwest of Thurston County along Highway 101, outside of Shelton. This transfer station offers solid waste disposal and recycling services. Disposal fees at the facility are calculated to be equivalent to \$115/ton (based on a loose rate of \$13.80/CY). All waste in Mason County is hauled to the transfer station for hauling to rail head in Lewis County at Centralia, for transport to Roosevelt Regional Landfill in Klickitat County.

### **Grays Harbor County**

The Elma transfer station is about 8 miles west of Thurston County along Highway 8. The facility is operated by LeMay. This transfer station offers solid waste disposal services only. Disposal fees at the facility are calculated to be equivalent to \$230/ton (based on a loose rate of \$28/CY). All waste is processed through the main transfer station in Aberdeen and is then sent to the rail head in Lewis County at Centralia, for transport to the Roosevelt Regional Landfill in Klickitat County.

## ***Section 3***

## ***Waste Projection***

- 3.1 Population Projection
- 3.2 Waste Projection
- 3.3 Waste Distribution
- 3.4 Regional Growth

Waste generation by a population changes from year to year. Factors influencing the amount of waste generated each year are changes in population and changing consumer habits, which are greatly influenced by the economy and purchasing or packaging trends. General waste-generation trends can be observed by compiling waste data for an entire population over several years. These trends can then be used to project the amount of waste that may be generated and disposed of in the future.

### **3.1 Population Projection**

The population of the county is expected to increase by 66 percent by 2030, to 373,000.

The Thurston Regional Planning Center (TRPC) maintains and updates the County's population projections as a requirement of the Growth Management Act (GMA). In 2005, the TRPC adopted a population projection equivalent to the intermediate projection prepared by the Washington State Office of Financial Management. Based on this information, the TRPC has prepared GIS information showing the projected distribution of the population throughout the county on five-year intervals through 2030. Capital Facilities Plans developed for GMA compliance are analyze data on six-year (short-term) and 20-year (long-term) timeframes. For the purposes of this planning document, it was determined that the population projections for 2015 (eight years) and 2030 (23 years) would be appropriate in satisfying these requirements. In both planning horizons, the dates are longer than the required GMA period. The population of Thurston County is expected to increase by 66 percent by 2030, from 234,000 to 373,000.

The population within the County is not evenly distributed, but is concentrated in various cities and towns. TRPC's population projection has been assigned in enough detail that it is possible to develop a picture of the population densities within the county, and is shown in Figures 3-1 and 3-2 for the years 2005 and 2030, respectively. In general, population is projected to continue to increase in density, primarily in the defined Urban Growth

## Waste Projection

Boundary areas. Moderate population-density increases can be seen in the unincorporated areas of the County.

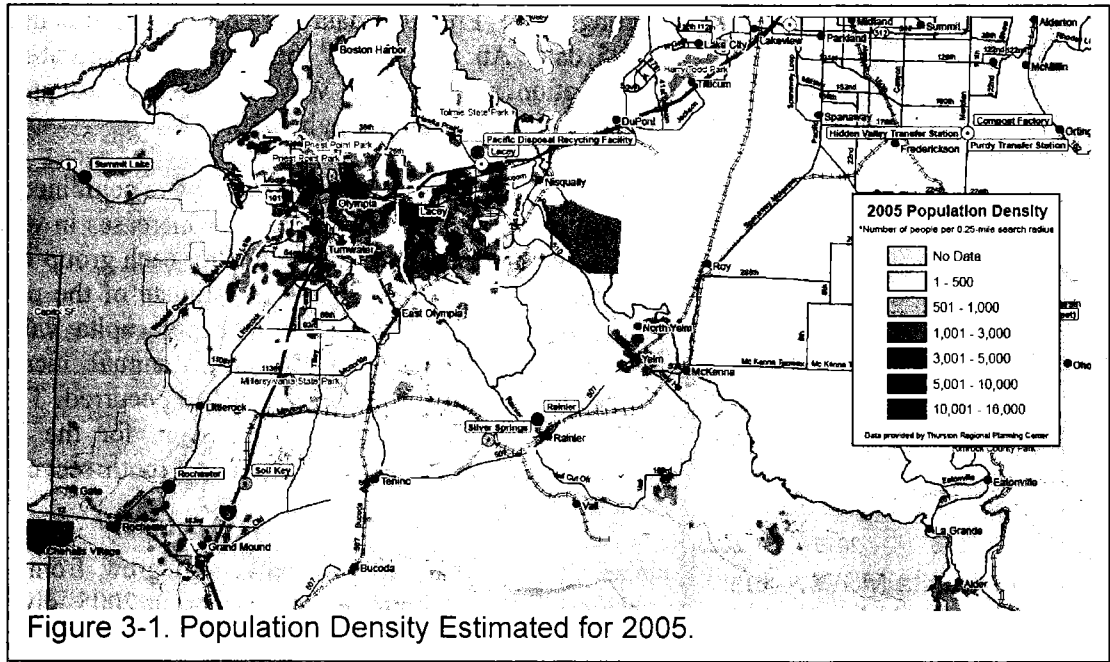


Figure 3-1. Population Density Estimated for 2005.

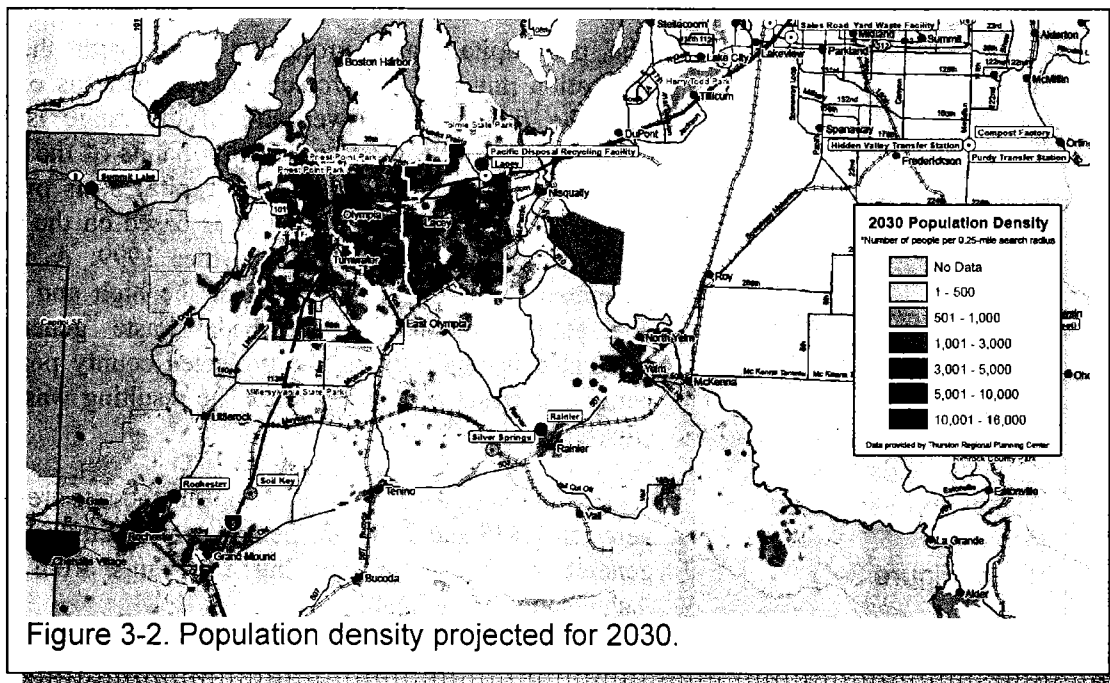
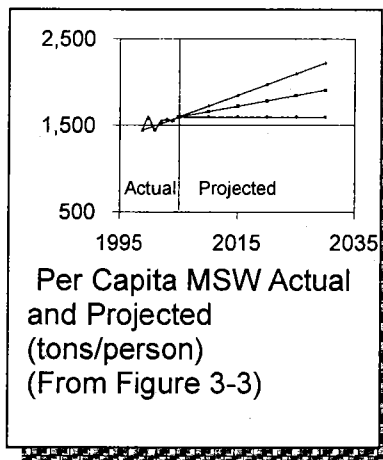


Figure 3-2. Population density projected for 2030.

**3.2 Waste Projection**

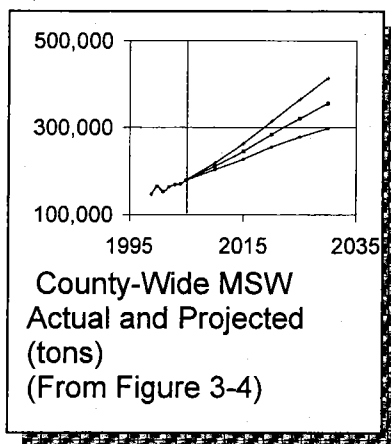
Detailed historical waste data were provided by WWM for 1999 through 2005. Pre-1999 data were not comparable in detail to 1999-2005 data. An analysis of the trends, incorporating the detailed information provided by WWM, was used to prepare a waste-generation projection through 2030.

Annual MSW disposal and recycling were combined to provide the total waste generation. To correct for increases in waste generation due to population growth, the totals for each group were divided by the county population to give an estimate of the per capita waste generation and disposal rates. The per capita values were then evaluated to determine the average annual increase in waste generation and MSW disposal that had occurred. This information was prepared for the recycling stream, for the MSW disposal stream, and for total waste generation (both recycling and MSW disposal).



Waste generation (MSW + recycling) grew from 2,128 lbs per person in 1999 to 3,281 lbs per person in 2005, giving an average annual increase of approximately 78 lbs per person per year. Looking at the MSW portion alone, 1,446 lbs/person were disposed of in 1999 and grew to 1,596 lbs/person in 2005, an increase of about 25 lbs per person per year.

The per capita waste projection starts with the 2005 waste-generation number and projects several patterns of waste growth over the future. The lower end of the range is based on the assumption that the waste-generation habits of the population will not change on the individual (per capita) basis over the next 20 years. The upper end of the range is based on the average annual increase that has been observed since 1999. A middle value is generated by taking the average of the high and low per capita generation estimates. County-wide waste generation is then calculated by multiplying the projected county population by the per capita waste-generation rate. The resulting waste projection is contained in Table 3-1



As shown in Figure 3-3, MSW disposal amounts are estimated to be between 1,596 and 2,221 lbs/person/year by 2030. Per capita waste generation (disposal + recycling) may range from 2,650 to 4,600 lbs/person/year by 2030.



## ***Waste Projection***

The calculated county-wide waste generation is shown in Figure 3-4. The county-wide waste generation represents the total amount of waste generated within the county and includes the influence of population growth on the solid-waste stream. It is important to note that the per capita projection showing no annual increase in Figure 3-3 corresponds to the lowest line in Figure 3-4, which continues to show an annual increase due to projected population increase. Waste generation projections for 2030 range from 490,000 to 860,000 tons, depending on the per capita generation rate assumption. The MSW disposal rate (waste to landfill) varies between 300,000 to 410,000 tons in 2030, depending on the per capita generation rate assumption.

Using current waste-generation information, the 2030 waste stream may consist of 680,000 tons of total waste that is made up of 360,000 tons of MSW for disposal, and 320,000 tons of materials to be recycled.

The rest of the discussion in this report will focus on the mid-range waste projection and reflects that while waste generation may continue to increase, efforts in the areas of waste diversion and recycling will be successful in moderating the annual rate of increase for per capita waste generation. Therefore, in 2030 the waste stream would consist of 680,000 tons of total waste that is made up of 360,000 tons of MSW for disposal, and 320,000 tons of materials to be recycled.

Not all of the waste generated within the county is disposed of. A large portion of it is diverted from the waste stream (for reuse or recycling) before it goes to the WARC. For example, in 2005 the County generated 297,000 tons of waste, of which 204,000 tons was collected at the WARC. The material collected at the WARC was processed to remove more of the recyclable materials, resulting in 179,000 tons of waste that was disposed of at the Roosevelt Landfill. Based on the amount of material received at the WARC in 2005, it is projected that the WARC could receive 460,000 tons by 2030. This suggests that the capacity of the facility will have to be increased in order to handle the projected 360,000 tons of MSW for disposal, as well as to remove and process at least 100,000 tons of recyclables and yard waste (and other organics) from the incoming waste stream.

Thurston County MRW generation is projected to increase from 1,800 tons in 2005 to 3,600 tons in 2030.

Another portion of the waste stream is made up of MRW. MRW is estimated to represent 1 percent of the disposed-of MSW stream on a national basis. Based on the 1 percent national estimate, approximately 1,800 tons of MRW may have been generated in Thurston County in 2005, which would grow to 3,600 tons in 2030, at current rates of generation.

# Waste Projection

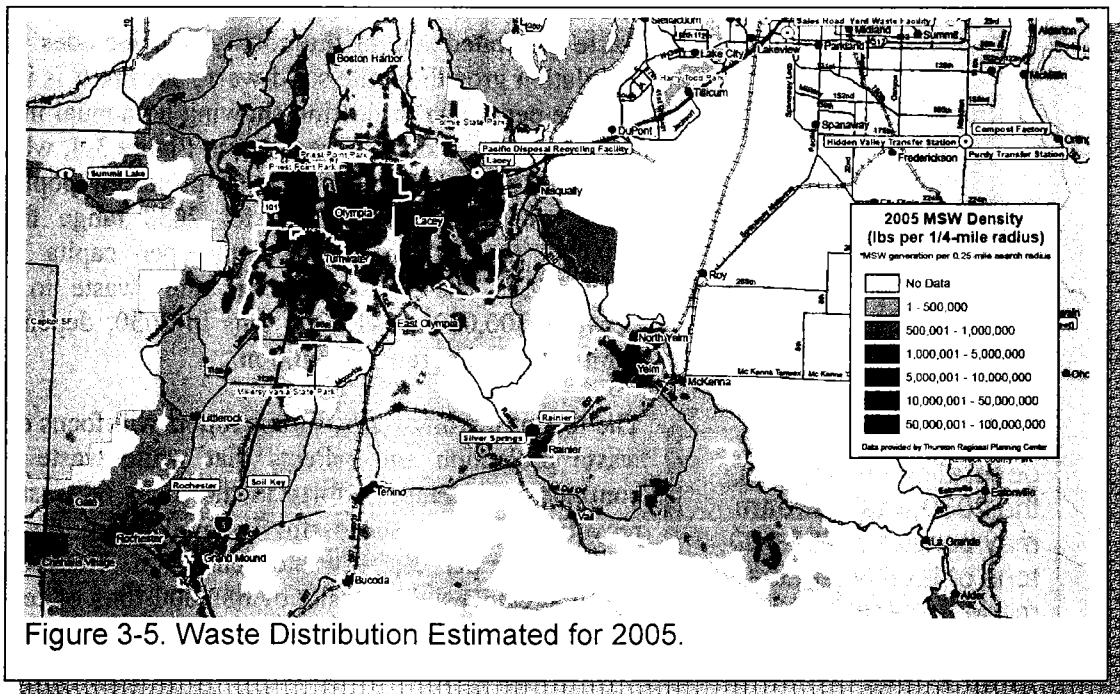


Figure 3-5. Waste Distribution Estimated for 2005.

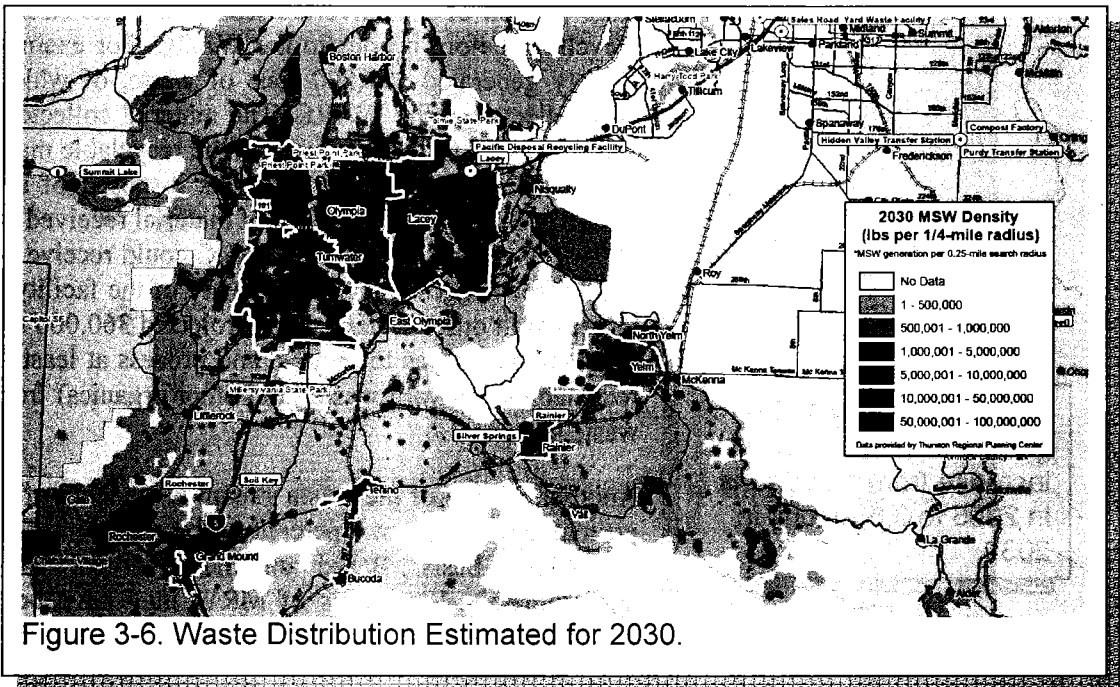


Figure 3-6. Waste Distribution Estimated for 2030.

### 3.3 Waste Distribution

Using the waste projections developed in Section 3.2, combined with the population projection discussed in Section 3.1, projections of the geographical waste generation were developed for the county. Figures 3-5 and 3-6 show the amount of waste that is expected to be generated by residential and commercial entities within the county. MSW was divided into residential and commercial streams, based on national averages that show that 60 percent of the waste generated within a jurisdiction is from residential sources and 40 percent is from commercial sources.

The distributions highlight areas of increased growth in the amount of waste that is expected to be produced. The figures show that there will be continued waste growth in the county, but that the largest increases are expected to occur in the southern part of the county along the I-5 corridor. These figures will be used in Section 6 to help improve access to solid-waste facilities and address transportation of waste generated within the county.

### 3.4 Waste Characterization

2004 Waste -Composition  
(From Figure 2-1)

| Material Type  | County Average |
|----------------|----------------|
| Paper          | 18%            |
| Plastic        | 15%            |
| Metal          | 7%             |
| Organic        | 18%            |
| Glass          | 3%             |
| Other Wastes   | 15%            |
| Wood & CD      | 23%            |
| Special Wastes | 2%             |
| Total Waste    | 100%           |

The composition of waste received for disposal at the WWM's facilities is of great interest for the facility assessment in that it can help to identify large contributors to the disposal stream that may be recoverable and diverted for a better use. In 2004, a waste-composition study was completed for WWM (Green Solutions, 2005) that looked at waste being handled in the transfer station. The study's view included waste arriving from the regional drop-box facilities, the public z-wall at the WARC, C/D materials received at the WARC, and MSW received at the WARC. During the study, random samples from the waste stream entering the transfer station were obtained and sorted into several material categories (Figure 2-1). All of the waste included in the samples was destined for disposal and did not include materials that were pulled out for recycling on the pickline within the transfer station. The evaluation took place between June 2003 and February 2004, during which time 240 samples were sorted and compiled for various generator classifications and waste types.

Two categories that contain a significant amount of the total waste generation are C/D (including wood debris) and yard waste. If the

## ***Waste Projection***

waste characterization data is used in conjunction with the total waste disposed, then in 2005, approximately 41,000 tons of C/D and yard waste entered the transfer station. However, only 8,400 tons was recovered on the transfer station pickline, representing 20 percent of the material that is estimated to have been received at the transfer station. This does not include the source-separated material that is diverted to the yard-waste area at the scale house.

Food waste is another significant contributor to the overall waste disposed of within the county accounting for 14 percent of the total stream, or 25,000 tons, in 2005. Food waste is a compostable material that could be diverted away from the landfill to a more beneficial use.

### **3.5 Regional Growth**

Thurston County is located immediately south and east of a large population center in Pierce County. Pierce County has an estimated population of 741,000 and is expected to grow to between 830,000 and 1,071,000 by 2025. It is expected that a portion of this growth will be accommodated along the I-5 corridor south of Tacoma. There are also current plans for a very large development in the DuPont area, which is about 4 miles north of Thurston County. Development in DuPont would greatly increase the population center there, which would be about 8 miles to the Lakewood Transfer station in Pierce County but only 6 miles from the WARC.

Other surrounding counties are expected to grow at a more restrained pace. Mason County could see growth from a 2005 population of 54,000 to 75,000 in 2025. Grays Harbor could see an increase from 66,000 to 77,000, and Lewis County may see an increase from 73,000 to 91,000 in the same period.

## ***Section 4                      Analysis of Current System***

- 4.1 Reduction, Reuse, and Recycling Programs
- 4.2 Solid-Waste Contracts
- 4.3 County Facilities
- 4.4 Private Facilities
- 4.5 Transportation
- 4.6 Current Solid Waste Plans

In this chapter, an evaluation of Thurston County's current solid-waste system is discussed. The discussion is limited to those items that were identified as potential problems or issues that could be resolved to improve the function of the overall system. The analysis is focused on County programs, contracts, and facilities.

### **4.1 Reduction, Reuse, and Recycling Programs**

Thurston County has a well-developed series of programs designed to provide opportunities for recycling to all residents, opportunities for reuse of items that still have a useful life, and education and policies that stimulates the reduction in the overall generation of wastes within the county.

#### **Issue: County Staffing**

County staffing is sufficient for promoting waste reduction and recycling initiatives.

**Discussion:** The WWM has four full-time staff dedicated to planning, implementing, and promoting waste reduction and diversion.

#### **Issue: Education and Outreach**

The WWM offers programs to residents and businesses that help achieve the overall waste reduction and recycling goals.

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**Discussion:** WWM's waste diversion personnel are responsible for a wide variety of education, outreach, and development efforts such as:

- Sale and distribution of home composting bins.
- Presentations at schools and establishment of waste reduction and recycling projects.
- Waste audits and technical assistance for commercial and institutional generators.
- Maintenance of an online waste exchange service.
- Scheduling and organization for mobile HHW collection events.
- Periodic publication of a four page waste and recycling focused newsletter, "Talkin' Trash."
- Updating of an informational waste and recycling web site.
- Regular contributions to newspapers on waste topics.
- Publicity for specialized diversion campaigns such as "Waste Free Holiday"; "Community Recycle Days"; Christmas tree recycling; and recycling at community fairs and festivals.

### **Issue: WARC Recycling Opportunities**

The WARC offers several opportunities for diversion and recycling of materials from the incoming waste stream

**Discussion:** The diversion and recycling options include a Goodwill Industries donation trailer; an MRW receiving and storage site; a recycling drop-off center; a yard waste drop-off area; acceptance of e-waste products for recycling; and recovery of various materials from C/D waste.

### **Issue: Residential Recycling Services**

The County's recycling system is accessible to all residents of the county.

**Discussion:** The County's minimum service level ordinance was recently revised to expand the curbside recycling service county-wide. The new service includes unincorporated Thurston County and five of the seven incorporated jurisdictions that are serviced by the affiliated companies of LeMay. The exceptions are Olympia, where collection of both refuse and recyclables is performed by City crews, and Rainier, which does not have residential recycling

## ***Analysis of Current System***

pickup service. All areas within the County are being offered a commingled collection approach for household recyclables. Under the new program, residences are provided a large-volume cart for storing all materials mixed together, excluding glass bottles and jars; glass is collected separately. Residential collection service for recovery of yard waste is also provided in Thurston County. Finally, the three rural drop box facilities located in the County have containers for recyclables.

### **Issue: Commercial Recycling Service**

Commercial customers demonstrate a limited participation in recycling services.

Commercial recycling services are generally expensive resulting in low business participation.

**Discussion:** Commercial recycling services not regulated by WWM or UTC and are offered by the commercial waste haulers throughout the county. As a result, commercial recyclers set rates independent of government regulation. The rate for the recycling service offered by Pacific Disposal is sufficiently high that many businesses choose to not participate in the recycling program. State government offices located in Thurston County generate a large volume of recyclable material. Due to the cost of recyclables collection by Pacific Disposal, the main governmental campus looked to large haulers outside of the county for service. The campus was able to contract for recyclables collection by a hauler from outside of the county at a much reduced rate due to the large volume of material that is available. Discussions with the State's contractor indicated that they could not justify service for smaller commercial businesses because they do not have the volume to justify transportation.

### **Issue: Yard-Waste Dropoff**

Yard waste is currently collected curbside by solid-waste haulers or at the yard-waste dropoff facility at the WARC. Residents who regularly use the garbage services offered at the rural drop box locations are required to compost at home or bring their yard waste to the WARC, since there are no other composting alternatives available in the county and burning is prohibited.

**Solution(s):** (1) Offer yard waste dropoff services at the rural drop box facilities, with material to be transported daily to the WARC or to the compost facility directly. (2) Make arrangements for

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residential dropoff of yard wastes directly at local composting facilities and advertise the service.

The Thurston County MRW program successfully collects approximately 35 percent of the estimated 1,800 tons of MRW that is generated.

### **Issue: MRW Recovery**

Based on national MRW generation rates, Thurston County residents are estimated to have generated about 1,800 tons of MRW in 2005, while collection data for that year show that 598 tons were collected through the MRW program. This indicates that the MRW program is successfully collecting about 35 percent of the MRW that is disposed of within the county. However, this also suggests that nearly 1,200 tons of MRW are being improperly disposed of within the county waste stream.

**Discussion:** The disparity between generation and recovery may be a result of the accessibility of the MRW program within the county. As shown by the amount of materials collected at the HazoHouse (598 tons) compared to the WasteMobile collection events (22 tons), the permanent facility collects nearly 30 times more materials. This is most likely due to several factors, including the regular schedule for facility access, location at the only county transfer station, and relative location to a large population center (i.e., Lacey). As an alternative to full-scale MRW-collection facilities, several counties have opened MRW dropoff locations that are open on a regular schedule several times per month. Materials collected at the dropoff locations are packaged and transported back to the main MRW-collection facility and stored at that location. Since materials are not stored at the dropoff location, the construction is greatly simplified.

**Solution(s):** (1) Construct one or more permanent MRW-dropoff locations within the county near other large population centers, such as Olympia or Tumwater, or at the WWM drop box facilities. (2) Increase public information and education efforts that would:

- Advertisement of the regular hours of the permanent HazoHouse facility,
- Advertise the general types of materials accepted, and the ability of residents to use it for free.
- Advise residents of the public health and safety issues associated with improper disposal of moderate risk waste., and



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- Describe the environmental protection benefits of proper disposal of MRW
- (3) Schedule additional Waste Mobile collection events throughout the year.

The Thurston County HazoHouse facility does not meet some of the current state minimum standards for MRW facilities. The County has employed operational procedures to mitigate these shortcomings until a new facility can be constructed.

### **Issue: HazoHouse Facility is Below Current Facility Standards**

The current HazoHouse facility was constructed at the WARC during landfill operations in the mid-1990's. During the last several years, facility construction standards have changed, such that the facility no longer meets some of the requirements of the state minimum standards (Washington Administrative Code [WAC] 173-350-360). In general, MRW collection facilities are required to have a sealed working surface and spill containment, manage stormwater, provide mechanical ventilation, have explosion-proof wiring, and have protected handling areas. The open layout of the existing HazoHouse does not provide cover or spill containment for the receiving area, does not have mechanical ventilation for bulking activities, does not have sufficient containment for the required 25-year rain event in the receiving area, and is located on an asphalt paved surface that is not sealed. These shortcomings have been noted in Ecology and Thurston County environmental health inspections.

WWM is employing several mitigating measures to help extend the facility's life while it prepares the design of a new facility. To address mechanical ventilation, staff handling unknown or flammable materials are required to wear air purifying respirators. Handling of materials takes place inside of structures to protect them from exposure to the elements. Receiving area operations maintain emergency spill response equipment in sealed barrels. These materials include spill dams and absorbents which can be easily accessed and deployed if needed. All received materials are stored in storage lockers which have the required sealed spill containment sump. While the facility is located on asphalt which is somewhat porous in nature, the facility was built directly over a membrane capped portion of the existing landfill. The location was selected so that the membrane would provide an additional level of protection against any of the material collected at the HazoHouse ever being released to the environment.

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**Discussion:** A new HazoHouse facility should be a priority within the County Solid Waste System. While the operational mitigation measures at the current facility have allowed WWM to work with Ecology and the Health Department to keep it open while a new facility is designed, they have indicated that a new facility is needed. The new facility should be constructed to meet, at a minimum level, the state minimum standards for MRW-collection facilities. The facility could be at the same location at the WARC, which is on top of the existing landfill, to make continued use of the protection offered by the landfill liner. However, since the current facility is located on the old landfill, foundation improvements and a robust landfill-gas-capture and -management system are necessary. A new facility could also be sited at the WARC on solid ground at the property leased by Lakeside Asphalt and Paving. This location would require less foundation work and a less complex landfill-gas management system. This location would require significantly less capital expense. Additional locations nearer the center of the population centers may also be viable. Thurston County has already begun design of a replacement MRW facility but has not decided on a site on which to construct it.

Since the contractors that manage the MRW that is collected are all located in King and Pierce counties, the location of the main HazoHouse collection facility at the WARC makes sense: it is at the north end of the county and would not result in material traveling over the same route twice. Other MRW-dropoff locations could be considered at other solid-waste facilities allowing collected materials to be transported to the new WARC HazoHouse for processing.

**Solution(s):** (1) Construct a new HazoHouse facility at a location on the landfill. (2) Construct a new HazoHouse facility at WARC, but off the landfill. (3) Construct a new HazoHouse facility at another location.

Recycling data currently available to the county is of limited usefulness in understanding the impacts of new waste reduction and recycling programs.

### **Issue: Data Compilation and Evaluation**

It is difficult to measure diversion progress because WWM's database is incomplete, particularly regarding commercial/institutional recycling. Additionally, there are notable discrepancies between the Ecology and WWM databases.

**Discussion:** WWM cannot currently require the collection companies to provide data with regard to recycling from

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commercial entities. What data is available is provided by Ecology, which is limited in its usefulness. Ecology considers the data to be confidential and does not identify the source of materials that are reported. For example, Ecology data shows a sharp growth in diversion for the seven – year period of 1999 to 2005 but the explanation for this is unclear. Ecology may be counting material as recycled that was previously not counted but had traditionally been diverted from the waste stream such as ferrous and non-ferrous metals. This would be a way of capturing “old” diversion in the database but would not represent “new” diversion undertaken by the County, municipalities, or private sector.

County personnel cannot document what new and/or expanded diversion activities would account for a diversion rate in excess of 50%. For the period 1999 to 2005 municipal solid waste (MSW) sent out from the WARC for disposal rose steadily from approximately 146,600 tons in 1999 to 179,550 tons in 2005. This equates to an average annual increase of 3%. Yet if diversion goes markedly up disposal should stabilize or decrease. This has not been the case.

The lack of a reliable diversion database and associated data compilation/evaluation mechanism or methodology is an issue that should be addressed by WWM, the municipalities, Ecology, and the private sector.

### **Issue: Diversion Opportunities**

There are several portions of the waste stream that are not adequately addressed in WWM’s current diversion programs.

**Discussion:** A waste composition analysis carried out at the WARC transfer station in 2004 revealed the following:

- 22% of the incoming waste by weight was wood and C/D debris (14% and 8% respectively).
- 18% of the incoming waste by weight was organics, specifically food waste at 13% and yard debris at 5%.

Opportunities for additional diversion programs are apparent in the C/D stream and for organic waste.

Further, for the 1999 to 2005 period incoming yard waste at the WARC went from 6,915 tons to 15,200 tons. For the same period incoming C/ D started at 3,880 tons in 1999 and totaled 37,300 tons in 2005.

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Based on the data above, it is apparent that C/D and organic waste (food waste specifically) should be targeted for future new or expanded diversion programs and policies in Thurston County.

### **4.2 Solid-Waste Contracts**

#### **4.2.1 Transfer Station Operation Contract**

**Issue: Material Recovery Rate**

The contractually required material recovery rate of 5% by weight of all Municipal Solid Waste delivered to the transfer station as amended in 2005 is by industry standards a relatively low rate of recovery.

**Discussion:** The original transfer station contract material recovery rate was 10% which was later reduced to 5% in Amendment No. 3 in 2005. In Section 7.9 (b) of this amendment, the county can increase the recovery rate requirement back up to as much as 10% without incurring any additional expense from the contractor in its reasonable discretion and based on waste stream analyses performed every four years. The contractor appears to be able to divert more material than historically has been recycled based on the observed effort and what materials are diverted. Increased financial benefit would create stronger incentives for increased material recovery.

**Solution:** WWM could enter into discussions with the contractor to discuss various scenarios to increase diversion. The county should discuss the cost of increasing the recovery rate above 10% as well. The county may either need to share the market risk with the contractor of recovering some materials that do not currently have strong markets or actually subsidize some markets to assist in getting those markets developed. When the next waste disposal contract is created, the county should explore options to keep the transfer station contract completely separate from the disposal contract. Specific incentives should be developed that encourage increased diversion over disposal.

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### **Issue: Contract Term**

**Discussion:** Upon the letting of a new waste export and disposal contract, the transfer station contractor may be interested in extending its term to operate the transfer station in exchange for various items that the county may be interested in adding to the arrangement. Some examples might be contractor commitments to recover more materials or invest in upgraded processing equipment with the county or creating a working partnership to develop new markets for materials like gypsum board or asphalt roofing shingles.

**Solution:** Negotiations that take place as discussed above could include the potential for extending the contract term.

### **4.2.2 Waste Export and Disposal Contract**

#### **Issue: Availability of Empty Intermodal Containers**

As a result of a shortage of intermodal containers in the summer of 2006, WWM had to intermittently stockpile solid waste at the WARC's transfer station for periods of seventy-two hours or more. This intermodal container shortage pattern persisted for several months.

**Discussion:** Section 1.3 A of the waste disposal contract states that the contractor shall have sufficient back up trailers to load three days of waste. The Alternate Operating Plan (emergency operations plan) specifies both alternate disposal or transportation options should the primary disposal method of transportation not be available. One of the listed modes of transportation is truck transport of Thurston County waste to the Roosevelt Landfill. However, the plan designates contractor employees as having sole authority under the contract to invoke the Alternate Operating Plan. The county's primary means to initiate alternative transportation or disposal options is to declare a Class B default under the waste disposal contract after three separate events in any given year, excluding Uncontrollable Circumstances. Other options are described in Section 10.9 of the transfer station operation contract whereby material would be transported to an alternate transfer station under certain circumstances or Section 17.1 which also addresses contractor defaults.

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**Solution:** (1) Include language in the next waste export and disposal contract designating WWM with authority to implement the Alternate Operating Plan. (2) Require the railroad to become a party to the contract as a subcontractor providing WWM performance assurances and subjecting them to similar penalties as those for the prime contractor. (3) Directly pursue other back up disposal options with other counties and private operators in the region once a prime contractor for the waste export and disposal contract is chosen as alternative to contractor control.. This would give the county more control in emergency situations or during transportation failures for whatever reason.

### **Issue: Open-Top Trailers**

Two types of transfer trailers are supplied by Allied for transport of waste from the WARC to Roosevelt Landfill, an open top trailer for uncompacted waste, and a rear load trailer for compacted waste discharged from the transfer station compactor. The open top trailers are charged a higher transportation rate than rear load trailers, even though the availability of trailer type is at the discretion of the contractor.

**Discussion:** There is no apparent reason that open top trailers/containers should be charged any differently than rear load trailers/containers. Although they may be loaded differently or in a different location within the facility, it is the contractor's discretion on how or where material destined for disposal is loaded.

**Solution:** Fees paid in a new waste disposal contract should be the same for each load regardless of what type of container is used. The contractor should be able to make its own choice on what container to use in any situation and costs should be averaged in their competitive proposal so that the primary factor affecting the contractor's decision is their own operating efficiency and not the rate that they can charge.

### **Issue: Uncontrollable Circumstances**

The definition of uncontrollable circumstances in the waste export and disposal contract is sufficiently vague so that it limits what cures WWM may employ in case of contractor performance issues.

**Discussion:** This section of contract is normally established for the contractor to be compensated in the case of very specific

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circumstances such as a change in law or even an index for fuel prices. Force majeure or act of God type events are oftentimes in a separate section and are not compensable events for the contractor but protect the contractor from default should very specific events occur.

**Solution:** WWM should separate these concepts in the next waste disposal contract and make them more specific.

### **4.2.3 Yard Waste Contract**

The yard waste contract allows the collected materials to be directed to a composting facility or to be chipped and distributed as hog fuel.

#### **Issue: Hog-Fuel Production**

The conversion of woody debris into hog fuel is a standard practice at the WARC, with materials generally being sent to Grays Harbor Paper by the Contractor (LeMay).

**Discussion:** The use of woody debris as hog fuel is considered by Ecology to be a higher use than landfill disposal, so the practice is not out of line with state goals for recycling and reuse. However, burning of woody debris for energy recovery is a lower use than composting. Efforts to manage more of the woody debris through composting as opposed to hog fuel could help WWM to ensure that materials are going to the highest use possible. The current county compost contract allows for yard waste to be managed through composting or as hog fuel, at the discretion of the contractor. Since management of materials as hog fuel costs much less (essentially free disposal) than the fee charged by the compost facility, the incentive is to make the maximum amount of hog fuel.

**Solution(s):** (1) A contractual limit on the amount of yard waste converted to hog fuel would ensure a higher use for materials received at the WARC. (2) Supply chipped woody debris for co-composting of LOTT's biosolids ensuring a higher use than for hog-fuel material.

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### **Issue: Hog-Fuel Compensation**

The contract terms for yard-waste services at the WARC define a handling charge per ton of material recorded at the toll house. There is a base monthly charge that includes up to 650 tons of yard waste, with a separate per-ton-received charge for the amount over 650 tons. The contract allows for the received materials to be managed through composting or energy recovery (hog fuel). The demand for hog fuel has increased dramatically such that many facilities are able to sell the material instead of giving it away. However, Ecology considers the recovery of material for energy production a lower use than composting.

**Solution(s):** (1) Negotiate with the current contractor or change the future contract terms to compost all material received as yard debris (except for cedar wood). (2) Include a mechanism by which the avoidance of disposal costs or the potential sale of hog fuel may be partially credited to WWM.

### **4.3 County Facilities**

Observations of facility operations were made over a series of visits by several MFA team members between September and November 2006. During site visits, team members spoke with County and operations staff, as well as customers. The evaluation focuses on the flow of the various materials through the facilities and how effectively these materials are processed. Scale operations and traffic flow are also part of the review. The following issues were identified during the site visits. Included is a short discussion of minor changes that may alleviate the problem.

#### **4.3.1 WARC**

In general, it was noted that a larger evaluation of operations at the WARC is necessary to improve use of the facility. The evaluation should analyze traffic patterns and propose changes, include the development of a circulation loop for all traffic. The plan should also analyze transaction methods and time requirements to optimize collection of disposal fees. However the following sections individually summarize specific issues observed at the WARC.



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### **Scale Activity**

Weekend traffic at the WARC is particularly slow due to the significant amount of self-hauler traffic.

#### **Issue: Transaction Time - Weekend Traffic Flow**

Weekend volumes observed at the scale houses were quite significant. Most waste is transported in small cars and pickup trucks (called self haul), many with trailers. Wait times reached as high as fifteen to twenty minutes on the outbound scale.

**Solution(s):** (1) Create one scale-house plaza where all attendant booths are in one place so they change to inbound or outbound quickly. (2) Change the internal road so that all traffic flows around the WARC on a one-way loop where each material drop off point is off to the right; this will eliminate all left turns across traffic. The neighboring Lakeside property may be needed to implement this option. Contractor vehicles would haul the public z-wall containers to the tipping building on the back road as already planned.

#### **Issue: Transaction Time - Scale Signals**

Delays at the inbound and outbound scales resulted from the timing of the traffic signals at the scales.

**Solution(s):** (1) Program the signal to show green as soon as a transaction is completed. (2) Eliminate the scale signals and install signs directing customers to proceed onto the scale as soon as the vehicle ahead starts to leave the scale after completing the previous transaction. (3) Install operator signal controls that allow the toll-booth operators to change the signal as soon as the transactions complete.

#### **Issue: Transaction Time – Toll Booth to Drop Off Site Coordination**

Scale-house attendants must direct traffic to the dumping location with only a limited view. This limited site distance severely constrains the toll-booth operator's ability to efficient customers to the next available drop-off location.

**Solution(s):** (1) Utilize the tipping building for commercial trucks and contractors during the week, sending all residential traffic to the public z-wall drop-off location. (2) Send all vehicles with tilt beds or self-tipping frames to the tipping building and all vehicles requiring hand-unloading to the public z-wall. (3) Station an

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attendant between entrance lanes after the scale houses to direct traffic to the appropriate dumping location. (4) On weekends, send all traffic to the transfer station, with overflow traffic sent to the public z-wall. (5) On weekends, send all traffic in the outside entrance lane to the transfer station and send traffic from the inside lane to the drop-off location. (6) Install video cameras at drop off locations that allow toll booth operators to monitor traffic volume and more efficiently direct traffic to the least congested drop-off site.

### **Issue: Transaction Time – Magnetic Weight Cards**

Weights of incoming self-haul vehicles are tracked on magnetic cards that are given to customers at the entrance scale and collected at the exit scale. Weight cards must periodically be transferred between the entrance and exit scale houses, requiring an additional person at the scale houses.

**Solution(s):** (1) Continue the policy requiring the toll-house manager to bring cards between the toll houses as well as covering for other employees during breaks. (2) Change to a paper-receipt system with a scannable barcode to record and track vehicles; the paper entrance receipt can be reused as a transaction receipt at the exit scales. (3) Track weights in the computer system by vehicle plate number. (4) Create a scale-house plaza as mentioned above.

### **Issue: Transaction Time – Communication of Rate Schedule to Self-Haulers**

The current minimum self-haul rate for the county facilities is low and may not cover the actual cost of the transaction and facility use.

The number of choices at the scale house for the type of material slows down the inbound transaction, since attendants have to explain categories to customers not familiar with them. Choices include garbage (by ton or bag), C/D, yard waste (by ton or bag), appliances, e-waste, roofing, tires, and asbestos.

**Solution(s):** (1) Simplify the rate schedule, combining roofing and tires with the C/D rate. (2) Identify per-item fees for appliances and e-waste. (3) Move yard waste to the free recycling area and subsidize with the garbage and C/D rate. (4) Move tires, appliances, and e-waste to an attended area by the recycling or HazoHouse area and charge a flat fee per item.

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### **Issue: Transaction Time – Mixed-Waste Loads**

Attendants require that the customer weigh through scales twice if the customer has a mixed load (garbage and yard waste, for example).

**Solution(s):** (1) Charge all mixed loads at the higher rate. Customers wishing to use the lower rate may pass through the entrance scale (and entrance line) a second time. (2) Allow customers to pay the higher rate and still deposit yard waste at the yard-waste drop off area. (3) Move yard waste to the free recycling area and charge per load or subsidize through MSW rates.

### **Issue: Transaction Time – Can/Bag Rate**

The can/bag rate for garbage compared to the minimum or tonnage rate caused some customers to take extra time asking questions or coming to a decision. Self-haulers using the can/bag rate often have smaller loads and can significantly increase the amount of traffic at the WARC.

**Solution(s):** Eliminate the can/bag rate.

### **Issue: Minimum Rate**

The minimum rate of \$10.88 is relatively low compared to the gate rate of \$78.47 per ton. The minimum rate is based on a 200-lb load and includes a \$3.50 transaction fee and state tax. The lower minimum rate may contribute to an increased number of self-haulers and may underfund the cost of providing this service.

**Solution(s):** (1) Increase the minimum rate basis to 250 or 300 lbs. (2) Increase the transaction fee (the total minimum fee should be at least \$15.00.)

### **Issue: Check Payment**

The method of payment is verified at the inbound scale house, and checks are stamped "For Deposit Only," slowing down the transaction time. The same customers at the outbound scale were asked for the check number while they were filling out the check. The customers would stop writing for a moment to provide this information, which slowed things down.

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**Solution(s):** (1) Eliminate the process of stamping checks at the entry scales, since this takes extra time for the transaction. (2) Eliminate checks as a method of payment and allow credit and debit cards. (3) Instruct attendants to enter the check number once it has been given to them. (4) Eliminate checks as acceptable payment; allow debit/credit card payment.

### **Issue: Cash Payment**

The attendants ask most customers for correct change on weekends, out of concern for the bank closing early on Saturdays. Customers then stop to check for the correct change, slowing down the transaction.

**Solution(s):** (1) Make alternate arrangements for additional change for weekend transactions. (2) Round all transactions up to the nearest dollar regardless of payment type (cash, check, debit, or credit).

Inbound and outbound traffic within the WARC crosses in several locations, causing traffic delays and increasing the potential for an accident.

### **General Traffic**

#### **Issue: Traffic Crisscrossing**

In several areas, incoming traffic must cross over lanes for exiting traffic. These turns sometimes occur in areas with limited visibility (returning up the hill from the transfer building), and there is no traffic direction provided at these areas (stop signs or attendants).

**Solution(s):** (1) Install stop signs at all locations where traffic crosses, especially in areas with limited visibility, for all directions. (2) Station an attendant at traffic crossings to direct traffic and to direct self-haulers to the appropriate area. (3) Create a scale-house plaza and one-way traffic loop for the entire facility.

#### **Issue: Signage**

Signage is somewhat confusing for those unfamiliar with the WARC layout, causing them to slow down or stop to ask questions.

**Solution(s):** (1) Number areas within the WARC, and add to existing signage to direct users to Areas 1, 2, 3, etc. (2) Place an attendant at the exit of the inbound scale to help direct self-haulers to the appropriate area. (2) Allow self-haulers to go to the drop box area only.

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### **Issue: Bypass Lanes**

The bypass lanes can be accessed only from the scale lines, so that vehicles wanting to use them have to wait in the scale lines. This adds to the line of traffic in the scale lanes and delays people using the bypass lanes.

**Solution(s):** (1) Extend the bypass lanes so that facility traffic can freely move independent of the scale lanes. (2) Create a scale-house plaza and one-way traffic loop.

### **Issue: Drop Box Access**

The access to the drop box area is narrow and is a bottleneck when there is traffic entering and exiting at the same time.

**Solution(s):** (1) Widen access to the drop box area so that entering traffic can make a wider radius turn while simultaneously allowing traffic to exit. (2) Separate the entrance and exit to the drop box area. (3) Create a one-way traffic loop.

## **Tipping Building/Z-Wall/Material Flow**

### **Issue: Tip Building Capacity**

The original design capacity of the WARC transfer station is 600 tons per day. The facility is capable of handling a higher flow and is limited mainly by the capacity of the compactor and the operating hours of the facility.

Although the transfer-station building is relatively small, roughly 13,250 square feet, the design is sufficient to handle daily volumes averaging 600 tons per day of MSW and 100 tons per day of C/D. However, the daily processing demand of the County is expected to quickly grow beyond the design capacity of the original transfer station within the next five years. The limiting process in the transfer of waste is the compactor, which can process up to 100 tons per hour or four intermodal container loads per hour, so in six hours at maximum capacity it can effectively handle these volumes, allowing time for personnel breaks and equipment maintenance during the normal operating day. As incoming MSW amounts increase over the design capacity, it is unlikely that the facility will be able to keep up with the material flow under its current operating scenario.

**Solution(s):** (1) As waste tonnage increases on a daily basis, the material can be accumulated in the southwest corner of the tipping floor during the day, and the operating time of the facility can be extended for several hours after the closing of the front gate to

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allow the contractor to clear the accumulated waste each day. A second shift could double the capacity of the facility, as long as empty rail containers are available. There should be no difficulty in properly handling waste volumes up to 1,000 tons per day, as long as waste is cleared out daily. (2) Take out the pick line in the western part of the building area to create more floor space and utilize the back pick line for C/D recycling. However, this may limit further recycling opportunities in the future.

### **Issue: Compactor**

The compactor is the limiting factor, since it can process only 100 tons per hour.

**Solution(s):** (1) Additional operational hours at the transfer station, beyond the closing of the WARC gate, would ensure that the facility could clear the material before the start of the next day. (2) Simultaneous loading of the compactor and of top-load rail containers (uncompacted) would allow the facility to handle an increased waste flow. (3) In the event of a compactor breakdown, direct loading of waste into the top-loading rail containers would keep material flowing. (4) There is sufficient floor storage for waste to accommodate breakdown of the wheel loader, since one from another contractor operation or a rental unit could be obtained in less than 24 hours if it could not be repaired quickly.

The pickline is underutilized since it is not operated full time. Additional materials could be processed over the pickline to achieve a higher recovery rate at the

### **Issue: Pickline Utilization – Insufficient Financial Incentive**

The incentive-payment clause does not provide sufficient financial motivation to recycle above the minimum level. Recycling at the tipping building is focused on C/D to reach the 5 percent diversion requirement of the transfer station operation contract. To meet the required diversion rate, the pickline is operated only four to six hours per day with four to six pickline workers. Additional pickline capacity is not used.

**Solution(s):** (1) The contract could require staffing of part or all of the pickline for a minimum duration of eight hours per day (or some other interval). (2) The transfer station diversion rate stated in the contract could be negotiated to increase by several percent, resulting in longer operation of the pickline. (3) The contract could be negotiated to require that all C/D be processed over the pickline and be kept separate from MSW until it reaches the compactor.

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### **Issue: Public and Employee Safety – Transfer-Station Tip Lanes**

The tipping lanes at the transfer-station building (eight inside and four outside) become very congested on weekends because most users are self-haulers whose vehicles need to be hand-unloaded. Contractor attendants frequently direct self-haulers to the lower-level access road to the tip area on the main tipping floor, along with the Pacific Disposal roll-off trucks. The 10-foot grade difference at the upper tip area to the transfer station floor presents a potentially dangerous situation for the public.

**Solution(s):** (1) Access to the lower level of the tip area should be limited to the commercial haulers only. The combination of commercial and self-hauler traffic backing into the transfer building is unsafe. (2) Direct all self-haul traffic to the drop-box area during the week, and allow access to the building's inside tip area only on weekends as overflow. (3) Allow public use of the building's inside tip area under supervision by transfer-station staff and continue to require users to place all materials directly in the tipping lane instead of throwing them down into the transfer station. (4) Create two more tipping lanes inside the building if the pickline is taken out as mentioned above. (5) Send all vehicles with tilt beds or self-tipping frames to the tipping building and all vehicles requiring hand-unloading to the public z-wall.

### **Issue: Z Wall Rolloff Containers are not Emptied on a Timely Basis**

Congestion at the z-wall occurs at peak times on weekends. Traffic congestion at the transfer station on weekends would delay the roll-off truck and also causes more of a backup. The main reason for the congestion at the z-wall area as observed during site visits was that roll-off containers were not emptied on a timely basis.

**Solution(s):** (1) Creating a separate route for roll-off trucks to the lower level of the transfer station will provide easier access between the two areas for the facility contractor. No backups were witnessed in either visit to suggest that the z-wall capacity should be a problem in the near term as long as the roll-off containers are switched out in a reasonable amount of time. (2) If congestion is still a problem after improving servicing of the roll-offs, an additional z-wall and tipping lanes may be added. (3) Work with

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require users to place all materials directly in the tipping lane instead of throwing them down into the transfer station. (4) Create two more tipping lanes inside the building if the pickline is taken out as mentioned above. (5) Send all vehicles with tilt beds or self-tipping frames to the tipping building and all vehicles requiring hand-unloading to the public z-wall.

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### **Issue: Rail-Service Slowdown**

Poor rail service has caused significant issues in the recent past. Rail service is the largest potential bottleneck in the successful management of county waste disposal.

Poor rail service resulting in insufficient empty containers has been a significant issue at the transfer station. Poor rail service can be a large bottleneck due to the lack of transfer containers delivered to the transfer station as well as the inability to take the containers to the landfill.

**Solution(s):** (1) Add requirements in the export contract for trucking of waste in the event of a rail-service disruption in excess of one to two days. (2) Identify contract penalties for not clearing the transfer station at the end of each working day. (3) Insist that the contractor use an alternate disposal facility, as specified in the contract. (4) Work with Pierce County and LeMay to use the 304th Street landfill as a backup site to the Roosevelt Landfill.



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### **Issue: Weighing of Outbound Material**

Traffic backup at the scale houses has prevented most outbound trailers from being weighed. Average weights are applied to loads headed to Roosevelt Landfill.

Not all outbound loads are weighed. Outgoing rail containers are weighed only twice per day to determine an average weight that is applied to all outbound loads. In addition, most of the yard-waste loads are weighed, though none of the hog-fuel loads are weighed. To estimate hog fuel, the incoming yard waste and woody debris from the pickline are added, then the outgoing yard waste is subtracted.

**Solution(s):** (1) Require weighing of all outbound materials from the transfer station; the resulting weight is used for reporting to Ecology and for the WWM's tracking of annual trends. The outbound weights may also be used to verify the diversion percentages achieved at the transfer station and at the WARC as a whole. (2) Require submittal of highway weight tickets for all outbound materials. (3) Require that all outbound loads be weighed at the receiving facility on a certified scale and that weight tickets for each load be provided to the WWM for verification.

### **4.3.2 Rural Drop Box Facilities**

#### **Issue: Signage**

No sign was evident on Little Rock Road indicating the drop box location at Rochester.

**Solution(s):** (1) Improve signage on Little Rock Road to indicate the facility location.

#### **Issue: Traffic Flow**

At Rainier, recycling containers are all located along the right of the entrance road. At Rochester, the facility entrance road has three lanes, which pass through the recycling area, where containers line both sides of the road. On the right side there are containers for cardboard and clothing; on the left side there are containers for bottles/cans, newspaper, and mixed paper. Customers who have multiple materials must walk across lanes of traffic to get to the other containers. The center lane is the bypass lane for customers who are not dropping off recyclables to proceed directly to the garbage drop off area.

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contractor to wash out bottle/can containers after every load during summer months to reduce the bee problem.

### **Issue: Garbage Drop Off**

The design of Rochester's garbage drop off area is an L shape with three 40-CY containers on each side of the attendants' office, with a total of 12 tipping lanes. At Rainier, two containers are on each side of the attendant's office, with a total of eight tipping lanes. This design points vehicles almost directly into opposing traffic and can create traffic bottlenecks, especially since all the vehicles are backing in.

**Solution(s):** (1) Modify the drop box facilities to remove the 90-degree angle from the layout.

### **Issue: Waste Hauling**

A critical issue at the facility is getting the 40-CY containers emptied on a timely basis. The Rochester facility averages 17 tons per day and is open three days per week. The Rainier facility averages 10 tons per day and is open two days per week. According to the attendants, getting containers changed out on a consistent basis can be a problem, primarily during summer months and around the year-end holidays. There are two spare 40-CY containers at Rochester, in a back storage area, that have been used for direct dumping without the grade difference in an emergency, requiring customers to unload from the ground level or the bed of a pickup truck over the 8-foot-high container walls. There are no spare containers maintained at Rainier. There is no mechanical equipment such as a backhoe or excavator available to work the loads to increase weights and reduce trips.

**Solution(s):** (1) Review the hauling schedule with Pacific Disposal and tighten it up during peak months. (2) An organized system for using drop boxes, which leaves one or two containers unused until the others are filled, may allow the attendants enough time to make contact with Pacific Disposal for pickup of the other containers as they fill up. (3) Equip the facility with a backhoe or excavator with a tamper attachment to mechanically compact loads in the drop boxes to increase the amount of material that can be deposited, and accommodate the hauling schedule by Pacific Disposal. (4) Construct an extension of the tipping walls to accommodate the

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two spare containers at each site, so that they can be used more easily in the event of the other boxes filling up too quickly.

### **Issue: Rates**

The yardage rate of \$14.73 with a 1-yard minimum is higher than the WARC minimum, but customers state that the rate is still much lower than curbside service. The yardage rate of \$14.73 (converted at 400 lbs per CY) equates to \$73.65/ton, which is lower than the WARC MSW gate rate (including tax and transaction fee of \$79), even though it is necessary to haul the material to the WARC. The rates for C/D are \$24.07 per CY, and \$36.23 per CY specifically for roofing materials, which has generally been successful in diverting this material to the WARC where the price is lower.

**Solution(s):** (1) The garbage rate could be raised slightly to cover the cost of transportation to the WARC and facility operation costs.

### **Issue: Safety Bars**

The safety bars at Rainier are a little farther away from the 40-yard containers, allowing material spillage to build up between the bars and containers. Attendants must periodically clean up the spillage, which is difficult without going to the other side of the bars. The existing bar design to prevent users from falling into the containers makes it hard for many people, especially seniors, to deposit their garbage into the containers. This bar design also prevents any vehicles with tipping beds from using them to dump. However, since their installation in 2005, the bar design has been successful in preventing users from falling into the containers.

**Solution(s):** (1) Reset the safety bars closer to the waste containers.  
(2) Instruct attendants at all drop box facilities to provide assistance to seniors and others who need help unloading over the safety bars.  
(3) Install a locking gate at each facility so that the bars can be swung out of the way by attendants for self-tipping vehicles.

### **Issue: Advertising/Public Information**

There was no information available at the WARC regarding the other drop box locations. WWM's Web site has good information about them.

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**Solution(s):** (1) Provide pamphlets at the WARC describing the drop box locations, with directions and fees.

### **4.4 Private Facilities**

Private facilities are outside of the control of the county. For each of the facilities identified below a brief discussion is presented to develop a better understanding of issues or improvements that may be of interest to the County.

#### **4.4.1 Pacific Disposal**

**Issue: Container Pick Line**

The function of the Pacific Disposal Materials Recovery Facility (MRF) is changing as the County switches from a residential, curbside, source-separated recyclables collection to a curbside, single-stream, commingled recyclables collection. The residential commingled materials are being rerouted to the new SP Recycling facility in Frederickson (near Tacoma). The Pacific Disposal MRF continues to process commercial recyclables and recyclables from WWM drop box facilities, as well as paper shred. There is no current plan for the use or conversion of the extra container-sorting line. The facility can easily handle additional materials in the future because of the elimination of residential curbside materials from the facility.

**Solution(s):** (1) Work cooperatively with Pacific Disposal to evaluate potential opportunities for the redevelopment of the container-sorting line at the MRF. (2) Encourage development of specific capabilities at Pacific Disposal through incentives or partnerships.

#### **4.4.2 Little Hanaford Compost**

**Issue: Compost Facility Capacity**

Based on physical observations of the Little Hanaford Compost Facility, the facility is close to the full capacity of what the site will allow without further modification. The facility accepts between 7,000 and 10,000 tons of yard waste per year from Thurston

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County, which is mixed with 20,000 to 40,000 tons of other organic wastes (hog fuel, chicken and fish waste, gypsum, etc.).

**Solution(s):** (1) The facility may adjust its mix recipe to accommodate more yard waste from Thurston County. (2) The facility has some space remaining to accommodate future growth of composting pads, though the space is constrained by proximity to the nearby stream. Its ability to expand is uncertain.

### **Issue: Odor Complaints**

There have been several odor complaints filed by neighbors of Little Hanaford. The complaints were filed with the Health Department in Lewis County, the agency responsible for the operation permit of the facility.

**Discussion:** According to the Health Department, Little Hanaford has responded acceptably to each response by modifying the amount of water applied to the compost piles or by increasing the frequency of pile turning (aeration). The facility relies on water content and aeration to control odors; however, its current process of very large piles with infrequent turning and excess water application will continue to result in odor issues. During the September 2006 site visit, odors were noticeable within a half mile of the facility. It is likely that the absence of immediate neighbors has allowed the facility to operate with some odor generation; however if Centralia were to experience growth to the east, odors from the facility could become an issue with the operation. It is also possible that a larger change in operating procedures would be required by the Health Department should odor complaints continue.

### **Issue: Processing Capabilities**

The facility is not currently permitted to process pre- or post-consumer food waste.

**Discussion:** If WWM implements a food-waste collection program, the food waste cannot be delivered to this facility. In addition, if the food waste is collected as a stream commingled with yard waste, it will be necessary to send the entire stream to a facility permitted to handle the food waste; delivery to Little Hanaford will not be allowed under the current permit. However, the facility can modify

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its operation and apply for a new permit to allow composting of food waste.

### **4.4.3 Silver Springs Compost**

#### **Issue: Compost Facility Capacity**

The new Silver Springs Organics compost facility is due to open in March of 2007, outside of Tenino in Thurston County. The facility expects to process approximately 30,000 tons in its first year, even though it will be sized to process 60,000 tons annually.

**Discussion:** To accommodate growth, the facility has obtained a permit to process up to 120,000 tons per year of mixed organic wastes (including pre- and post-consumer food waste), and will expand the infrastructure necessary up to the permit limit. Critical elements, such as a stormwater-detention pond and blowers, have been sized for the full 120,000-ton-capacity facility. As the incoming volume of material increases, the size of the processing area and systems can be easily expanded to handle the additional materials.

#### **Issue: Facility Odors**

As seen at other compost facilities (Soil Key and Little Hanaford), there may be odors generated at the facility.

**Discussion:** The facility will include a biofilter odor-management system for odor coming from the compost piles, so odors are not expected to be an issue. This type of filter has been successfully demonstrated at the LRI compost facility in Tacoma.

#### **Issue: Processing Capabilities**

The facility is permitted for pre- and post-consumer food wastes in addition to yard and animal wastes.

**Discussion:** This facility can be used for the food-waste pilot program as well as the full food-waste collection program, and it is also the nearest facility permitted to take these materials. It is very likely that the facility will be able to grow to meet the increasing demand of a successful food-waste program. Based on the waste breakdown described in Section 3.4, it is projected that the food-

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waste and compostable-paper portion of the waste stream could grow 82,000 tons by 2030. Although it is unlikely that all of this material could be diverted through the food-waste collection program, the Silver Springs facility would have sufficient capacity to accept all or some of this material. The facility also has sufficient capacity to handle all of the county's yard-waste composting, which would enable commingled curbside pickup of yard waste and food waste in residential areas.

### **Issue: Sustainable Management**

Silver Springs could help WWM in ensuring responsible and sustainable waste-handling practices.

**Discussion:** Silver Springs Organics is a business local to Thurston County, so by directing material to Silver Springs WWM can support the Thurston County economy and support the growth of recycling businesses within the county. The facility also presents WWM with an opportunity to manage a substantial portion of the waste stream within the county limits, reducing the environmental impacts of transporting waste across the state and reducing dependence on distant landfills, while generating a valuable commodity to help sustain Thurston County's local agribusinesses.

### **4.4.4 Soil Key**

#### **Issue: Facility Capacity**

Soil Key is operated as a biosolids-composting facility. The facility is permitted to process up to 2,000 wet tons of Class B biosolids per month, along with grit sewage and chicken wastes. The facility is currently receiving about 6,700 tons per year.

**Discussion:** Soil Key is one of the main handling facilities for biosolids that are produced by Thurston County's wastewater-treatment facilities operated by LOTT. The facility has limited capabilities to process the county's yard-waste stream. However, the facility has recently been struggling to secure a consistent source of chipped woody debris, which is used as a bulking agent to allow proper air flow during the composting process for biosolids. The facility could be considered by WWM as a destination for some of the woody debris that is received at the WARC.

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### **Issue: Facility Odors**

The Soil Key compost facility located along I-5, north of Grand Mound, historically has had odor issues that have required correction.

**Discussion:** A positive air bio-filter is used at the facility in the initial process site to help reduce odors. The facility is working with consultants for improvement of the current bio-filter system. If the facility is able to successfully control odors generated, it may be a viable alternative for a smaller portion of the county's yard waste.

### **Issue: Bulking Agent**

Soil Key uses hog fuel from various sources as a bulking agent for composting biosolids from LOTT.

The County may be able to supply chipped wood to Soil Key for a reduced composting fee in order to support composting of LOTT biosolids.

**Discussion:** LOTT sends biosolids to the Soil Key facility for half the year for composting. As part of the composting process, a significant amount of bulking agents are necessary for absorbing the liquids from the biosolids and to improve air flow through the compost pile. Soil Key has been able to procure this material for free in the past, but the demand for hog fuel has increased and Soil Key must now try to buy hog fuel or procure other sources of chipped wood. For example, over the holidays the facility was accepting old Christmas trees which they would chip to use for composting. Since Soil Key requires chipped wood for the compost process and WWM has a desire to compost more of the chipped wood coming from the yard waste and wood waste operations at the WARC, there is an opportunity to develop a partnership to provide chipped wood to soil key, and still maintain the transfer station contractors ability to send out the material and avoid the composting fee charged by Little Hanaford. The supply of chipped wood may also have the additional benefit of reducing odors generated at the facility due to poor air circulation.

### **Issue: Sustainable Management**

Soil Key may help WWM in ensuring responsible and sustainable waste handling practices.

**Discussion:** Soil Key is a business local to Thurston County, so by directing free material to Soil Key WWM can support Thurston County's economy and support the growth of recycling businesses



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within the county. This also presents WWM with an opportunity to support the proper management of another waste stream (biosolids) generated by LOTT. As with Silver Springs, the facility presents WWM with an opportunity to manage a portion of the waste stream within the county limits, reducing the environmental impacts of transporting waste biosolids and hog fuel to other counties. In addition, composting of yard waste is considered a higher use than energy recovery under the definitions contained in Beyond Waste. Compost produced by Soil Key is used in the County for WSDOT projects.

### **4.4.5 Recovery One**

Recovery 1, Inc., located in Tacoma, Pierce County, is currently the largest C/D recycling facility in the northwest Washington area. The facility has fairly strict criteria for acceptance of C/D materials, such as non-detect (ND) values for asbestos, lead, and mercury, which are all stricter than state standards (asbestos less than 1 percent, lead less than 1 ppb, and mercury less than 52 ppb are acceptable). The facility currently does not accept painted wood, though this is being reviewed. Painted wallboard also is not accepted at this time, since currently there is no market, but the policy may be revisited if a market can be found. Wood and woody waste are generally chipped for sale as hog fuel, and a market is being developed for a wood pulp product; carpet and carpet pad are also received and recycled.

#### **Issue: Facility Capacity**

The facility can handle up to 145,000 tons per year, but it currently handles about 6,000 tons per year from Thurston County, and about 80,000 tons in total.

**Discussion:** As shown, Recovery 1 has additional capacity to process more C/D material, should Thurston County be successful in its diversion efforts.

#### **Issue: Facility Costs**

The disposal fee at the facility is \$20/ton for clean wood and \$56/ton for commingled debris.

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**Discussion:** The facility is approximately 25 miles north of the WARC on Interstate 5. With a transportation cost of \$20 to \$25/ton, it is slightly more expensive to haul demolition debris to Recovery 1 from the WARC. Since the tipping fee along with the transportation cost is \$81, which is slightly higher than the \$79 all-in rate for the WARC, there is very little incentive for Thurston County contractors to bring their waste to Recovery 1 under the current system. Within Thurston County, Benchmark Recycling is the only contractor that offers a drop box service for hauling of C/D to Recovery 1. If Thurston County can justify the transportation economics for this facility, its use as a waste-management facility for county materials may be appropriate. A higher C/D rate at the WARC would create a larger cost incentive that might make it worth the additional effort that is necessary to bring debris to Recovery 1. In addition, recycling mandates on contractors would help to create demand for transport of C/D to this facility.

Recovery 1 achieves a 99 percent diversion rate for C/D materials, compared to less than 30 percent achieved by the WARC pickline.

### **Issue: Recovery Rate**

The recycling rate for Recovery 1 is higher than the recycling rate at the WARC.

**Discussion:** The WARC currently recovers about 20 to 30 percent of the C/D waste stream, while Recovery 1 consistently recovers 97 to 99 percent of the materials received at the facility. Recovered materials either are directed to a recycler or are converted into hog fuel. Some of this difference in recovery percentage might be due to the difference in acceptance standards of the two facilities.

### **4.4.6 Roosevelt Landfill**

#### **Issue: Landfill Capacity**

It will be necessary to identify the Roosevelt Landfill capacity for waste generated within Thurston County.

**Discussion:** Roosevelt Landfill is permitted for 120 million tons over 40 years and has the capacity to expand and extend the operating life for over 100 years. At current generation rates, Thurston County may generate between 20 and 30 million tons over the next 100 years.

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### **Issue: Environmental Protection**

It will be necessary to identify environmental protections offered at Roosevelt Landfill to reduce the risk of County disposal at the facility.

**Discussion:** Roosevelt Landfill is a permitted Subtitle D landfill and has demonstrated compliance with state and federal standards for the protection of the environment. The landfill is sited in an area that receives minimal amounts of rain (6 to 9 inches/year) and was constructed with an 80-mil plastic primary liner and a 2-foot clay secondary liner. In addition, the landfill is equipped with leachate and landfill-gas collection and treatment systems. Landfill gas is recovered for power production.

## **4.5 Transportation**

### **Issue: Transfer-Station Accessibility**

All collection routes within the County, the three drop box facilities, and self-haulers bring material to the transfer station at the WARC in the northeast corner of the county.

**Discussion:** WWM's transfer station makes good use of County property (the landfill) that has limited opportunities for other use. The WARC is very accessible by I-5 so that most residents can reach the facility within a reasonable amount of time. The location of the transfer station is in the far northeast corner of the county, and is north of the main population centers of Tumwater, Olympia, and Lacey. Traffic congestion within the main traffic corridors can make accessing the WARC much more difficult during the morning and evening hours. Collection trucks generally end up in traffic backup at the end of routes, but the impact is limited since this is relatively early in the day. The current location of the transfer station serves the northern portions of the county very well, though a second transfer station location may be necessary to address waste volume and to better serve southern portions of the county.

### **Issue: Centralia Intermodal Yard**

The ability of LeMay's intermodal yard in Centralia to service the needs of Thurston County needs to be identified.

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**Discussion:** The intermodal yard in Centralia handles waste containers from Thurston, Lewis, Grays Harbor, and Mason counties. The yard maintains two spurs on which containers are loaded and offloaded from rail cars. The facility is about 3 miles off I-5 and it typically takes the transfer trucks ten to 15 minutes to get to the facility after exiting the freeway. Access is over city surface streets and through residential zones.

Service at the facility does not seem to be a limiting problem, though switching and service by the rail company has the potential to cause difficulties. Access to the facility through residential neighborhoods also has the potential to be a problem if after-hours service is needed for the WARC transfer station.

### **Issue: Rail Transportation to Roosevelt Landfill**

All MSW collected at the WARC must be sent via rail to the Roosevelt Landfill, and slow service has been an issue in the recent past.

**Discussion:** WWM's Waste Export and Disposal Agreement specifies that all county waste from the WARC will be disposed of at the Roosevelt Regional Landfill. Materials from the WARC are loaded into transport containers and trucked to LeMay's intermodal facility in Lewis County, where they are loaded onto railcars for transport to Roosevelt. Empty containers from Roosevelt are returned via rail to the intermodal yard, and are backhauled to the WARC after dropping off the full container. In the recent past, problems were experienced at the WARC transfer station when empty containers could not be obtained. This led to a buildup of MSW that was left overnight in the transfer station for over six months. Normal container service was restored after several weeks, but the additional buildup of material had to be slowly addressed after handling daily materials. WWM worked with Allied/LeMay to get the problem resolved as quickly as possible, but the problem highlights the potential impact of disruptions in rail service. The Alternate Operating Plan (Regional Disposal Company, 2004) that was submitted by Allied specifies that truck transport of materials is the backup method of transport for rail interruptions. However, since this was a problem in the number of transport containers available to Allied, truck transport was not required. Consistent service has been provided since the incident, but WWM should investigate the terms of contractor default in the contract for

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penalties and corrective actions in the event of similar future events.

### **4.6 Current Solid Waste Plans**

Section 5 discusses the implementation of Thurston County's Solid Waste Management Plan (SWMP) that was approved in 2001, and the goals of the Washington State Beyond Waste Plan (Beyond Waste) (Ecology, 2004) that may be applicable at the county and local levels. The first part of the discussion focuses on the progress made toward achieving the goals identified in the previous SWMP. The second part of the section focuses on identifying ways in which the County is already meeting the goals of Beyond Waste, or on ways in which the County can incorporate the goals of Beyond Waste to help the State of Washington meet its overall waste and sustainability goals.

#### **4.6.1 County Solid Waste Management Plan Goals**

The 2001 Thurston County SWMP established several goals to work toward during the plan horizon (i.e., through 2005). An evaluation of the County's progress toward meeting these goals is discussed below.

**Goal 1.** Prioritize the direction of resources toward reducing the total volume of the waste stream, and additionally toward improving recycling in accordance with Chapter 70.95 RCW.

**Discussion:** WWM has consistently directed funds toward achieving a reduced waste stream and increasing overall recycling, as evidenced by the numerous programs aimed at outreach to the citizenry of the county as described in Section 4.1.

**Goal 2.** Reduce the total volume of waste generated per capita by at least 2.5 percent by 2005 (2000 baseline).

**Discussion:** The reduction of the per capita waste generation has not been achieved. The County's per capita generation rate has increased from 2,128 lbs/person in 2000 to 2,500 lbs/person in 2004 (an increase of 3 percent per year), to over 3,200 lbs/person in 2005 (a 30 percent increase over the previous year). There is a

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discrepancy between the amount of recycling that occurred in 2000 between the target numbers in the 2001 SWMP and recycling numbers reported by Ecology, so for the sake of comparison the per capita waste generation is based on Ecology-recorded recycling. Because of the polling practices of Ecology, the source of the large increase in recyclable materials cannot be identified and may be an anomaly.

**Goal 3.** Increase the percentage of material being recycled from the total waste generated by at least three percentage points by 2005 (2000 baseline).

The County has increased the overall recycling rate to 38 percent, exceeding the goal of 36 percent.

**Discussion:** The County's overall recycling percentage has increased from 33 percent in 2000 to 38 percent in 2004. The 2005 data indicate that a 51 percent recycling rate was achieved, though this may be a one-time occurrence due to a 65,000-ton increase in woody-debris recycling between 2004 and 2005, which again may be a one-time event. The County's recycling percentages in both 2004 and 2005 have exceeded the goal set in the 2001 SWMP.

**Goal 4.** Consistent and reliable data collection to accurately measure progress toward meeting goals.

**Discussion:** WWM's financial system is directly tied to the scale houses at the WARC so that the most up-to-date information is available. This system tracks the tonnage of waste received in several different rate categories, then is also used to track materials that are diverted at the pickline, and to track all materials leaving the WARC facility. Combining WWM's data with Ecology's recycling data provides a somewhat accurate picture of waste generation and recycling practices. However, the confidentiality requirements of polling completed by Ecology do not allow WWM to verify the accuracy of the numbers reported or to determine the nature of the material (transient or new source). In addition, WWM recently revised the Minimum Service Ordinance requiring local collection companies to provide more detailed information about waste collected within the county. Improvements in data collection are still necessary for improved tracking of trends in the solid waste stream and recycling.

**Goal 5.** Increase the capacity and efficiency of composting operations to accommodate increasing rates of recycling and future growth in the county.

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**Discussion:** As a result of a class-action lawsuit relating to odors generated at the WARC composting facility, composting of the County's organic wastes has been contracted out to LeMay. LeMay currently sends all yard waste received at the WARC to the Little Hanaford Compost Facility in Lewis County. With the establishment of a new composting facility at Silver Springs Organics in Tenino, the County has sufficient capacity to compost all organic wastes generated within the county in the near future.

**Goal 6.** Begin an auto-hulk-recycling program.

**Discussion:** WWM successfully implemented an auto-hulk-recycling program that subsidized the recycling of auto hulks belonging to residents. Since that time the price of steel has risen significantly such that most recyclers will purchase the auto hulk from the owner and haul it from their property. The auto-hulk program was ended in 2006 because of lack of benefit. The program may be reconsidered if the price of steel falls.

**Goal 7.** Process 100 percent of the county's MSW through the transfer-station facility.

**Discussion:** WWM is currently processing all of the county's MSW through the WARC transfer station.

**Goal 8.** Maximize the use of front-end recyclable recovery system to recover at least 10 percent. (Front-end recyclable recovery system is assumed to mean transfer-station pick line and other recyclable separation that occurs at the point of waste delivery.)

**Discussion:** A contract amendment in 2005 was executed, lowering the minimum diversion limit to 5 percent. This was a result of the inability of Allied/LeMay to meet the 10 percent requirement and of a review of the 2004 Waste Characterization.

**Goal 9.** Conduct waste audits every four years.

**Discussion:** The County has met this goal by completing the most recent Waste Characterization in 2004.

**Goal 10.** Conduct waste audits and adjust transfer-station diversion requirements as appropriate.

## *Analysis of Current System*

**Discussion:** A contract amendment in 2005 was executed, lowering the minimum diversion limit to 5 percent. This was a result of the inability of Allied/LeMay to meet the 10 percent requirement and of a review of the 2004 Waste Characterization.

**Goal 11.** Enforce contract incentives and penalties defined in the contract for exceeding or failing pickline diversion goals.

**Discussion:** Between the opening of the transfer station in 2000 and the contract amendment in 2005, WWM did not assess fines on the contractor for failing to meet the pickline diversion goals. In 2005, the contract was amended, lowering the diversion goal to 5 percent, which the contractor has consistently met.

**Goal 12.** Minimize the flow of waste going to ultimate disposal.

**Discussion:** The amount of MSW, C/D, and asbestos disposed of at the Roosevelt Landfill has increased each year at a rate of about 3 percent per year. However, WWM has instituted recycling policies and programs that have led to decreases in the amount of material being disposed of. The County can continue to minimize the flow of waste going to disposal by instituting additional waste-reduction and recycling policies and programs.

### **4.6.2 Beyond Waste Goals**

A review of Washington State's Beyond Waste Plan (Ecology, 2004) shows that most goals and objectives set by the plan apply to the state-government level and may not be applicable to the county-government level. However, there are several objectives that may be applicable and that are discussed below in terms of how the County may meet these objectives.

**Goal 1.** Moving Toward Beyond Waste with Industries

The County and cities can lead by example in generating significantly less waste and decreasing the use of toxic substances.

There are 14 actions and 13 milestones defined by Ecology, which are mainly focused on actions available at the state level. However, WWM and cities provide assistance with two of these items. The first is to encourage waste handlers to become materials brokers. By focusing more attention at the WARC and other future waste facilities on the recovery of materials that have a beneficial value, and developing partnerships to collect and/or offer these materials



## *Analysis of Current System*

for reuse or recycling, the County would be in line with the definition provided in Beyond Waste.

Additionally, the County and cities can address the milestone of government leading by example in generating significantly less waste and decreasing the use of toxic substances at the local level. By actively instituting waste-reduction and recycling programs throughout the County and city offices, the local governments will help to demonstrate support of Ecology's program. The programs can also be offered to businesses as demonstrations of effective waste-reduction and recycling measures that can be implemented.

### **Goal 2. Reducing Small-Volume Hazardous Materials and Wastes**

The County and cities can help to lead by example by implementing environmentally preferred purchasing policies with regard to vehicles, grounds maintenance, electronics, building materials, cleaning products, and flame retardants.

Of the ten steps and nine milestones defined in Beyond Waste, WWM and cities may address several categories. WWM can continue to support e-waste initiatives and provide services in accordance with the e-waste efforts that are being implemented by Ecology. WWM's public-education efforts (Master Gardeners and Closed Loop Park) already help to educate the public about the proper use of pesticides, and focus more attention on reduced use of pesticides and herbicides in the landscape. The County and cities can help to lead by example by implementing environmentally preferred purchasing policies with regard to vehicles, grounds maintenance, electronics, building materials, cleaning products, and flame retardants.

WWM's MRW program is a very effective means in ensuring that locally generated hazardous materials are properly managed, and the program will need to adapt to evolving state regulations in the future. WWM should also continue to update their local hazardous waste plan to make sure that it remains up to date, and to update their facilities as needed. In this last instance, it is very important that WWM update the existing HazoHouse facility so that it meets the current state minimum standards.

### **Goal 3. Increasing Recycling for Organic Materials**

Development of a food waste recycling program would support the Beyond Waste initiative for increased recycling of organics.

Ecology identifies six actions and ten milestones for addressing organics recycling, several of which are applicable at the local level. The County and cities have the opportunity to lead by example with regard to recycling of organic materials by maximizing the amount of recycled organic products that are used at government offices, by implementing on-site collection of

## ***Analysis of Current System***

organic wastes (including food wastes and soiled paper) for recycling, and by advertising the success of their programs to the public. Local governments can also help to develop incentives for business and institutional participation in organics recycling, and advertise their successes. WWM's efforts to develop a comprehensive food waste/organic waste composting program are directly supportive of Ecology's goal. It is important that the cities develop their own or participate in WWM's program to ensure its success. WWM can also provide support to local agri-businesses in the proper management of organic wastes generated on farms, and promote land stewardship within the county.

### **Goal 4. Making Green Building Practices Mainstream**

There are seven actions and 12 milestones identified by Ecology, most of which are applicable at the state level. However, local support can be developed in several areas. The County and cities can lead by example by adopting procurement processes and environmentally preferred purchasing policies to ensure that green building materials are purchased at the city and county level. The County can also help to provide better access to recycling and reuse opportunities to the local construction industry.

## ***Section 5 Future Alternatives***

- 5.1 Recyclables
- 5.2 Organics
- 5.3 Construction / Demolition Waste
- 5.4 Garbage (MSW)
- 5.5 Moderate-Risk Waste

After review of the existing Thurston County solid waste system information, the waste stream characterization, and the waste projection, a list of potential system modifications was developed. The alternatives address ways in which the Thurston County can potentially divert more waste from landfill disposal for recycling or composting. The alternatives were reviewed by a subcommittee of the Solid Waste Advisory Committee (SWAC), with one representative from each of the following groups: City, garbage hauler, recycling industry, and citizen-at-large, as well as members of the Department of Water and Waste Management (WWM) staff. Review of each option included considerations of technical feasibility, economic feasibility, regulatory feasibility, social feasibility, and overall need, to which point values were assigned, and then overall feasibility was determined. The alternatives discussed in this section represent those ideas that were determined to merit additional investigation in the Thurston County Solid Waste Management Plan update process. The feasibility scoring is contained in Table 5-1; in addition, alternatives that were eliminated from further consideration are contained in Appendix A.

The section headings are recyclables, organics, construction/demolition waste, garbage (MSW) and moderate-risk waste. In the discussion below, references to the "county" represent the population and geographic area of Thurston County.

### **5.1 Recyclables**

#### **5.1.1 Policies**

##### **R1. Mandatory "commercial" recycling (office, retail, government)**

Mandatory "commercial" recycling for office buildings, retail establishments, and government offices could greatly increase

## *Future Alternatives*

The City of Portland, Oregon has instituted a commercial recycling program that requires businesses to prepare a recycling plan with the goal of recycling more than 50%. The plan identifies the handling methods for the major components of their waste stream.

participation in recycling programs throughout the County. These are currently optional services offered by the hauler, which are charged at a separate rate, which is high enough to discourage participation. By limiting the mandatory service to office, retail, and government sectors, WWM will be targeting businesses that generate significant amounts of paper and certain types of plastic containers. A mandatory program could be packaged with service provided by the current waste haulers to provide a single program to all businesses. Or the program could be provided by other county-regulated or unregulated haulers to allow businesses to choose the services they need based on their specific recycling needs.

*Pro:* Commercial recycling becomes more feasible as more customers are added, and therefore a mandatory program may decrease the cost of the service.

WWM regulation of the system could ensure that licensed haulers are guaranteed customers but are also responsible for program implementation at a reasonable cost that reflects the economics of a large customer base.

Under a mandatory program, recycling service fees could be combined with the waste-collection fees and presented to the customers as an overall waste and recycling service charge.

*Con:* All county businesses would be required to pay for recycling services, whether or not they use them.

If “cherry-picking” of certain recyclables is allowed under a nonregulated hauling system, then the high-value commodities could be removed by another hauler, leaving only low-value materials for the curbside-collection hauler and increasing the subscription service cost.

A regulated system of recycling haulers limited to licensed waste haulers may have the effect of eliminating creative recycling solutions for unusual commodities.

By limiting the program to office, retail, and government sectors, implementation may be much more difficult since an opinion may need to be issued for determining what businesses will and won't be required to participate.

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*Discussion:* WWM would need to investigate its ability to regulate the commercial collection of recyclables. Without regulation of this collection, cherry-picking will occur and the hauler will be much less able to offer the service for a reasonable amount. However cherry-picking is not necessarily a bad program if providers can be located to tailor a businesses recycling program to their individual needs. By requiring all businesses to use a specific hauler for their recycling, creative solutions to recycling challenges may be limited, especially in situations where the business is required to recycle a specialty item that is uncommon in the rest of the recycling stream.

Another option is to require recycling of all licensed businesses to provide proof of recycling by identifying the major components of their waste stream and indicating how that material is recycled, i.e. collection hauler, specialty hauler (cherry-picker), or self-haul to a recycling facility.

### **R2. Establish baseline recycling summary**

WWM currently has limited data on the amount of recycling occurring in the County. Recycling data from residential curbside services are becoming available under the requirements of the new ordinance regarding minimum level of service, as well as from WWM Blue Bin dropoff locations; however, residential recycling represents only a portion of the full picture. Recycling by commercial, industrial, and governmental entities within the County can make up a large portion of the total solid-waste stream, so understanding current recycling activities across the board can provide insight for additional opportunities. Ecology collects the tonnage part of this information in its annual recycling survey, but the details are kept confidential and are not readily available to WWM. WWM can conduct a study on the residential portion of the recycling stream, or a more comprehensive study can be attempted that would include discussions with industrial and commercial customers to determine the types of wastes recycled and disposed of. The first recycling summary can be used to establish a baseline condition, which can then be compared to future studies in determining individual successes of new recycling and diversion programs. The study can be prepared using the readily available information from existing sources (or new information that will be available from the new commingled recycling program), or WWM could opt to attempt to obtain data directly from recyclers and haulers.

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*Pro:* Provides a baseline of recycling information from which WWM can gauge the success of new recycling programs.

Increases accountability of recycling programs in being able to measure their impact on the recycling rate.

*Con:* Does not directly impact the overall recycling rate in the County.

### **5.1.2 Programs**

#### **R3. Multi-family program**

Recycling services are required for multi-family complexes and mobile-home parks (referred to here as “multi-family”) under the new minimum-level-of-service ordinance. Though participation is not required, all multi-family complexes are charged the UTC-approved recycling rate. WWM can develop a program to provide assistance to multi-family complexes in developing a recycling program at their facilities, and provide brochures for all residences within the complex, describing the services and how they can participate. WWM can also actively market this service to facilities that the hauler has identified as not having established service.

*Pro:* This program is already in development, since it was required under the most recent minimum level of service ordinance.

*Con:* Residents of multi-family complexes can be difficult to contact to establish participation, since they typically do not own the property. More efforts are required to educate these residents because of the higher rate of turnover compared to that of homeowners.

*Discussion:* The multi-family recycling program is a requirement of the new minimum level-of-service ordinance and is planned to be introduced during the fall of 2007. The program may be easier to implement after residential single stream recyclables collection has been fully implemented in the County.

**R4. Green Schools Program**

The Oregon Green Schools program has developed a successful solid waste focused program in which over 200 schools participate and 22 have achieved the Premier Green School rating. The program was started in 1995 by several waste coordinators in the Portland Metro region. The non-profit is funded through private and municipal donors and relies on the inter school competition to generate interest and success. Waste curriculum is developed at the school level with support from the program. A similar Washington State program is being planned for Clark County.

WWM can develop a school waste diversion program that is part or the focus of a larger school sustainability program that encourages waste reduction and other environmentally friendly activities. The program can grant ratings (bronze, silver, gold, platinum) based on the success of a school, or can establish an inter-school competition based on ratings. The program can help school coordinators monitor waste-reduction activities, and provide information on conducting a waste and energy audit. Schools are presented awards based on their level of success during the school year. The goal of the program would be to establish a permanent waste-reduction and efficiency program at each of the participating schools. The program would provide support to the school on waste-reduction activities, school gardening, and composting, and assist them with locating available grants.

*Pro:* Raises student awareness of recycling and waste sustainability issues, in addition to other energy-efficiency and resource-conservation issues.

Integrated waste program could include support for school composting programs, as well as instruction on reduced use of herbicides and pesticides in the landscape.

Waste and energy audits can help to identify potential savings to the schools.

Competition between schools and reward-based incentives can increase participation by students and contribute to the success of the program.

*Con:* Schools do not have the funds available for participating in elective programs, so the program could require a subsidy from WWM or funding from parent/teacher organizations. Current testing focus provides little time for instruction on other topics. Grants could also be used to fund the program.

School administrators suggest that currently it is cheaper to throw away than to recycle, so there is very limited participation in recycling programs.

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The program goes beyond WWM's waste responsibility in addressing energy efficiency and general resource conservation, and staff is not currently available.

*Discussion:* Development of a green school program would require cooperation with multiple agencies/companies, such as the local electric and water utilities, being responsible for energy and water conservation. The program would also need to assess scoring with equal points coming from each area, so that by just doing the energy or water conservation a school would not be able to achieve a high overall rating. This would provide incentive for the school staff, parents, and students to lead efforts that may not lead to monetary savings at the facility, which is typically where recycling and composting efforts are not as attractive as energy reduction.

### **R5. School waste reduction and recycling awareness**

WWM is preparing reduction and recycling presentations to raise the students' awareness of waste issues focusing on waste reduction and reuse. The program includes performing waste audits to identify savings available within the current system, and classroom education focusing on composting, waste reduction, smart shopping, less toxic materials, etc. which are all items that can be then be used by students and staff at school, at home, and in the community. WWM is also developing composting programs at several schools in the school gardens.

*Pro:* Raises recycling awareness among students.

Waste audits can help to identify potential savings to the schools.

Classroom education provides information that can be used at school, at home, and in the community.

*Con:* Alternative means of student motivation must be found for program participation and success.

The program focuses on waste reduction but does not attempt to establish metrics to judge the success of the program.



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May not take into account other efforts already requiring a lot of effort at the school, such as test scores or inactive Parent Teacher Associations (PTAs).

### **R6. School recycling program**

WWM classroom education lessons can be developed in support of a school's recycling program. Specific lessons can address recycling efforts that are deemed to be necessary at the school, based on waste audits performed at the school. The program would also be used to ensure that recycling opportunities were offered within the school, and preferably in each classroom. The success of the program would be tied to monitoring of recycling and disposal rates for the school.

*Pro:* Provides the opportunity for students to recycle materials.

*Con:* Additional effort is required by WWM to develop individual diversion goals and to monitor progress.

May require additional resources at the school to service recycling bins and may make the program more expensive than the savings.

### **R7. Business outreach**

WWM can provide assistance in performing a waste audit and identifying waste reduction, recycling, or other diversion opportunities that business can implement.

*Pro:* Can provide additional information to the business community about other options for recycling or waste reduction.

*Con:* A business outreach program in an area without mandatory recycling or a reduction in disposal costs would offer little benefit to the community.

*Discussion:* A business outreach program would be necessary to support a mandatory business recycling program (see R1 and R2). It would also be beneficial to the community if the business recycling collection rate was significantly lower than the disposal collection rate.

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### **R8. Expand recycling service offered to businesses**

Recycling programs that are available to commercial businesses should be improved so that a financial incentive is provided to the business to recycle. This can be in the form of a reduced rate for mixed recyclables, or free collection of targeted recyclables. Since collection of commercial recyclables is not regulated, there are more options that could be available to local businesses. However, LeMay is currently the only provider available in the County. There is one local contractor who provides transportation services of C/D materials to Recovery 1. In addition, Weyerhaeuser provides collection of paper and containers to the state government offices in the core area and at the Ecology building. Expanding competition between haulers for these materials could reduce the cost to the business. WWM could also negotiate with LeMay to offer a reduced rate (charge only for the pickup services). WWM could also encourage other recyclers to offer targeted collection of recyclables to large businesses (for instance, paper collection by Weyerhaeuser).

*Pro:* Benefits of increased service could include adding container recycling for commercial business.

*Con:* There may be too few businesses in the County to support multiple collection companies.

*Discussion:* Many business owners don't understand why they cannot recycle items at work that they can recycle at home, such as cans and bottles. The introduction of the County's single stream recycling services by LeMay may help to address this issue for most customers. Encouragement of additional service providers may not lead to significant results, so the focus should be on developing expanded services with the existing hauler. However, the county may also continue to look for opportunities to encourage other recyclers to offer service within the county.

### **5.1.3 Facilities**

### **R9. Modify existing public z-wall to a "resource recovery" concept with voluntary recycling**

WWM can offer recycling access at the public z-wall area at the WARC, as well as at Rochester and Rainier. A transfer facility in

## *Future Alternatives*

Western Oregon Waste, in McMinnville, has realized a diversion rate of about 60% by providing the opportunity to recycle at the self-hauler tipping lane, in addition to the disposal box. Customers wishing to use this area pay the disposal rate for their entire load and then sort recyclables at the tipping stall.

McMinnville, Oregon, is successfully offering this service and achieving a diversion rate of more than 60 percent. Customers are directed to tipping lanes that are separated by labeled recycling bins on either side of the lane and a disposal drop box immediately behind the lane. Users are asked to separate their materials as they unload. Bins include wood, metal, corrugated cardboard, and commingled recyclables. This type of diversion-facility modification can be easily piloted at the WARC z-wall to gauge the level of participation at the facility. The pilot could set up one or two tipping lanes with the diversion containers, or one side of the z-wall area could be set up (six lanes). The diversion rate at the pilot locations could be determined by weighing the collected materials and those going from the recovery area to the transfer station for disposal. Attendants would help explain the setup to customers. Another incentive to use this area would be to provide cover for the users. This would protect users from the rain and sun while sorting.

*Pro:* Easy to implement pilot program by adding drop boxes at some of the existing z-wall lanes and providing supervision/assistance by attendants. Something similar has already been instituted at a portion of the z-wall facility.

Would provide safer access to recycling opportunities for self-haulers.

*Con:* Easier to incorporate this layout into a new facility than at existing tip walls.

New operation could require a modification of the operations contract to allow for the additional handling of materials.

Could slow down self haulers at the z-wall as they sort materials.

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### **R10. Materials-reuse dropoff (at WARC)**

Access to reuse facilities could be increased at the WARC. There is enough space at the facility for WWM to offer additional reuse opportunities for additional household items and electronics, as well as construction materials. Vendors providing these services would need to sign agreements to provide trained staff for their locations and to transport collected materials on a regular basis. WWM currently has this type of agreement with Goodwill, although other potential vendors include The Salvation Army, St. Vincent de Paul, Olympia Salvage, and Habitat for Humanity. In addition, WWM could staff an open Swap Shop area similar to what is provided in the HazoHouse area, where residents could drop off usable items and then pick up items at no charge (or for a small fee).

*Pro:* Would increase the opportunity to reuse items within the County and divert materials from the landfill.

*Con:* Additional dropoff options within the WARC could increase the amount of traffic congestion under the current layout.

If a Swap Shop setup were to be offered, additional staff would be required and it would be necessary to provide a covered area to protect the items from the elements.

### **R11. Resource recovery center or park**

Resource Recovery Parks have been established in several locations in California and have become a common theme in New Zealand. The goal of the park is to increase recycling and reuse of materials by supporting related businesses on the premises.

WWM can consider the public-private development of a resource recovery center or resource recovery park. A resource recovery center is a facility that combines recyclable materials dropoff with collection and resale of used goods. The facility could be built in conjunction with a transfer station to provide additional recycling opportunities and businesses. The facility could also include composting operations, building-material recycling, and an education center. A resource recovery park is a larger and more complex facility that combines all the functions of a resource recovery center and aims to attract and foster business development around recovered materials flowing into the site. The resource recovery park can become a business development cluster, supporting new enterprises that may not otherwise have been viable without the synergies and support of the park. Resource recovery parks can also provide certain shared business areas to allow

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smaller businesses access to shared office space, equipment, and supplies.

*Pro:* Would increase access to businesses that divert material from the waste stream.

Could provide support to new businesses that are diverting material from the waste stream, and help to make the businesses viable.

*Con:* There is currently little demand for this type of facility in the community.

Development of this type of facility would require new infrastructure at the WARC at a new transfer station, or in another location.

### **R12. Targeted sorting at Pacific Disposal MRF**

Pacific Disposal's MRF was developed to serve the County's source-separated curbside recycling-collection program. Because the program has been modified for commingled recyclable materials, the sorting line at the MRF is no longer being used for this material. Pacific Disposal has indicated that the paper-sorting line will continue to be used for the commercial recycling (and shredding) sorting; however, the best use of the former container-sorting line has not yet been determined.

Use of the former container-sorting line at Pacific Disposal could be dedicated to sorting commercial-container recycling or expanded commercial-paper sorting, and the capacity increase may be enough to allow a lower rate for the commercial recycling service, increasing participation and overall economics of the program for Pacific Disposal.

*Pro:* Pacific Disposal is looking for materials to process over its equipment and is open to ideas.

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*Con:* No material is currently identified for processing.

The facility is not currently set up for C/D processing.

### **5.2 Organics**

#### **5.2.1 Policies**

##### **OR1. Expand curbside collection of yard debris to other communities**

An expansion of curbside collection of yard debris to other communities in the County would increase the access to the program. In general, County ordinances impact residents living outside of the incorporated limits of cities. Changes to the minimum-service ordinance could be considered to require yard-waste service for all residents of the County, or it may be focused to address those residents living within urban growth areas (UGAs) who are outside of the incorporated city limits. Services to residents within the UGA would be the most effective way to increase participation at a reasonable cost, since most houses are still relatively close together. In outlying areas of the County the driving distance between houses is much greater, so that the cost of the program would increase. In addition, many of these residents already manage yard debris on their own properties and would have little use for the program.

*Pro:* Provides yard-debris collection to most County residents.

*Con:* Does not provide curbside collection of yard debris to all County residents.

*Discussion:* Expansion of the curbside yard-debris program to the UGAs is required under the current Minimum Service Level Ordinance. The new requirement is for curbside yard-waste collection to be offered to all residents living within a UGA or major housing development.

##### **OR2. Ban yard debris from curbside waste-collection stream**

WWM can ban yard waste from garbage collection (the MSW stream), requiring all material to be collected through the yard-waste service offered curbside or at the WARC. This policy should

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have the impact of decreasing the amount of yard waste that was observed in the WARC transfer station in the 2004 Waste Characterization. The ban on yard waste would have minimal or no impact on residents who compost their materials at home or for those who haul and segregate yard wastes at the WARC.

*Pro:* Acts as a disincentive to disposing of yard debris within the garbage collection service, decreasing the amount of yard debris sent for landfill disposal.

*Con:* The program would be difficult to monitor and enforce.

Material bans are often unpopular with the general public.

Some customers may have too little yard debris to justify subscription to the yard-debris-collection service and would not have any other alternative, other than home composting

*Discussion:* A recent ban on burning of yard debris has been implemented in the County. A further restriction on the disposal method for yard debris could be viewed by residents as eliminating one more option for handling yard debris.

This is a service that not all residents need and that could result in an inefficient use of contractor labor or County resources.

### **OR3. Partner with LOTT for co-composting of biosolids with chipped wood waste**

Composting of wood waste provides a higher use of materials than if the wood is continued to be used to provide energy through combustion. Composting of wood chips could also be used to support the composting of biosolids produced at the County's waste water treatment plants.

The WWM can investigate the ability to partner with LOTT for the composting of the County's biosolids along with the County's wood waste. Currently this wood waste is chipped and marketed by LeMay as hog fuel. Wood chips are required for the composting of biosolids because they allow for proper air flow and provide a carbon-rich source of material for the process. The WWM would be required to negotiate with LeMay, or would need to include these terms in the next yard-waste contract. Under the yard-waste (or organics) composting contract, the WWM can restrict the amount of hog fuel produced and specify a destination for chipped wood material produced from grinding of the woody yard waste received at the WARC. The partnership would allow the facility handling LOTT's biosolids to obtain chipped wood for co-composting at no cost, up to the total amount of chipped wood produced by the WARC. Since the carbon demand of biosolids is much higher than

## ***Future Alternatives***

what is produced by the WARC, the composting facility would still require additional sources of wood chips and other bedding materials.

*Pros:* Composting of wood chips is a higher use than energy recovery.

Co-composting of the two waste materials would be a more sustainable method of handling the two streams, which is a priority of the State's *Beyond Waste Plan*.

Provides a stable destination for wood-chip material.

Combustion for energy recovery and land-application practices is subject to air emissions regulations in addition to solid waste regulations, and changes in these regulations to improve air quality or other environmental issues could alter how these processes are carried out, making co-composting the most feasible method for recycling.

Composting of wood chips releases less carbon and particulates to the air shed, improving regional air quality.

Processing can be done at an existing private compost facility and does not require construction of a County-owned facility

*Con:* LeMay has a current contractual commitment for wood chips coming from the transfer station.

The entire wood-chip supply from the WARC is not enough for composting of all LOTT biosolids; therefore, additional wood-chip material would still be needed for the composting process.

Variability in material supply from the WARC could be difficult for compost-facility planning purposes.

*Discussion:* LeMay's existing contractual obligation for the chipped woody debris ends with the current yard-debris contract in 2008. At that time, the County could require an alternative means of handling the chipped wood under the new contract.



## *Future Alternatives*

Current LeMay agreement with Grays Harbor Paper specifies that the wood chips are used to fire boilers used in recycling paper at the facility; the material is used to directly support recycling processes.

### **5.2.2 Programs**

#### **OR4. Encourage backyard composting**

Backyard composting is a very sustainable way for residents to manage their own organics, reducing the demand on the County organic waste system. WWM currently subsidizes several types of compost bins, which are available to residents through the Master Gardeners/Master Composters program that is provided through Washington State University. This program also provides composting courses free to the public. WWM regularly advertises these programs in its quarterly *Talkin' Trash* newsletter, which is mailed to residents. Additional methods of advertising the backyard-composting program should be evaluated, and could include messages in customer bills for collection services or through providing additional demonstrations at nurseries and garden centers. WWM may want to focus more attention on educating the public on the practice of composting vegetative kitchen scraps in home composting bins to reduce the amount of food waste in the MSW stream.

*Discussion:* WWM should continue to administer this program to reduce the amount of yard debris that enters the County solid waste system and reduce the overall use of County resources.

#### **OR5. Add yard waste to drop-box sites and charge accordingly**

WWM currently maintains one dropoff location for yard waste, which is at the WARC. Additional access to large-volume yard-waste dropoff locations may increase the volume of material collected. Dropoff of yard waste at the drop-box facilities could provide better access to residents of the southern parts of the County, and would reduce the amount of traffic at the WARC. Dropoff fees should be comparable to the charge at the WARC plus the cost of transportation. Additionally, these materials could be hauled directly to Silver Springs or Little Hanaford, instead of transferring through the WARC. Because of the bulky nature of yard waste, a method of bulking the loads would greatly reduce the number of trips (and transportation costs) and could include a

## ***Future Alternatives***

Yard waste dropoff is currently only provided at the WARC. Additional dropoff points would increase access to the general public and may increase diversion of yard waste from the MSW stream.

compacting drop box or use of a backhoe to periodically smash down the materials in the drop box.

*Pro:* Provides more convenient access to yard-waste services to all County residents, which is important in light of the burning ban.

Existing commercial composting facilities that accept material from the general public should be considered when evaluating the need for additional yardwaste dropoff locations.

*Con:* Current drop-box facilities may not have sufficient space for additional boxes necessary for receiving yard debris, and could require the construction of additional z-wall space for yard-waste boxes.

Timely servicing/hauling of yard-debris boxes would be critical to prevent anaerobic conditions from developing, which can result in odors.

Service may need to limit or ban grass clippings and collect only woody debris and leaves, since grass clippings may present a higher danger of spontaneous combustion. Frequent hauling of the containers would also be effective in reducing the potential for fires.

*Discussion:* With the opening of Silver Springs Organics in Tenino, a new location will be available for south County residents to directly dispose of large loads of yard waste.

### **OR6. On-site composting and education at schools**

A very effective way of communicating with the public is through schools. Many areas have seen great long-term success through offering education programs at elementary and middle schools. As local schools develop gardening areas, there is a good opportunity to provide education to schoolchildren involved with the program. The program could provide assistance or subsidize compost bins at these schools in return for space and on-site staff responsible for the program. Periodic workshops with the school programs could address the benefit of compost, how to compost, and what to compost. Students would be encouraged to compost at home.

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Early participation in composting and waste-education opportunities may result in changed waste-generation habits in the future as these students understand the basics of proper recycling and composting, as well as have a better understanding of the value of landfill space.

*Pro:* Provides early education on the importance of composting and instruction on proper composting techniques.

WWM has recently received a CPG grant for yard-debris reduction and diversion, which could be used to provide the necessary materials for starting a school program. Commitment from the school and WWM would be necessary to provide staff for the program.

*Con:* Current school funding is not sufficient to provide staff or materials for the program; funding would be required from other sources.

*Discussion:* A food-waste-composting program has been in place for seven to eight years at Lincoln Elementary in the City of Olympia. Full implementation of the program would provide other students the opportunity to learn about the benefits of composting food waste and yard debris, to learn proper composting methods, and to reduce the amount of waste produced by the school.

WWM may selectively target schools for expanded programs based on their level of interest and active participation in waste reduction education programs. Since the current program relies on a somewhat sophisticated and expensive composting tub, active participation and staff dedication will be necessary to make the program worthwhile.

### **OR7. Food waste to compost program**

WWM is developing a commercial food-waste-composting pilot program. Since this is a pilot program, with a defined length, the program is still included in the consideration of future alternatives.

An organics-composting program that includes food waste can address a major portion (up to 14 percent) of the solid waste stream that is currently being disposed of at the landfill. With inclusion of compostable paper (i.e., food-contaminated paper), another 4 percent of the MSW stream can be diverted as well. WWM has

## ***Future Alternatives***

access to a local facility that is approved for composting food waste, and additional facilities may modify their permits to include food waste in the future.

WWM's current food waste collection pilot program will offer service to selected institutional and commercial participants in Lacey. As interest in the program grows, WWM will evaluate the cost of expanding the program to include more participants. Materials collected from participants will be hauled directly to the composting facility instead of making a transfer at the WARC.

Residential food waste remains an unaddressed segment of this particular waste stream in the County. Residential food waste programs need to be offered through a curbside program in order to be effective. Curbside collection can be in the form of a separate cart (with lid) specifically for food waste, or it can be combined with yard waste in carts under an organics-collection program (see below).

*Pro:* WWM has begun development of a food-waste-collection pilot program for certain commercial and institutional locations that sign up for service.

The pilot program focuses on a narrow range of businesses that produce a large volume of food waste. If interest in the program increases, WWM and LeMay may be able to expand the program to match the demand.

*Con:* It would be necessary to review the transportation economics of this type of system, especially if a small number of participants is expected. The cost to the user should be limited to no more than the cost of waste-disposal service.

There is a potential for contamination of the end compost product if inappropriate materials, such as plastics or metal, are thrown into the food-waste bins. The program is focused on County businesses only, leaving unaddressed the residential portion of the County's food waste, which is also a large portion of the stream.

**OR8. Combine food waste with yard-debris collection**

The City of Bellevue completed a successful implementation of food waste composting by combining this waste with yard debris collected curbside. The program was implemented using existing equipment and containers, by distributing new labels with instructions for what materials can and can't be composted through the program.

Another food waste composting option for residents is to combine collection of food waste with yard waste. WWM can require organics collection (food and yard waste) as part of the minimum-level-of-service ordinance, but this should be limited to the urban areas that currently have yard-waste collection service. Under the program, customers can combine food waste, yard waste, and compostable paper in a cart that is set out for curbside collection. Residents are provided with information, in the form of mailings or stickers that are applied directly to the collection cart, on what materials are allowable.

*Pro:* This program could be easily and rapidly implemented using the existing yard-waste collection system.

The program would allow County residents to perform more source-separation of materials to divert more waste from landfill disposal.

The program could address food-contaminated papers and cardboard, in addition to the more traditional food wastes: vegetable and grain products and meat scraps.

Biodegradable plastic bags are commercially available so that customers can continue to bag their waste.

*Con:* Under WWM's current policies, all collection vehicles would transport mixed food and yard waste directly to the composting facility.

There may be a higher potential for contamination of the finished compost product in a residential program where training in the proper preparation of materials may be less rigorous.

The cost of participant education may be increased due to the number of County residents who would have access to the program. However educational efforts may also be effective through articles in issues of "Talking Trash" and container labels

**5.2.3 Facilities**

**OR9. Establish food-waste transfer sites**

A food and yard waste transfer location is necessary in order for the food waste pilot programs to become larger in scale within the county. Without a transfer location that is approved to handle food waste, the transportation costs will prevent program success.

As the food-waste collection program grows, transportation costs for the collected waste will continue to grow as well. If WWM experiences a large amount of interest in the program, the transportation cost may prohibit additional participation. Transportation costs can be decreased by allowing the hauler access to a site where the collected material can be accumulated into larger transfer trucks. This would also have the benefit of reducing the amount of collection-vehicle traffic on County roads. It would be necessary to transport the food waste to the composting facility at least once per day. WWM can consider several sites for accumulating food waste, including the WARC (which already has an aerated pad and leachate-collection system for the former compost operation), any of the drop-box facilities, or other County properties with limited neighbors and good truck access, such as a new transfer-station site. In addition, WWM could partner with the City of Olympia to provide a transfer point at its yard waste dropoff facility. Transfer points could be managed in several ways; however, a closed-container approach is recommended because of the potential for odor. The facility could make use of a specialized direct-load transfer trailer that can accept waste directly from a collection vehicle. The trailer is equipped with an automated tarp system and a walking floor to distribute the load to the front of the trailer.

*Pro:* An accumulation site would allow the hauler to transfer and bulk organics loads destined for the composting facilities (in south Thurston County or Lewis County), reducing the transportation costs associated with a food-waste collection program.

Accumulation sites would reduce overall truck traffic on the County highway system.

*Con:* Social support for sites may not exist because of odor concerns.

*Discussion:* There is a misconception that odors associated with food wastes can be very strong. In general, food-waste odor during collection is less noticeable than the odors associated with green yard wastes. Food waste is currently collected as garbage, and

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except on very hot summer days, there are rarely complaints with regard to odors coming from regular collection trucks or the transfer station. Segregating food waste out of the garbage stream and into the yard-waste stream would not be expected to aggravate odor issues currently experienced by WWM or LeMay. If a transfer site is managed in such a way that food wastes are not allowed to remain on site overnight, then odors should not be an issue. Odor management at the composting facility may be a concern, but with standard operating procedures, such as pile turning or proper aeration of compost piles, odor generation can be easily managed. In addition, since the compost facilities are privately owned and operated, liability does not fall on the WWM once the material is delivered.

### **5.3 Construction / Demolition Waste**

#### **5.3.1 Policies**

##### **C1. Increase effectiveness of C/D recycling through WARC**

WWM can negotiate a contract amendment with Allied (the prime contractor on the transfer station operation contract) to increase the effort put into sorting C/D materials received at the WARC. This could include creation of new areas to receive source-separated C/D materials (such as dry wall, concrete, wood, and metal) or requirements to process all C/D received at the transfer station, staffing of the pickline for a longer portion of the day, and/or expanding the list of commodities sorted from the waste stream. These alternatives would require an increased commitment from either Allied or WWM in developing markets for the materials diverted from the waste stream. WWM might also need to develop measures for screening materials to ensure that potentially hazardous items are not accepted as C/D.

*Pro:* Could increase C/D recovery through facility or operation modifications.

Can be focused on how to receive C/D better and divert more materials at the facility before bringing them to the transfer-station building.

## ***Future Alternatives***

*Con:* Additional materials may be too contaminated to recover on the pickline.

According to LeMay, most C/D received is already being sorted and there may not be a significant amount of additional C/D material that can be removed.

### **C2. Require recycling plan for larger C/D projects as part of building permit**

Recycling plans have been implemented successfully in jurisdictions in several states including California and Oregon. The City of Ontario, CA has utilized the recycling plan to support their ordinance to reduce waste disposal by 50%. Builders are required to identify recyclers during the permitting process and then to demonstrate the amount of material diverted at the end of the project. Not submitting the required plan or diversion documentation may delay final occupancy at the completion of the job, though no fines are assessed.

Several communities in the nation have developed a recycling requirement for the construction process. In these locations, builders are required to submit to the building department a recycling plan that specifies the types of materials to be used during construction and the amount of these materials that will become waste from the site. The plan also specifies any demolition materials that may be produced before construction. All items specified as waste require a description of how that waste will be handled, either disposal or recycling, and identify where the material will be taken. Also available is a list of all known recyclers in the area with contact information, so that the builder is made aware of where the materials can be taken. An administration fee would be required to pay for processing of the building applications.

*Pro:* Builders can recover the fee from their customers.

Some of the very large construction companies are already doing a very effective job of minimizing waste and separating/recycling their wastes, since this can help maximize profits.

The burden for compliance is on those contractors who are not currently following good waste-minimization practices.

Waste haulers already have a wide variety of waste container sizes and can accommodate delivering multiple smaller bins to a construction site.

*Con:* Source separation of construction materials could require contractors to maintain several waste bins on site at any given time. Some sites may not have sufficient space for managing several bins.



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*Discussion:* Similar policies in all of the incorporated city areas would be recommended, so that all County residents are subject to the same requirements with regard to C/D recycling, and eliminate confusion over when and where a recycling plan is and is not required.

The recycling-plan coordinator would need to be available to help the contractors comply with the recycling plan requirements, including addressing space issues on small sites and finding recyclers for unusual or new materials.

### **C3. Encourage green building standards for all buildings in the County**

Green building standards have been adopted in several municipalities throughout the country and include a waste reduction and recycling component, points are also awarded for energy and water efficiency.

Green building standards rate a building based on many categories for which points are awarded. One area of the green building point system is waste reduction. Buildings are encouraged to divert at least 50 percent of C/D waste materials, with additional points awarded for exceeding 75 percent. Sites are required to develop and implement a construction waste management plan that, at a minimum, identifies the materials to be diverted from disposal and whether the materials will be sorted on site or commingled. Excavated soil and land-clearing debris do not contribute to this credit.

*Pro:* Contractors attempting to meet the green building standards would have motivation to meet the waste-reduction goal.

Sustainability requirements of green building are recommended in the State Beyond Waste Plan.

WWM and SWAC can work with other departments and utilities to develop a green building program in Thurston County.

*Con:* A green building program goes far beyond the waste consideration and is not within the authority of WWM to require or develop on its own.

*Discussion:* The promulgation of Green Building standards within the county, would require cooperation from other departments or policy direction from the Board of County Commissioners mandating that all County departments adopt Green Building practices.

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### **C4. Lower C/D rate for source-separated materials/higher rate for mixed loads**

Charging customers less for separated C/D would encourage customers to bring material that could easily be segregated for recycling. Mixed C/D would then be sorted over the WARC pickline or at a sorting facility.

WWM could review C/D disposal rates charged at the scale house and develop two rates for C/D material: one rate for mixed C/D material and a lower rate for source-separated C/D material. The two rates would provide a financial incentive for contractors to separate their waste materials at the job site. Separated materials could be directed to a separate area of the WARC where they could be placed in designated areas by material type. These designated areas would require supervision to ensure that mixed materials were not being brought in, but they would otherwise require very little processing to prepare for marketing to recyclers. Mixed C/D materials would be directed to the WARC for processing over the pickline, or they could be transported to a C/D recovery facility, such as Recovery 1. The higher rate for mixed materials should be sufficient to cover WWM expenses for sorting or for transporting to Recovery 1. In developing the higher rate for the mixed C/D materials, it is important to note that it may be necessary to set the MSW (garbage) rate to be equal to or greater than the mixed C/D rate, so that contractors do not have the incentive to claim the material as MSW. This approach could be combined with other C/D policies as a means of funding changes to C/D processing at the WARC.

*Pro:* Provides a financial incentive for source-separation of C/D materials by contractors.

May encourage contractors not separating their waste to go directly to a material processor, such as Recovery 1.

*Con:* Would require facility improvements at the WARC to accommodate dropoff of separated materials.

May provide incentive for contractors to improperly dispose of waste (such as on the construction site or as MSW) instead of recycling it.

### **C5. Do not accept C/D mixed loads at WARC**

WWM can establish a policy of not accepting mixed loads of C/D at the WARC. An area would be provided for depositing source-separated C/D material within the WARC. Oversight of these areas would be necessary to ensure that mixed materials were not being

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deposited. It would be necessary to determine the types of materials to be collected by evaluating the existing and developing markets for various commodities. Categories could be added as new markets develop. Haulers with mixed loads would be directed to sorting facilities, such as Recovery 1. For this policy to be effective, it would be necessary to ban C/D from the MSW stream to prevent users from legally designating their C/D as MSW (garbage) and dumping it in the transfer station. Facility development would be required to provide a C/D dropoff area.

*Pro:* The policy addresses only mixed C/D material; source-separated C/D materials would still be managed at the WARC.

*Con:* Requires a ban of C/D material from the MSW (garbage) stream in order to be effective. Bans can be an unpopular method of achieving a worthwhile goal.

### **C6. Alternate C/D waste residual disposal location**

As an alternative to disposal at the Roosevelt Landfill, C/D can be sent to other limited material landfill facilities, such as the Weyerhaeuser Headquarters Landfill in Cowlitz County. These landfills have been designed to manage dry materials, such as wood waste and C/D, and are not permitted for managing MSW. The facilities often can accept C/D waste for a lower cost than an MSW landfill, since they are not as capital-intensive to construct. Since WWM currently pays the same for C/D disposal as it does for MSW disposal, it could benefit from redirecting the non-recovered C/D material to a limited-use landfill. The Weyerhaeuser Landfill is also much closer to Thurston County and could also result in savings on transportation. This alternative would likely require a negotiated change to one or more of WWM's waste contracts.

*Pro:* Disposal of C/D waste residuals could have a smaller demand on resources by landfilling in an inert-waste landfill closer to Thurston County.

*Con:* Would require modification of the existing pickline and transfer station to allow for C/D residual to be loaded in a separate container.

Amount of material diverted may be small, depending on amount of recovery on the pickline.

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### **5.3.2 Facilities**

#### **C7. Separate MSW and C/D operations within WARC to separate contracts (and contractors)**

Paying a contractor by the amount of C/D recovered instead of the amount received could result in more effort and better recovery of materials. Dedicating space within the WARC for C/D handling would ensure that all C/D is processed over the pickline.

WWM could negotiate with Allied to decrease the recovery goal for the transfer station operation contract to 0 percent, while establishing a new contract for C/D operations at the WARC that would require the processing or sorting of all C/D material received. This would allow Allied to direct all MSW to transfer trailers and simplify operations without concern about meeting a recovery goal, while LeMay or another contractor processes all C/D with a recovery goal of 50 percent or higher. The contract could also require the C/D contractor to pay for all material disposed of while allowing the contractor to keep the profit from the sales of recovered material. Separating C/D handling from the general MSW contract could have the effect of eliminating the current recovery disincentive.

The transfer-station building can be segregated into two areas, one for MSW handling and the other for C/D handling. This separation can occur with or without the construction of a wall to separate these functions. Two or three tip lanes can be designated for C/D dropoff. All of the C/D material would be loaded onto the existing sort line in the transfer station for sorting by contractor staff. The contractor could be required to provide additional sorting staff to enable the sort line to achieve a C/D recovery rate that is higher than the current 30 percent.

*Pro:* Provides financial and contractual incentive to the C/D contractor to recover as much material as possible.

Formalizes the current operational procedure at the transfer station.

All C/D material is processed over the pickline for recovery.

Could be accomplished with minimal infrastructure impacts, or could be included as part of a building expansion to facilitate better handling of MSW and C/D at the transfer station.

*Con:* Does not address the goal of encouraging more source separation before receiving material at the transfer station.

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Current operation contract includes C/D material in the operation of the transfer station, so WWM would have to renegotiate the contract with Allied.

There is not enough room available in the existing transfer station for a separate contractor to operate in the same space. An expansion of the transfer station may be required.

If a physical separation were to be constructed to separate the C/D operation from MSW operations, it might become much more difficult to manage certain items that do not fit on the pickline. These oversized or odd-sized items must be placed directly into the transfer-trailer chutes, which are not accessible from the pickline area.

*Discussion:* LeMay is currently operating the transfer station in a manner similar to this, so it is just formalizing the process. An amendment to the existing contract requiring sorting of most of the C/D received or extended operation of the pickline could be as effective, if combined with other incentives.

### **C8. Repurpose WARC to C/D-only facility**

The existing transfer station at the WARC could be redesignated as a C/D-recovery facility. Under this scenario, MSW handling would be moved to another building (either at the WARC or elsewhere), and only C/D material would be processed. This would allow a large number of tipping lanes for C/D dropoff, along with truck access through the eastern floor-level door. The building would provide a large amount of floor storage space for received materials. All C/D would be processed either on the storage floor or over the sorting line to maximize the amount of recovery. The facility would require a manager whose duties would include researching and developing markets for the recovered materials. Those materials not recovered would drop off the end of the conveyor into a transfer trailer for disposal at the Roosevelt Landfill. This alternative requires the construction of a separate transfer-station facility for handling MSW; in addition, significant modifications may be required for the WARC facility.

*Pro:* Modifying the WARC as a recycling facility would provide an optimal location that is close to many northern material markets, as opposed to another County location farther south.

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Existing infrastructure in the transfer station (i.e., the pickline) could continue to be used for sorting C/D material. Additional modifications may be necessary to enhance the system to make it more suitable for picking all of the C/D material.

Other recyclable materials can be accepted from the general public and bulked to be marketed as a larger quantity.

*Con:* May be difficult to support processing of C/D materials and other recyclables without subsidizing from general MSW tip fee.

Would require a higher level of staffing at the facility to operate the pickline, direct and supervise facility users, and market the recovered materials (and develop markets for new materials). The operator would need to develop screening practices to identify materials requiring special handling, such as asbestos- or lead-contaminated demolition materials. It would be necessary to transport these contaminated materials for landfill disposal as special waste.

### **C9. Set up partnership to provide C/D debris dropoff facility in Thurston County**

Hosting a dropoff area for a C/D sorting facility would minimize the capital cost of providing the service to WARC customers, while maximizing the amount of C/D recovered.

WWM can attempt to develop a partnership with a private company that offers C/D-recycling services. Through the partnership WWM could provide space to the contractor or assist with locating space where materials can be dropped off in Thurston County, from which the contractor hauls the materials to the processing facility at another location. Recovery of materials is reported back to WWM so that this information can be used to gauge the success of the program. Material not suitable for recovery would be disposed of by the company or by WWM, depending on the agreement reached.

*Pro:* Would offer local C/D dropoff service for Thurston County residents and contractors.

County investment would be limited to developing and providing space at the WARC.

*Con:* Would require negotiation with the current WARC operator in order to site the dropoff at the WARC, unless it is sited

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before the scale house. Current contract gives ownership of the waste to Allied at the scale house.

It may be necessary to increase the C/D tip fee to cover processing and transport cost from the WARC to the partner's facility.

### **C10. Construction material reuse dropoff**

WWM can work with various organizations to develop a construction material reuse dropoff at the WARC. The materials accepted would be limited to those items with a remaining use, such as sinks, unused or salvaged wood, doors, windows, unused roofing materials, etc. A previous program partnered with Habitat for Humanity to provide a dropoff area for certain construction materials (similar to the existing agreement with Goodwill). However, the dropoff area was not consistently staffed, the staff provided did not perform the required duties, and eventually the grant for the service expired and was not renewed. This facility could allow users to drop off certain items that still have a useful life remaining, and then for this material to be resold to the public for use. There are currently other, similar, services offered in the County, such as Olympia Salvage and Habitat for Humanity; however, a dropoff location at the WARC could increase the convenience and accessibility for residents and contractors when donating materials, and provide advertising of the partners' retail locations.

*Pro:* Would provide easy access to the public and contractors to drop off building materials that are still usable.

*Con:* Previous partnership for this service was not well staffed or trained and led to several problems at the WARC (such as general waste dumping and fires).

*Discussion:* A contract for this partnership should specify the minimum level of staffing required at the WARC as well as training and responsibilities of the dropoff-facility staff. In addition, this facility should be located before the scale house in order to avoid conflicts with the transfer station operation agreement.

## **5.4 Garbage (MSW)**

### **5.4.1 Policies**

**W1. Provide financial incentive in contract to increase separation and recycling**

Under the current contract structure the Allied/LeMay team is paid less for materials recovered than for materials disposed. Reevaluation of the compensation structure for recovered materials may increase diversion.

The current transfer station operation agreement specifies that the contractor is paid an incentive for exceeding the recovery goal, which is currently 5 percent. The incentive is equal to 30 percent of the transport/disposal cost for material diverted from disposal. This incentive was developed so that the contractor operating the transfer station would be motivated to divert as much waste as possible to maximize its profit. However, the waste export and disposal contract was written concurrently with the transfer station development and services contract, and there are many references in each of the contracts to the other contract. The current contract structure results in vertical integration of the waste-management services. Both contracts are serviced by the same contractor team, Allied, with LeMay specified as the subcontractor. Since both contractors are paid on both contracts for waste being processed and disposed of, the highest financial incentive is to handle and dispose of as much waste as possible under both contracts. The incentive for disposal is compounded by the fact that the prime contractor on both contracts is the owner of the landfill. The current incentive payment for diverted waste results in the Allied/LeMay team receiving only two thirds of what they would receive for disposed-of waste.

WWM could review the existing incentives defined under the transfer station operation contract and attempt to identify additional incentives that would result in increased separation and recycling at the facility. This would generally be a higher incentive payment for each additional percentage point above the required recovery goal. It would be necessary for the incentive to be high enough to outweigh the lost revenue that the contractor would experience under the transport and disposal contract.

*Pro:* Eliminates the disincentive for material recovery by the transfer station operations/long-haul disposal contracts.

As markets develop for materials with a marginal value, it is much more likely that the contractor will make the effort to



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recover and recycle the material if the contractor will not earn more for just landfilling the waste with less effort.

*Con:* LeMay believes that there is not much other material worth recovering in the waste stream accepted by the WARC transfer station (which is not contaminated).

Increased effort spent recovering material from the pickline decreases the overall transfer station processing rate.

### **W2. Provide incentive to increase waste recycling and reuse by separating WARC operation from waste-disposal contracts**

Since both contracts are currently with the same contract team of Allied/LeMay, there is no motivation for the transfer station operation to recover lower value commodities when the contractor receives more for their disposal.

The waste export and disposal contract was written concurrently with the transfer station development and services contract, and there are many references in each of the contracts to the other contract. Both contracts are serviced by the same contractor team, Allied, with LeMay specified as the subcontractor. Since both contractors are paid on both contracts for waste being processed and disposed of, the financial incentive is to handle and dispose of as much waste as possible under both contracts. The incentive is compounded by the fact that the prime contractor on both contracts is the owner of the landfill.

WWM should investigate the ability to separate the contracts and contractors through negotiation with Allied, so that Allied remains the prime contractor on the Transport and Disposal contract, and so that a separate party becomes the prime contractor on the transfer station operation contract. In this way, the transfer-station operator would have a reduced interest in disposing of waste, if it can make more profit by recovering it, with the additional profit coming from incentive payments and revenue from material sales. WWM can also wait until the transport and disposal contract ends in 2010 to make these terms part of the new contract and will then be required to renegotiate only the transfer station operation contract. Incentives could include a payment similar to what currently exists in the contract for exceeding the recovery goal: 30 percent of the transport and disposal payment. At a minimum, the incentive should cover the cost of the additional effort required from the transfer-station operator to recover the material.

*Pro:* Makes the existing financial incentive effective for recovery of material under the transfer station operation agreement.

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*Con:* A legal opinion would be necessary before proceeding with the negotiating, bidding, and contracting efforts.

### **W3. Mandatory collection within UGA**

Collection within UGAs could be mandatory to ensure proper disposal of garbage. With this policy in place, there would be no incentive to dispose of garbage illegally within the UGAs. Residents in these areas would be required to pay for curbside collection of garbage and recyclables already, they would also be less likely to save up garbage and bring it to the WARC or the drop-box facilities in order to avoid collection fees. Reduced traffic at the transfer station could reduce the lines at the scale houses, as well as reduce the overall traffic experienced on weekends. To have an effective, comprehensive program, coordination and support from incorporated cities would be necessary, so that mandatory service is required within both the incorporated city boundary and the urban growth boundary.

*Pro:* Would ensure that all residences and businesses within the UGA subscribe to curbside collection service.

Could reduce the cost of collection service since the hauler would be guaranteed a minimum number of customers.

Could reduce the occurrence of illegal dumping, since all residents would be paying for collection service anyway.

Could reduce traffic at the WARC.

May receive some public support, since it would help to keep communities clean.

*Con:* Mandatory service may be unpopular with some segments of the general public.

### **W4. Mandatory collection County-wide**

Collection in the County could be mandatory to ensure proper disposal of garbage. With this policy in place there would be no incentive to dispose of garbage illegally in the County. Since residents and businesses in these areas would be required to pay for curbside collection of garbage and recyclables already, they would also be less likely to save up garbage and bring it to the WARC or

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the drop-box facilities in order to avoid collection fees. To have an effective, comprehensive program, coordination and support from incorporated cities would be necessary, so that mandatory service is required in all areas of the County.

*Pro:* Would ensure that all residences and businesses in the County subscribe to curbside collection service.

Could reduce the cost of collection service, since the hauler would be guaranteed a minimum number of customers.

Could reduce the occurrence of illegal dumping, since all residents would be paying for collection service anyway.

Could reduce traffic at the WARC.

May receive some public support, since it would help to keep communities clean.

*Con:* Mandatory service may be unpopular with some segments of the general public, and could be extremely unpopular in rural parts of the County where collection costs could be higher because of lower densities.

### **W5. Survey WARC and drop-box users for zip code**

Given the close proximity of the WARC to Pierce County and the disposal cost differential, it can be inferred that a portion of the users of the facility come from Pierce County. Since the volume of material that is handled at the facility has prematurely grown to be near the total design capacity of the transfer station, it would be good for WWM to understand what percentage of this waste is coming from out-of-County users. It is important that users of the facility provide their area of residence so that WWM can understand the source of their materials, and evaluate whether or not restrictions should be established. One easy way of getting this information is to ask the users for their zip codes. In order to collect good data it is important that users believe that their answers are not going to impact the rate that they are going to be charged, so it is recommended that the customers be asked for their zip codes after making their payments at the WARC or drop-box facilities. This would also have the benefit of allowing the WWM to better understand the use of their facilities by County residents.

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*Pro:* Provides WWM with data for the siting of County facilities

Data could be used to understand the impact of moving the transfer station (out-of-County users are unlikely to continue using a transfer station that is farther south in the County).

Could be used to understand the origin of self-hauler waste within the County and potentially to address facility needs.

Data could be used to segregate the amount of waste generated in-County to evaluate the effectiveness of reduction and recycling programs.

Data could be used to justify charging a tiered rate system for out-of-County users, in-County users, and collection vehicles.

*Con:* WWM performed a customer survey before and found that less than 5 percent of traffic was from out-of-County, so another survey may have little impact.

*Discussion:* Under the current system, WWM has a limited understanding of where waste and traffic originate. A major part of the problem at the existing WARC facility is due to traffic congestion, the WWM could use the data to evaluate the impact of out-of-County users and determine if their use is contributing to the need for a new facility. The disposal rates at the WARC are about \$30 to \$40 per ton less than at the facilities in Pierce County. In addition, there is a large development in Pierce County at DuPont that is much closer to the WARC than to any of the Pierce County transfer stations. So there is a strong financial and locational motivation to using the WARC.

### **W6. Expand customer education at waste facilities**

WWM can develop additional educational materials (signs and brochures) to display at the WARC and drop-box facilities to provide information about waste reduction, recycling, and composting. Materials can also be provided giving locations and contact information for various materials in and/or near the County. Signs can be posted in vehicle lines to maximize visibility.

*Pro:* Relatively inexpensive way to provide public materials.

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County already has information available at the WARC scale house.

Signs may catch the attention of drivers who might not look at brochures at the scale house window.

### **5.4.2 Facilities**

The following discussion regarding MSW facilities focuses on the feasibility of such a facility within Thurston County, and does not address economic impacts to the system. A discussion of system costs associated with the MSW facilities alternatives is contained in Appendix B.

#### **W7. Expand existing building to increase processing capacity**

The footprint of the existing transfer-station building can be increased to enhance the overall processing capacity of the facility to include more floor storage, more tipping lanes, and an additional compactor. More tipping lanes would increase the capacity of the transfer station to receive waste by allowing more vehicles to dump their loads simultaneously. Additional floor storage of waste materials would allow the contractor to receive materials at a rate that is higher than the capacity of the compactor(s). Stored materials would be processed during lulls in incoming waste during the day and after closing of the front gates. Additional floor storage would also provide additional emergency capacity in the event that waste could not be shipped from the WARC for several days (i.e., rail shutdown, unavailable transfer trailers, or other events). An expanded transfer station could also include a second waste compactor. This would allow the facility to increase the hourly output of material destined for Roosevelt Landfill.

*Pro:* Construction cost for modification of the existing transfer station may be less than constructing a new transfer station.

The existing facility was designed for expansion and included several additional features to allow for reduced expansion costs.

*Con:* Would not provide any savings in transportation of waste out of County, since the facility is located at the far

## ***Future Alternatives***

northeast end of the County, requiring most of the waste to travel north before being transported south.

Additional design and construction costs would be required for the addition of a second compactor.

Does not alleviate traffic issues at the WARC.

### **W8. New commercial or residential (self-haul) tip building at the WARC**

Construction of a new tip building and compactor at the WARC would increase the overall transfer capacity available within the county. The new building could be a flat floor style tip building to improve public safety.

The MSW overall processing capacity at the WARC can be increased by constructing a second transfer building. The second building would allow the WWM and contractor to further separate the commercial and residential traffic flow through the facility, allowing for faster transactions. The new building would also increase the total floor storage and add more tipping lanes, and could add another compactor at the WARC. More tipping lanes would increase the capacity of the transfer station to receive waste by allowing more vehicles to dump their loads simultaneously. Additional floor storage of waste materials would allow the contractor to receive materials at a rate that is higher than the capacity of the compactor(s). Stored materials would be processed during lulls in incoming waste during the day and after closing of the front gates. Additional floor storage would also provide additional emergency capacity in the event that waste could not be shipped from the WARC for several days (i.e., rail shutdown, unavailable transfer trailers, or other event). A second compactor at the WARC would allow the facility to increase the hourly output of material destined for Roosevelt Landfill.

*Pro:* A new building at the WARC could be designed to address residential users to increase safety and access to recycling.

The new building could also be designed for commercial traffic to reduce dump time and maximize the volume throughput to the compactors.

The facility design would include an improved layout of the WARC to minimize the amount of crossing traffic and separate residential and commercial traffic.

## ***Future Alternatives***

Does not require the purchase of new land because of the upcoming availability of the Lakeside property (adjacent to the WARC), which is County-owned.

Should cost less than constructing a new transfer station and recycling facility at another site.

*Con:* Requires a much larger capital investment than just a transfer-station building expansion.

Would not provide any savings in transportation of waste out of County, since the facility is located at the far northeast end of the County, requiring most of the waste to travel north before being transported south.

May still require modification of the existing transfer-station building.

### **W9. Expansion of Rochester to full transfer station**

The Rochester drop-box facility could be expanded into a full transfer station and would be able to serve a portion of the County waste stream. The conversion could include a new transfer building equipped with a processing floor and loading chute. The building could also include a waste compactor and sorting line. A new transfer-station facility should also include a recycling dropoff area, yardwaste dropoff area, and MRW dropoff area. The facility is located in the south part of the County and is approximately ten minutes from I-5.

Construction of a new transfer station at Rochester would reduce the cost of the facility since the WWM already owns the land.

*Pro:* The existing facility has enough property to allow expansion to a full transfer station.

The site already has a solid waste facility, so permitting should be less complicated.

Would eliminate hauling of south County waste to the WARC.

Would shorten the distance that south County waste is hauled to the intermodal yard.

## ***Future Alternatives***

Would be designed to provide enough additional capacity to manage County waste for 20 to 30 years between the two facilities.

*Con:* There are existing houses adjacent to the property; however, the site is large enough to provide adequate buffer between homes and building.

Additional capital and operating expense would be incurred as a result of a second transfer station.

### **W10. New transfer station in south County**

A new transfer station that is near I-5 in the south part of the county would increase the system capacity and would reduce overall transportation costs.

A second transfer station could be constructed in the southern part of the County, with convenient access to I-5. The ideal location would be able to serve southern parts of the County so that commercial and self-haul traffic would not have to cross the Olympia traffic corridor. The facility would be in addition to the WARC transfer station. The facility would include a new transfer building equipped with a processing floor and loading chute. The building should also include a waste compactor and may contain a sorting line. A new transfer-station facility should also include recycling facilities, yardwaste dropoff area, and MRW dropoff area. The facility could also be co-located with a rail yard (intermodal facility) for loading of full waste-transfer containers for transport to Roosevelt Landfill. This would reduce the distance that is driven in transporting waste-transfer containers to the rail loading point.

*Pro:* Would eliminate hauling of south County waste to the WARC.

Would shorten the distance that waste is hauled to the intermodal yard.

Would be designed to provide enough additional capacity to manage County waste for 20 to 30 years between the two facilities.

Could be constructed on railroad mainline along with new railhead.

A site could be selected that is away from residential areas and is not near urban growth boundaries.



## ***Future Alternatives***

*Con:* Significant capital outlay for site purchase and development as a solid waste facility.

Additional capital and operating expense would be incurred as a result of a second transfer station.

### **W11. Use the Centralia Transfer Station to provide additional waste-transfer capacity**

WWM could potentially negotiate an agreement with Lewis County to allow the use of the Lewis County Transfer Station in Centralia. At a minimum, this could include direct hauling from the Rochester and Rainier drop-box facilities as well as residential curbside collection vehicles serving the south part of Thurston County. Self-haulers could still be directed to the drop-box facilities or the WARC to minimize the traffic impacts to the Lewis County transfer station, or, if the facility can accommodate additional users, an agreement could be made to accommodate the self-hauler traffic as well. This type of agreement would reduce the cost of transporting Thurston County waste by eliminating the double hauling of waste from the south county drop boxes and residential collection, which is currently hauled north on I-5 to the WARC, where it is compacted and then hauled south on I-5 to Centralia. As part of the negotiations, WWM should include monthly reporting of Thurston County waste brought to the Lewis County transfer station, so that monitoring of waste flows and generation can continue.

*Pro:* There is no capital outlay required other than effort required to develop interlocal agreement for use of Lewis County transfer facilities.

Would eliminate hauling of south County waste to the WARC.

Would shorten the distance that waste is hauled to the intermodal yard.

Would slightly increase capacity of the WARC by diverting drop-box materials and/or south County collection material to Lewis County.

*Con:* WWM may be required to pay a higher disposal rate for Lewis County (\$87/ton currently) instead of the Thurston County disposal rate.

## ***Future Alternatives***

Waste sent to Lewis County might not generate revenue to support WWM programs.

The Lewis County transfer station may not have the capacity to handle all of the south Thurston County waste.

The potential for congestion through Centralia on the way to the transfer station may be an issue.

### **W12. Railhead for intermodal yard**

WWM can construct a new railhead or utilize available rail facilities in or near the County. This facility would allow the loading of full waste containers onto rail cars for delivery to Roosevelt Landfill, and would be the unloading point for empty containers returning to WWM's transfer facilities. The current railhead used by the WWM is located in an urban portion of Centralia in Lewis County, and is approximately a two-hour round trip from the WARC. A new railhead could shorten the distance that the County waste travels by truck. If a new or existing railhead location is desired, WWM should consider locating a new transfer station nearby, enabling it to greatly reduce waste handling and the distance waste is required to be trucked. In establishing an intermodal site, it is important that the spur of the selected site is regularly serviced. In addition, encouraging use of the facility by other counties can help reduce operating costs through economies of scale.

*Pro:* Would shorten the distance that waste is hauled to the intermodal yard from the WARC and other potential WWM transfer stations.

Could be designed to provide enough additional capacity to manage containers originating in other counties that use LeMay's Centralia intermodal yard.

Could be constructed on the railroad mainline, with access via County road (improved to highway) from I-5.

A site could be selected that is away from residential areas and is not near urban growth boundaries.

*Con:* Requires significant capital outlay to develop the site and improve access, though this could be mitigated through

## ***Future Alternatives***

partnership with LeMay and with other counties wishing to use the facility.

### **W13. Railhead for intermodal yard and transfer station**

Kitsap County recently opened a combined transfer station and intermodal yard for management of their waste for long haul disposal.

W10 and W12 can be combined to provide a single new waste facility with a transfer station and intermodal yard for rail cars. It would be necessary to locate the new facility on or near the main line that parallels I-5 through most of the County. The facility would include all of the recycling elements described in W10.

*Pro:* Locating the transfer station at the intermodal will eliminate most truck transportation required for waste coming from the transfer station. Compacted- and loose-waste containers can be directly loaded onto rail cars at the facility.

South County location will reduce some of the collection vehicle traffic across the capitol corridor on I-5.

Co-locating the facilities will reduce site-development costs.

*Con:* There is significant capital investment for constructing both facilities at the same time.

### **W14. Energy-recovery facility**

Combustion with energy recovery—Advanced thermal recycling is an advancement of technology that utilizes complete combustion of organic carbon-based materials *in an oxygen-rich environment*, typically at temperatures of 1,300°F to 2,500°F, producing an exhaust gas composed primarily of carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O), with inorganic materials converted to bottom ash and fly ash. The hot exhaust gases flow through a boiler, where steam is produced for driving a steam turbine-generator, thereby producing electricity. The bottom ash and fly ash are segregated, allowing for recovery/recycling of metals from the bottom ash, or landfill or reuse of the bottom ash as a road base or other construction material. The advanced recycling and emission-control systems with recovery/recycling are very effective in reducing emissions and recovering as much energy and material as possible.

Gasification—Gasification is used to convert carbon-based materials into hydrogen gas. Gasification of waste is made up of three processes. The first consists of pyrolysis, where volatile

## *Future Alternatives*

substances are released while the waste material is heated up to produce a char. Combustion follows, as the volatile products react with oxygen and char to provide heat for the pyrolysis process. Gasification follows these two processes as the char reacts with CO<sub>2</sub> to produce carbon monoxide and hydrogen. The resulting gas is then used to produce electricity. The entire process occurs at about 2,700°C so that furans, dioxins, and pathogens are destroyed in the high temperature process. Carbon monoxide is then converted back to CO<sub>2</sub> through a catalytic reaction.

Plasma—Plasma arc gasification uses an electrical arc to break down waste into gas and inert slag. The arc produces an environment of high electrical energy and high temperature with the goal of using the synthetic gas that is produced to generate electricity, for a net positive generation. The process is still in an experimentation phase, with the first full-scale facility being built in Florida through private funds of the company marketing the process.

Relatively high-voltage, high-amperage electricity is passed between two electrodes, spaced apart, creating an electrical arc. Inert gas (air or inert gases under pressure) is passed through the arc into a sealed container of waste material. Temperatures as high as 13,000°C (25,000°F) are reached in the arc. The temperature one meter from the arc can reach as high as ~4000°C (~8,000°F). At these high temperatures, most types of waste are broken into basic elemental components in a gaseous form, and complex molecules are atomized.

*Pro:* Modern emission controls are employed to keep emissions within regulatory levels.

Volume of end product (slag) is much less than incoming waste, requiring less landfill space. In some cases, slag can be used in construction as aggregate.

Would shorten the distance that waste is hauled for management, keeping material in Thurston County.

Would be designed to provide enough processing capacity to manage County waste for 30 to 50 years.

New energy recovery technologies are being developed, so future advances could be applicable to Thurston County.

## ***Future Alternatives***

*Con:* Significant capital is needed, though private construction and operation are possible.

Waste-to-energy projects are highly unpopular in the Northwest, and public opposition has stopped several projects (most recently in Tacoma).

Most available processes are still expensive to operate, ranging between \$40 and \$150/ton, depending on facility throughput and technology used.

Combustion processes are well proven, but gasification and plasma arc facilities are very new and are untested, so price and success may be variable.

### **W15. Separate collection and self-hauler entrances**

WWM could develop a second entrance for self-haulers. Collection-vehicle transactions could be entirely automated using the current card system so that an entrance and exit scale could serve all of this traffic. The self-haul area could be treated in a fashion similar to that of the drop-box facilities and be charged for on a volume basis to minimize the infrastructure needs, or it could continue to be operated as a weight-based transaction (requiring a scale house).

*Pro:* Would improve access and dump time for collection vehicles.

Would minimize or eliminate conflicts between commercial and self-haul traffic, and would improve safety.

Commercial scales could be unmanned, with automatic gates activated by the swipe card.

Collection-vehicle traffic is a very small part of WARC traffic, so the number of commercial scales could be limited to one in each direction.

Would allow WWM to start weighing all outgoing loads from the transfer station.

## ***Future Alternatives***

*Con:* There is limited space for an additional entrance at the existing facility, so development must wait for Lakeside property to return to WWM control.

Must construct scale houses at new entrance.

### **5.4.3 Operation**

#### **W16. Increase transaction fee to cover facility cost**

The minimum transaction fee charged at the scale house does not cover the cost of disposal and the actual cost of the transaction.

One way to improve congestion at the WARC with little demand on infrastructure is to address the fees that users of the facility are required to pay. A higher transaction fee is likely to result in reducing the number of users of the facility. WWM currently charges a \$10.88 minimum transaction charge at the scale house, which is meant to cover part of the true system cost placed by each user. WWM should reevaluate the minimum transaction charge and consider increasing it to reflect a fair user fee, which takes into consideration the increased demand on services placed by users with very little waste. This use fee can also be separated so that it is applied to all users of the facility as a base charge, to which the disposal charge based on weight is added. WWM would also need to charge the same fee at the drop-box facilities; otherwise, users may shift their habits to use the drop-box facilities more, which would increase the amount of waste handled by WWM. Charging the transaction fee at the drop-box facilities would help to encourage more self-haulers with small volumes to subscribe to curbside collection service.

*Pro:* Establishes a facility usage fee that is equal for all users, and does not bias usage fees to large-volume users if it is incorporated into the per-ton rate.

*Con:* Would be unpopular with self-haulers.

#### **W17. Increase minimum weight for transaction basis**

WWM can also discourage small loads at the WARC by increasing the minimum weight for the transaction basis. Currently the \$10.88 charge is based on a load of up to 250 lbs. A higher minimum weight basis of 300 or 400 lbs would also have the effect of increasing the minimum charge that a user could expect to pay at the transfer station.

## ***Future Alternatives***

*Pro:* Would discourage self-haulers with very small loads from using the WARC, reducing traffic.

Would encourage self-haulers to bring only full loads to the WARC.

Would reduce the amount of waste handling at the WARC, since self-hauled material generally is handled at least twice (from the z-wall to the transfer station, and then into the compactor and trailer).

*Con:* May be unpopular with smaller-volume users.

### **W18. Establish differential per-ton rates**

WWM can charge a higher per-ton rate for self-haulers and a lower rate for commercial haulers. This would provide more of an economic incentive for residents and businesses to subscribe to curbside collection services. It would allow the subscription fee for collection service to remain lower, and make justification of self-hauling more difficult. The higher self-haul rate might also include the transaction fee to cover the per-use cost. The differential rate setting must be set carefully, since an unintended consequence could be an operating-budget imbalance.

*Pro:* Would discourage self-haulers with very small loads from using the WARC, reducing traffic.

Would charge facility users for their impact to the system in hauling to the WARC.

A lower commercial rate could be applied to other contractors and businesses that set up charge accounts.

*Con:* Would be unpopular with self-haulers.

The differential rate must be carefully reviewed before implementing to ensure that there are no gaps in solid waste system funding as a result of the lower commercial rate.

### **W19. Accept credit and debit payment**

Allowing the use of credit/debit cards will speed up the overall transaction, since it does not require that additional information be recorded manually, and only the signature requires verification.

## ***Future Alternatives***

Transaction fees charged by the credit-card companies can be included in the transaction fee so that there is no financial impact to WWM operations. This could be considered in addition to accepting check payment. WWM could expect to see a large portion of self-haulers pay with debit/credit cards and could still service customers who wish to use checks.

*Pro:* Debit and credit card payment is relatively fast.

Incidences of insufficient funds would be reduced through the debit-card and credit-card clearance process (depending on service selected).

Does not eliminate check payment.

*Con:* It would be necessary to incorporate credit-card transaction fees into the rate-setting process.

### **W20. Round transaction charges**

Another way to speed up the transaction time is to eliminate the use of change and round up all transactions to the nearest dollar. This would stop users from hunting for correct change in their pockets and purses, and enable the scale attendants to stop requesting correct change when they are concerned about weekend banking hours. By rounding to the nearest dollar, the financial impact should be minimal, since the amount of rounding up should be about the same as rounding down. In addition, if impacts were observed, the WWM could include an offsetting amount in the transaction fee.

*Pro:* Would simplify cash payment.

Would eliminate the need to maintain a large supply of coins to make change for cash transactions.

*Con:* Could be unpopular with self-haul customers.

### **W21. Eliminate can and bag rate**

One more way to improve congestion at the WARC is to eliminate the individual can and bag rates. These rates typically slow the overall transaction process on the inbound scales, since the attendant is usually required to explain the rate and how it applies



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to the uses, who must then decide if it is in their best interest to use the can rate or the scale rate. The payment basis (weight or volume) should be consistent for all areas of a facility to eliminate the amount of time users require to make their decision. In addition, the can and bag rate is not representative of the impact that the user actually has on the WARC.

*Pro:* Would eliminate most of the very small transactions at the WARC.

Would reduce traffic at the WARC.

*Con:* Could be unpopular with self-haul customers.

## **5.5 Moderate-Risk Waste**

### **5.5.1 Programs**

#### **H1. HazoHouse advertising**

WWM has successfully advertised Waste Mobile events, which have a very high attendance. Increased advertising of the daily service available at the HazoHouse may increase the number of residents who use the service.

Advertising of the services offered at the HazoHouse are limited, with the focus of the MRW program on advertising of the collection events. The use of the HazoHouse facility could be improved through increased advertising about this service and what common materials are accepted. Short statements could be included with the advertisements for the collection events, as well as in the quarterly solid waste newsletter. WWM can also coordinate with the garbage hauler to include an advertisement with customer bills for the garbage service.

*Pro:* Would increase public awareness of the HazoHouse facility and services offered there.

Would help to increase recovery of MRW throughout the County if more people understood that it is a free service.

*Con:* Additional advertising would increase the overall cost of the MRW program.

#### **H2. Free small-quantity generator (SQG) dropoff**

SQGs are currently required to pay for the service provided by the HazoHouse program. Businesses are charged the approximate costs

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Yakima County offers free SQG dropoff which has resulted in that county collecting as much SQG waste as the rest of the counties in Washington combined.

for disposal of their material by WWM, as long as they qualify as an SQG. The residential collection services are offered for free and are subsidized by the garbage-disposal rate. The SQG service could be offered for free to businesses in a manner similar to that of the residential program to encourage higher recovery of hazardous materials. A similar program in Yakima County has led that county to have the highest collection rates of MRW in the state, as they account for 49 percent of all SQG waste collected in the state of Washington.

*Pro:* Would increase amount of MRW recovered and properly disposed of.

*Con:* Would increase the overall cost of the MRW program to pay for disposal of all SQG material.

### **5.5.2 Facilities**

#### **H3. New MRW facility**

A new HazoHouse facility is currently in the planning process for the WWM.

WWM has already begun the design process for a new MRW facility for the County solid waste system. Its location has not yet been selected. The facility should be designed to meet all of the current minimum standards for MRW facilities, and would serve as the main handling and accumulation point for all MRW collected in the County. The current HazoHouse facility is located in a capped portion of the Hawks Prairie Landfill and would need to continue to operate while a new facility was sited and built. The facility can be constructed near the existing HazoHouse on a capped portion of the landfill. This location would provide the additional environmental protection offered by the landfill's membrane cap. However, building in this location would greatly increase the overall project cost because of increased foundation requirements due to construction over fill and a landfill-gas-control system under the building. The facility could also be constructed outside the landfill but within the WARC complex. This would lessen the amount of reinforcement necessary for the building's foundation as well as eliminate the need for landfill-gas controls. Lastly, the new HazoHouse facility could be constructed at another location in the County that is readily accessible to the major population centers. However, it would be necessary that the location be on land owned by the County or by one of the cities, and should be part of a solid waste facility to maximize its visibility to the public.

## ***Future Alternatives***

*Pro:* Would satisfy regulator requests for facility upgrades by incorporating design standards and eliminating current mitigation practices.

Would allow WWM to provide a properly sized facility for handling County MRW over a 20- to 30-year period.

A new HazoHouse could be constructed to facilitate a potential reconfiguration of the WARC facility.

*Con:* Significant capital investment is required.

### **H4. New MRW dropoff facility**

MRW dropoff facilities, which do not store wastes overnight, may be a way to increase availability of the MRW program to the remote portions of the county that are served by the drop box facilities. The facility could be open on a weekly or monthly basis.

WWM can consider the construction of one or more MRW dropoff facilities, or "Limited MRW facilities" as defined by Ecology. These facilities are designed to act as receiving locations for MRW brought by County residents, but they are not meant to store the collected materials, and require these materials to be transported to the main MRW processing facility on a daily basis. Different construction, containment, and ventilation requirements may apply, depending on the types of items that will be accepted at the facility. However, Ecology has expressed the ability to be flexible in granting variances for a "creative" approach to offering better access to MRW collection. Limiting the type or volume of materials may enable Ecology to place less restrictive requirements on the facility construction. WWM would need to establish a policy that material collected would not be stored at the site, but would be transferred back to the HazoHouse facility for bulking and storage. To help reduce the occurrence of improper materials dropoff during nonoperational times, the facility could be operated as a mobile collection unit. At the end of the day, the unit would be transported back to the HazoHouse facility for unloading and consolidation of materials. Since there would not be a permanent building at each dropoff point, it is less likely that residents would be able to leave materials unnoticed.

Dropoff locations could be constructed at any of the existing WWM drop-box facilities, and/or at the Olympia yardwaste dropoff facility.

*Pro:* Would expand the ability of WWM to provide MRW services to rural residents.

## ***Future Alternatives***

Would be staffed on a regular schedule, so that residents would not have to wait for the next collection event or drive up to the WARC.

Could be operated by WWM staff so that contractor services are not needed.

*Con:* Would increase the cost of administering the MRW program.

Would increase the amount of training needed by WWM staff in order to ensure that proper transportation regulations are observed.

Residents may still be required to take some materials to the WARC, depending on what Ecology permits the facility to accept.

### **H5. Increase frequency of collection events**

Another alternative would be to establish several sites (at solid waste facilities) where collection events are offered on a more regular basis in several locations, bimonthly or quarterly. As long as the event is carried out on a paved surface, requirements are limited to preventing the release of hazardous materials to groundwater and the environment. If this type of program were offered, WWM could staff and run the events themselves or develop a longer-term contract for the service. Materials collected could be transported to the HazoHouse facility or to the contractor's facility.

*Pro:* A regular schedule of collection events would allow residents to better plan for the dropoff of materials, and allow them wait for when the next event is being offered.

*Con:* Would dramatically increase the cost of the MRW program, more so if the events were conducted by a contractor.

## ***Section 6***

## ***Next Steps***

- 6.1 Planning Tool
- 6.2 Timeline
- 6.3 Potential Program Impacts
- 6.4 Solid Waste Management Plan

The alternatives discussed in Section 5 are presented as potential programs, policies, or facilities that WWM and SWAC can consider during the development of the SWMP. The section includes several options for transfer station improvements or new facilities, which can be implemented to provide additional capacity for Thurston County's solid waste system. Decision-making for the new facility should take into consideration the need and cost associated with the new facility. This section discusses how to determine the timing for a new facility through the presentation of a planning tool and a solid waste services contract timeline. Also included is a brief discussion of the development of a new SWMP and the benefit this document will provide that effort.

### **6.1 Planning Tool**

The planning tool is a flexible schedule for timing the need for development of additional transfer station capacity, based on the actual waste generation trend observed within the county.

In considering the transfer station alternatives, it is important to understand the timeframe in which a new facility might be necessary. The timing of a facility is dependant on the capacity of the current transfer station for handling MSW and expected future MSW generation rates. Since there are many programs existing and planned that aim to reduce waste generation, there is uncertainty in predicting what the actual waste generation will be in 5, 10, or 20 years. To address the uncertainty, a planning tool has been developed to assist WWM to monitor waste generation trends so that planning for and implementation of a new transfer station can remain flexible.

The planning tool for the transfer station identifies the nominal or design capacity of the original transfer station, which was specified in the Transfer Station Development Agreement to be 190,000 tons per year. This amount has already been exceeded. However, during the development of this report, it has been estimated that the facility can handle up to about 290,000 tons per year (up to 800 tons per day) by extending the operating hours of the transfer station and

## Next Steps

The County must rely on longer operating hours at the transfer station to satisfy the waste processing capacity needs. This will reduce the ability of the facility to absorb service disruptions for rail haul or disposal.

Hawks Prairie will provide sufficient waste handling for up to 250,000 tons. Based on the solid waste generation projections this will be sufficient to last until 2012 at a minimum, or as long as 2018. Planning for this facility should begin 3 to 4 years before it is needed.

stockpiling waste during the day. This will reduce the amount of floor storage available in the event of a service disruption, so it is not desirable to rely on these measures for the long term. The transfer station building currently provides up to 3 days of floor storage for waste to accumulate. By relying on this space for additional daily processing capacity, the floor storage may be reduced to 2 days or even 1.5 days. If a minimum storage capacity is established to be 2 days, which would mean that the facility can continue to operate as the sole facility in the county up to a point where the WARC is handling 250,000 tons per year.

Figure 6-1 shows the planning tool, which identifies the design capacity (190,000 tpy) and extended hours capacity (250,000 tpy), corresponding to the allowable 2 day minimum floor storage. The figure also shows the predicted waste generation scenarios developed in Section 3. By combining this information it can be inferred that a second transfer station should be completed between 2012 and 2018 depending on the waste growth assumptions. By monitoring the county-wide waste generation, WWM can confirm the trend that actually occurs and then allow for a three to four year planning and construction process.

The tool allows the WWM to be flexible and to adjust for drastic changes in waste habits by residents, such that if overall disposal is reduced significantly, the new facility may be delayed even longer. In addition to the planning tool, a graph has been prepared (Figure 6-2) showing the individual waste generation trends that correspond to each of the scenarios in Figure 6-1.

Figures 6-1 and 6-2 illustrate the fact that even if per capita waste generation stays flat, the county-wide generation will continue to increase due to the increase in population. The figures also show that in order for the county to maintain its waste disposal at 180,000 tons per year, residents would need to reduce their waste generation by about 2 to 3 percent per year just to offset the impacts of county population growth.

## 6.2 Timeline

Many components that shape the system are dependant on the decisions that will be made in the SWMP and on pending solid waste service contracts. A timeline has been prepared to show the important dates in the current solid waste system. These events

## *Next Steps*

Several WWM solid waste contracts will expire in the next few years. Renewal of the contracts should include a review of appropriate language that is consistent with the solid waste program objectives adopted in the SWMP Update.

include the expiration of the current composting, long haul, and transfer station operation contracts, in addition the preparation of the SWMP. The renewal of each of these contracts will have impacts or will be impacted by some of the alternatives that are identified in this document. Impacts may be seen in areas relating to material reuse, collection services, transfer station/intermodal yard/moderate risk waste facility construction, and C/D processing.

The time line presented in Figure 6-3 combines the contract dates with some of the alternatives that influence how the contract may be implemented.

### **6.3 Potential Program Impacts**

Through tracking annual waste disposal and recycling efforts, WWM can gauge the impact of reduction efforts on waste generation rates. In order to impact the waste generation rates, WWM will need to implement selected policies and programs discussed in Section 5. In determining the waste streams on which to focus the most effort, it may be helpful to assess the amounts of different materials currently generated, programs in place to manage the waste stream, and existing program success.

Using the information presented in the 2004 Waste Characterization along with the 2005 total waste disposal, the amount of waste falling into each category has been estimated in Table 6-1. By reviewing the proportion of categories within the County waste stream going to disposal, it is evident that a large portion of waste can be classified as either wood waste and C/D (22%), organic waste (22%), or plastic (15%). Each of these categories are recyclable, and could be successful targets of additional waste diversion efforts by WWM. Plastics, paper, metal, and glass are part of a large recycling program that is already available to county residents and will be discussed as a single material group, "commingled recyclables". This term is not meant to limit the reference to only the materials that are collected from the curbside, but will apply to all plastics, papers, metals, and glass that are collected in the county.

Table 6-2 compares total generation for each of the three categories with the amount of material currently captured. The table demonstrates that there is a large potential to recycle more materials from these three categories within the County. However,

## Next Steps

Commingled recyclables are diverted at a rate of 58%. Wood & C/D is diverted at 51%, and organics are diverted at 33%. However these three categories still make up 82% of the total material disposed by the county.

Even though commingled recyclables are diverted at a rate of 58%, a significant portion of the category is made up of plastic, which is recycled at a rate of just 11%.

Successful targeting of food waste, C/D and wood, and plastics present a significant opportunity for additional diversion efforts, and could result in a reduction of total county landfill disposal of 15 to 28%, if successful.

a recycling program is already in place for curbside collection of commingled recyclables throughout the county, and was just recently improved (as of January 2007). The modified and expanded program is seeing significant improvements in participation and recovery. The opportunity to recovery additional commingled recyclables as a result of the programs discussed in this report is considered to be low. Conversely, there are few diversion opportunities for wood and C/D, which is a high percentage of the materials going to disposal. Programs and policies targeting wood recycling and C/D reuse and recycling have a good potential (conservatively up to 50% diversion over time) to decrease the amount of this waste category going to disposal.

Organics also present a high potential for additional recovery. Organics include yard waste, wood waste, and food wastes that are suitable for composting. This material category is currently only provided a diversion opportunity through voluntary home composting, self-haul to the WARC, and curbside yard waste service. Based on subscription information from Pacific Disposal, yard waste service is requested by only 1/3 of their accounts. In addition, there are no programs serving food wastes. By developing a comprehensive food waste program, and increasing the number of yard waste subscribers, there could be a very large opportunity to increase diversion of organics.

It should also be recognized that for all of these materials, it is unlikely that they could be completely eliminated from disposal, since in some cases the recovered material can be too contaminated to recycle. Table 6-2 provides an illustration, based on 2005 data, of the potential impact on each waste category with a low and high estimate of diversion success. Depending on program success there is a potential of an additional 27,000 to 50,000 tons of recycling, or 15% to 28% of the material disposed in 2005.

By implementing programs and policies with the potential to remove large quantities of waste from the disposal stream, Thurston County can expect to slow the growth of per capita waste generation and eventually to begin to reduce it.

## 6.4 Solid Waste Management Plan

The last update of Thurston County's SWMP was completed in 2001. The next step of the solid waste system planning is the



## *Next Steps*

The SWMP update will use the list of alternatives presented in Section 5, in addition to the rest of the information in this report, to determine the needs of the County solid waste system for waste reduction and recycling efforts, as well as for facility needs.

preparation of a new SWMP (which is due every 5 years). This Solid Waste System Assessment was prepared as a first step in the process of preparing a new SWMP. The goal of this report is to prepare several elements that are required to be addressed in the SWMP, such as waste and recycling summaries, population projections, and waste projections. Another goal is to prepare a “shopping list” of policy, program, and facility options to be contemplated for inclusion in the SWMP.

The alternatives presented in Section 5 are options that require further consideration by the WWM and the SWAC. In several instances the alternatives are interdependent and a decision among alternatives is necessary. For other alternatives, it is necessary to consider in more detail the need and impact of the proposed activity along with funding and staffing requirements to determine if the alternative is desirable for Thurston County and the WWM.

## **LIMITATIONS**

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The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

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Washington. 2004.

## **TABLES**

**Table 2-1  
MSW Summary 1999-2005  
Thurston County, Washington**

|   | 1999           | 2000           | 2001           | 2002           | 2003           | 2004           | 2005           |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Total Incoming (Gate)</b>                        |                |                |                |                |                |                |                |
| MSW <sup>1</sup>                                    | 141,678        | 148,299        | 127,049        | 134,307        | 142,018        | 149,495        | 149,677        |
| C&D   | 3,877          | 15,788         | 25,248         | 29,189         | 33,098         | 29,827         | 37,291         |
| Yard Waste <sup>2</sup>                             | 6,916          | 9,552          | 10,600         | 10,010         | 10,695         | 12,579         | 15,175         |
| RR Ties   | 0              | 1              | 0              | 11             | 20             | 54             | 43             |
| Asbestos  | 35             | 13             | 32             | 31             | 13             | 35             | 35             |
| Public Works <sup>3</sup>                           | 1,041          | 582            | 191            | 198            | 272            | 191            | 168            |
| Recycling Center                                    | 0              | 0              | 0              | 0              | 1,593          | 1,506          | 1,504          |
| <b>Total</b>  | <b>153,547</b> | <b>174,235</b> | <b>163,120</b> | <b>173,747</b> | <b>187,709</b> | <b>193,687</b> | <b>203,893</b> |
| <b>Incoming Detail</b>                              |                |                |                |                |                |                |                |
| <b>MSW</b>  |                |                |                |                |                |                |                |
| Curbside MSW (Scaled)                               | 99,512         | 102,810        | 100,587        | 107,426        | 112,198        | 118,802        | 119,366        |
| Self Haul MSW (Scaled)                              | 37,520         | 41,032         | 25,039         | 22,110         | 24,675         | 25,175         | 25,660         |
| Drop Box MSW (Scaled)                               | 2,766          | 2,903          | 0              | 3,327          | 3,669          | 3,946          | 3,908          |
| Bag MSW   | 1,880          | 1,554          | 1,423          | 1,444          | 1,477          | 1,572          | 744            |
| Yard Waste  |                |                |                |                |                |                |                |
| Scaled Yard Waste                                   | 6,668          | 9,361          | 10,415         | 9,818          | 10,493         | 12,377         | 15,007         |
| Bag Yard Waste                                      | 107            | 76             | 76             | 91             | 107            | 113            | 90             |
| Christmas Trees                                     | 141            | 114            | 109            | 101            | 95             | 89             | 78             |
| Public Works  |                |                |                |                |                |                |                |
| Vactor Waste  | 564            | 324            | 191            | 173            | 271            | 191            | 154            |
| Grit Waste  | 478            | 257            | 0              | 25             | 1              | 0              | 14             |
| <b>Transfer Station Pickline<sup>4</sup></b>        |                |                |                |                |                |                |                |
| Pickline Recyclables                                | 0              | 0              | 0              | 0              | 2,627          | 3,176          | 2,747          |
| Pickline Hog Fuel                                   | 0              | 0              | 0              | 0              | 4,449          | 6,238          | 5,611          |
| <b>Total Outgoing (post sorting)</b>                |                |                |                |                |                |                |                |
| MSW <sup>5</sup>                                    | 146,596        | 164,670        | 152,488        | 163,706        | 168,332        | 170,152        | 178,821        |
| Asbestos  | 35             | 13             | 32             | 31             | 13             | 35             | 35             |
| Recyclables <sup>6</sup>                            | 0              | 0              | 0              | 0              | 4,220          | 4,682          | 4,251          |
| Composting  | 0              | 0              | 0              | 0              | 7,910          | 8,427          | 7,557          |
| Hog Fuel <sup>7</sup>                               | 6,916          | 9,552          | 10,600         | 10,010         | 7,233          | 10,390         | 13,229         |
| <b>Total</b>  | <b>153,547</b> | <b>174,235</b> | <b>163,120</b> | <b>173,747</b> | <b>187,709</b> | <b>193,687</b> | <b>203,893</b> |
| <b>Separate Collection</b>                          |                |                |                |                |                |                |                |
| GRT <sup>8</sup>                                    | 0              | 0              | 0              | 0              | 0              | 157            | 252            |
| MRW <sup>9</sup>                                    | 0              | 157            | 183            | 122            | 411            | 290            | 598            |
| <b>Total Transfer Station Handling<sup>10</sup></b> | <b>146,631</b> | <b>164,683</b> | <b>152,519</b> | <b>163,736</b> | <b>175,422</b> | <b>179,602</b> | <b>187,214</b> |
| <b>Total WARC Handling</b>                          | <b>153,547</b> | <b>174,392</b> | <b>163,303</b> | <b>173,869</b> | <b>188,120</b> | <b>194,133</b> | <b>204,744</b> |

**Table 2-1**  
**MSW Summary 1999-2005**  
**Thurston County, Washington**

**NOTES:**

- 1 MSW represents tonnage of material that is scaled and recorded as MSW as well as bagged MSW, which is converted to an estimated weight.
- 2 Yard waste represents tonnage of material that is scaled and recorded as MSW as well as bagged yard waste and Christmas trees.
- 3 Public Works materials represents material disposed of at the landfill by public works resulting from standard maintenance activities, such as street sweeping and storm system maintenance.
- 4 Transfer Station Pickline sorting tonnage is from the MSW incoming stream only.
- 5 Outgoing MSW is the addition of incoming MSW, C&D, RR Ties, and Public Works waste minus recovered materials from the pickline.
- 6 Outgoing Recyclables is the addition of incoming recycling center materials plus recyclables recovered from the pickline.
- 7 Outgoing hog fuel is the incoming yardwaste plus the pickline hot fuel material minus the outgoing composting material.
- 8 CRT (Cathode Ray Tubes) are collected separately at the transfer station and are not commingled with the MSW or recycling stream.
- 9 MRW (Moderate Risk Waste) is collected separately at the Hazohouse facility at the transfer station and is not commingled with the MSW or recycling stream.
- 10 Total Transfer Station Handling represents materials received at the WARC that are managed in the transfer station building (MSW, C/D, RR Ties, Asbestos, and Public Works materials)

**Table 2-2**  
**Recycling / Diversion Summary 1999–2005**  
**Thurston County, Washington**

|                                       | Year          |               |               |                |               |                |                |
|---------------------------------------|---------------|---------------|---------------|----------------|---------------|----------------|----------------|
|                                       | 1999          | 2000          | 2001          | 2002           | 2003          | 2004           | 2005           |
| <b>Recycled MSW Materials</b>         |               |               |               |                |               |                |                |
| <b>Paper</b>                          |               |               |               |                |               |                |                |
| Newspaper                             | 6,180         | 4,710         | 3,653         | 7,100          | 4,024         | 11,153         | 6,228          |
| Corrugated Paper                      | 37,545        | 27,252        | 11,642        | 24,390         | 11,900        | 20,069         | 20,810         |
| High Grade                            | 860           | 1,328         | 867           | 1,970          | 1,815         | 4,900          | 4,565          |
| Mixed Waste Paper                     | 9,173         | 15,941        | 13,966        | 13,645         | 7,770         | 16,310         | 33,516         |
| <b>Total Paper</b>                    | <b>53,758</b> | <b>49,231</b> | <b>30,128</b> | <b>47,105</b>  | <b>25,509</b> | <b>52,433</b>  | <b>65,119</b>  |
| <b>Metal</b>                          |               |               |               |                |               |                |                |
|                                       | 43,725        |               |               |                |               |                |                |
| Aluminum Cans                         | 378           | 551           | 426           | 649            | 323           | 607            | 379            |
| Tin Cans                              | 514           | 1,222         | 998           | 1,040          | 617           | 851            | 566            |
| Ferrous Metals                        | 345           | 1,832         | 3,900         | 8,290          | 7,659         | 13,812         | 16,301         |
| Nonferrous Metals                     | 3             | 286           | 353           | 485            | 525           | 3,431          | 447            |
| White Goods                           | 204           | 161           | 1,139         | 540            | 262           | 323            | 557            |
| <b>Total Metal</b>                    | <b>1,444</b>  | <b>4,052</b>  | <b>6,815</b>  | <b>11,003</b>  | <b>9,386</b>  | <b>19,024</b>  | <b>18,249</b>  |
| <b>Glass</b>                          |               |               |               |                |               |                |                |
| Container Glass                       | 2,818         | 7,726         | 4,058         | 4,413          | 7,746         | 3,540          | 5,862          |
| <b>Plastic</b>                        |               |               |               |                |               |                |                |
| PET Bottles                           | 156           | 280           | 251           | 222            | 138           | 324            | 600            |
| LDPE Plastics                         | --            | 14            | 116           | 247            | 205           | 420            | 1,761          |
| HDPE Plastics                         | 174           | 264           | 203           | 224            | 419           | 409            | 534            |
| Other Recyclable Plastics             | 29            | 134           | 293           | 7              | 5             | 489            | 253            |
| <b>Total Plastics</b>                 | <b>360</b>    | <b>692</b>    | <b>864</b>    | <b>700</b>     | <b>766</b>    | <b>1,643</b>   | <b>3,147</b>   |
| <b>Vehicle Related</b>                |               |               |               |                |               |                |                |
| Vehicle Batteries                     | 227           | 244           | 240           | 309            | 284           | 464            | 1,041          |
| Tires                                 | -             | 138           | 318           | 615            | 154           | 454            | 896            |
| Used Oil                              | 349           | 8             | 747           | 843            | 2,199         | 3,385          | 2,894          |
| <b>Total Vehicle Related</b>          | <b>576</b>    | <b>390</b>    | <b>1,306</b>  | <b>1,767</b>   | <b>2,637</b>  | <b>4,302</b>   | <b>4,832</b>   |
| <b>Organic Materials</b>              |               |               |               |                |               |                |                |
| Yard Waste                            | 9,936         | 16,673        | 7,062         | 28,321         | 17,319        | 14,991         | 12,955         |
| Food Waste                            | --            | 121           | 988           | 215            | 232           | 5,266          | 6,695          |
| Wood Waste                            | 191           | 3,697         | 25,962        | 13,888         | 7,245         | 1,055          | 70,323         |
| <b>Total Organic Materials</b>        | <b>10,127</b> | <b>20,491</b> | <b>34,012</b> | <b>42,424</b>  | <b>24,795</b> | <b>21,311</b>  | <b>89,973</b>  |
| <b>Other Recycled Materials</b>       |               |               |               |                |               |                |                |
| Textiles (rags, clothing, etc.)       | --            |               | --            | 96             | 299           | 1,215          | 22             |
| Gypsum                                | --            |               | 62            | 520            | 1,360         | 1,210          | 1,247          |
| Photographic Films                    | --            |               | 0             | 5              | 1             | 1              | 0              |
| Computers & Parts                     | -             | 15            | 8             | 15             | 99            | 337            | 386            |
| Fluorescent light bulbs               | 6             | -             | 3             | 7              | 19            | 17             | 20             |
| Porcelain toilets                     | 2             | -             | -             | -              | -             | -              | 3              |
| <b>Total Other Recycled Materials</b> | <b>8</b>      | <b>15</b>     | <b>72</b>     | <b>643</b>     | <b>1,778</b>  | <b>2,781</b>   | <b>1,678</b>   |
| <b>Total Recycled Materials</b>       | <b>69,091</b> | <b>82,597</b> | <b>77,255</b> | <b>108,056</b> | <b>72,618</b> | <b>105,033</b> | <b>188,860</b> |

**Table 2-2**  
**Recycling / Diversion Summary 1999–2005**  
**Thurston County, Washington**

|   | Year         |               |               |               |               |                |                |
|---|--------------|---------------|---------------|---------------|---------------|----------------|----------------|
|   | 1999         | 2000          | 2001          | 2002          | 2003          | 2004           | 2005           |
| <b>Diverted Materials</b>                   |              |               |               |               |               |                |                |
| Anti-freeze                                 | 110          | 100           | 180           | 258           | 234           | 275            | 311            |
| Asphalt/Concrete                            | --           | 13,000        | 32,412        | 30,742        | 58,241        | 60,546         | 72,000         |
| Composting Furnish                          | --           | --            | 750           | 1,344         | 360           | --             | -              |
| Construction & Demolition Debris            | 3,022        | 29,092        | 1,389         | 9,734         | 2,221         | 8,532          | 10,309         |
| Donated Food & Merchandise                  | --           | --            | --            | 11            | --            | 12             | 10             |
| Food Processing Wastes                      | --           | 29            | 1,426         | 851           | 840           | --             | 792            |
| Household Batteries                         | --           | --            | --            | 0             | 1             | 1              | 1              |
| Ash, Sand & Dust used in Asphalt Production | -            | -             | -             | -             | -             | 2,186          | 4,596          |
| Land clearing debris                        | --           | --            | 94            | 23,067        | 8,532         | 31,660         | 12,574         |
| Oil Filters                                 | -            | -             | 124           | 138           | 79            | 89             | 67             |
| Miscellaneous                               | --           | --            | --            | --            | --            | 0              | -              |
| Reuse - Construct/demol. Items              | --           | 346           | 200           | --            | --            | --             | -              |
| Reuse - Miscellaneous                       | --           | --            | 13            | --            | --            | --             | -              |
| Tires (Burned for Energy)                   | -            | -             | -             | 69            | -             | 608            | 37             |
| Topsoil                                     | --           | --            | --            | --            | --            | 177            | -              |
| Used Oil for Energy Recovery                | 511          | 1,229         | 737           | 1,366         | -             | -              | -              |
| Wood for Energy Recovery                    | -            | -             | -             | -             | 7,626         | 3,245          | 12,950         |
| <b>Total Diverted Materials</b>             | <b>3,643</b> | <b>43,796</b> | <b>37,324</b> | <b>67,580</b> | <b>78,133</b> | <b>107,331</b> | <b>113,645</b> |



**Table 2-3  
Solid Waste Generation Summary 1999-2005  
Thurston County, Washington**

|  | Tons    |         |         |         |         |         | Average Annual Increase (tons/yr) | Average Annual Growth (Percent) | Averaging Period |             |
|--|---------|---------|---------|---------|---------|---------|-----------------------------------|---------------------------------|------------------|-------------|
|  | 1999    | 2000    | 2001    | 2002    | 2003    | 2004    |                                   |                                 |                  | 2005        |
| <b>County Wide</b>   |         |         |         |         |         |         |                                   |                                 |                  |             |
| Total Recycling (Ecology) <sup>1</sup>   | 69,091  | 82,597  | 77,255  | 108,056 | 72,618  | 105,033 | 188,860                           | 7,188                           | 9%               | 1999 - 2004 |
| Total Diversion (Ecology) <sup>2</sup>   | 3,643   | 43,796  | 37,324  | 67,580  | 78,133  | 107,331 | 113,645                           | 13,970                          | 21%              | 2000 - 2005 |
| Total Disposal (County) <sup>3</sup>   | 146,596 | 164,670 | 152,488 | 163,706 | 168,332 | 170,152 | 178,821                           | 5,371                           | 3%               | 1999 - 2005 |
| MSW + Recycling + Diversion  | 219,330 | 291,062 | 267,067 | 339,341 | 319,084 | 382,516 | 481,326                           | 43,666                          | 14%              | 1999 - 2005 |
| <b>Per Capita Waste Generation</b>   |         |         |         |         |         |         |                                   |                                 |                  |             |
| Population   | 202,700 | 207,350 | 210,200 | 212,290 | 214,790 | 218,490 | 224,100                           | 3,567                           | 1.69%            | 1999 - 2005 |
| MSW Generation (lb/person/year)  | 1,446   | 1,588   | 1,451   | 1,542   | 1,567   | 1,558   | 1,596                             | 25                              | 1.65%            | 1999 - 2005 |
| Waste Generation (lb/person/year) <sup>4</sup>   | 2,128   | 2,385   | 2,186   | 2,560   | 2,244   | 2,519   | 3,281                             | 78                              | 3%               | 1999 - 2004 |
| <b>NOTES:</b>  |         |         |         |         |         |         |                                   |                                 |                  |             |
| <sup>1</sup> Ecology recycling information is derived from annual recycling survey results provided by Washington Ecology.   |         |         |         |         |         |         |                                   |                                 |                  |             |
| <sup>2</sup> Ecology diversion information is derived from annual recycling survey results provided by Washington Ecology.   |         |         |         |         |         |         |                                   |                                 |                  |             |
| <sup>3</sup> County disposal information is MSW and asbestos disposal from Thurston County financial tracking database used to monitor transactions at the scale house at the disposal facility. |         |         |         |         |         |         |                                   |                                 |                  |             |
| <sup>4</sup> Waste Generation is an estimate of the combined MSW generation and the generation of recyclable materials, not including diverted material.   |         |         |         |         |         |         |                                   |                                 |                  |             |

**Table 3-1  
Waste Projection Scenarios 2005-2030  
Thurston County, Washington**

|   | Projected Average Annual Growth Projected (lbs/person) | Year    |         |         |         |         |         |
|---|--|---------|---------|---------|---------|---------|---------|
|   |  | 2005    | 2010    | 2015    | 2020    | 2025    | 2030    |
| <b>Population</b>   |  |         |         |         |         |         |         |
|   |  | 224,100 | 255,000 | 285,000 | 319,000 | 348,000 | 373,000 |
| <b>Per Capita Waste Generation (lb/person/year)</b>       |  |         |         |         |         |         |         |
| Low - No MSW and Waste Generation Increase                | MSW and Recycled Material                              | 2,650   | 2,650   | 2,650   | 2,650   | 2,650   | 2,650   |
|   | MSW Disposal   | 1,596   | 1,596   | 1,596   | 1,596   | 1,596   | 1,596   |
| <b>County Wide Waste Generation (Tons/year)</b>           |  |         |         |         |         |         |         |
| MSW and Recycled Material                                 |  | 297,000 | 338,000 | 378,000 | 423,000 | 461,000 | 494,000 |
| MSW Disposal  |  | 179,000 | 203,000 | 227,000 | 255,000 | 278,000 | 298,000 |
| Recycled Material   |  | 118,000 | 135,000 | 151,000 | 168,000 | 183,000 | 196,000 |
| <b>Per Capita Waste Generation (lb/person/year)</b>       |  |         |         |         |         |         |         |
| Middle - Average of Low and High                          | MSW and Recycled Material                              | 2,650   | 2,845   | 3,040   | 3,235   | 3,430   | 3,625   |
|   | MSW Disposal   | 1,596   | 1,658   | 1,721   | 1,783   | 1,846   | 1,908   |
| <b>County Wide Waste Generation (Tons/year)</b>           |  |         |         |         |         |         |         |
| MSW and Recycled Material                                 |  | 297,000 | 363,000 | 433,000 | 516,000 | 597,000 | 676,000 |
| MSW Disposal  |  | 179,000 | 211,000 | 245,000 | 284,000 | 321,000 | 356,000 |
| Recycled Material   |  | 118,000 | 152,000 | 188,000 | 232,000 | 276,000 | 320,000 |
| <b>Per Capita Waste Generation (lb/person/year)</b>       |  |         |         |         |         |         |         |
| High - Increase MSW and Waste Generation at current rates | MSW and Recycled Material                              | 2,650   | 3,040   | 3,430   | 3,820   | 4,210   | 4,600   |
|   | MSW Disposal   | 1,596   | 1,721   | 1,846   | 1,971   | 2,096   | 2,221   |
| <b>County Wide Waste Generation (Tons/year)</b>           |  |         |         |         |         |         |         |
| MSW and Recycled Material                                 |  | 297,000 | 388,000 | 489,000 | 609,000 | 733,000 | 858,000 |
| MSW Disposal  |  | 179,000 | 219,000 | 263,000 | 314,000 | 365,000 | 414,000 |
| Recycled Material   |  | 118,000 | 169,000 | 226,000 | 295,000 | 368,000 | 444,000 |

**Table 5-1  
Future Alternatives for Further Consideration  
Thurston County, Washington**

| Description   | Feasibility |          |            |        |      | Total |
|---|-------------|----------|------------|--------|------|-------|
|   | Technical   | Economic | Regulatory | Social | Need |       |
| R1. Mandatory "commercial" recycling (office, retail, government)                           | 3           | 2        | 2          | 3      | 3    | 13    |
| R2. Establish baseline recycling summary  | 3           | 3        | 3          | 3      | 3    | 15    |
| R3. Multi-family program  | 3           | 3        | 3          | 3      | 3    | 15    |
| R4. Green Schools Program   | 3           | 1        | 3          | 3      | 3    | 13    |
| R5. School recycling awareness  | 3           | 3        | 3          | 3      | 3    | 15    |
| R6. School recycling  | 3           | 1        | 3          | 3      | 3    | 13    |
| R7. Business outreach   | 3           | 3        | 3          | 3      | 3    | 15    |
| R8. Expand recycling service offered to businesses  | 3           | 2        | 3          | 3      | 3    | 14    |
| R9. Modify existing public Z-wall to a "resource recovery" concept with voluntary recycling | 3           | 3        | 3          | 3      | 3    | 15    |
| R10. Materials reuse facility (at WARC)   | 3           | 2        | 3          | 3      | 3    | 14    |
| R11. Resource recovery center or park   | 2           | 2        | 3          | 3      | 2    | 12    |
| R12. Targeted sorting at Pacific Disposal MRF   | 3           | 3        | 3          | 3      | 1    | 13    |
| OR1. Expand curbside yard debris to other communities                                       | 3           | 3        | 3          | 2      | 3    | 14    |
| OR2. Ban yard debris from curbside waste-collection stream                                  | 3           | 3        | 3          | 2      | 3    | 14    |
| OR3. Partner with LOTT for co-composting of biosolids with chipped woodwaste                | 3           | 2        | 2          | 3      | 2    | 12    |
| OR4. Encourage backyard composting  | 3           | 3        | 3          | 3      | 3    | 15    |
| OR5. Add yard waste to drop-box sites and charge accordingly                                | 2           | 2        | 2          | 3      | 3    | 12    |
| OR6. On-site composting and education at schools  | 3           | 1        | 3          | 3      | 3    | 13    |
| OR7. Food waste to compost program (commercial/institutional)                               | 3           | 2        | 3          | 3      | 3    | 14    |
| OR8. Combine food waste with yard-debris collection   | 2           | 2        | 3          | 3      | 3    | 13    |
| OR9. Establish food waste transfer sites  | 3           | 3        | 2          | 2      | 2    | 12    |
| C1. Increase effectiveness of C/D recycling through WARC                                    | 3           | 2        | 3          | 3      | 3    | 14    |
| C2. Require recycling plan for larger C/D projects as part of building permit               | 2           | 3        | 2          | 3      | 3    | 13    |
| C3. Encourage green building standards for all buildings in County                          | 3           | 3        | 3          | 3      | 3    | 15    |
| C4. Lower C/D rate for source-separated materials/higher rate for mixed loads               | 2           | 2        | 2          | 3      | 3    | 12    |
| C5. Do not accept C/D mixed loads at WARC   | 2           | 3        | 2          | 2      | 3    | 12    |
| C6. Alternate C/D waste residual disposal location  | 3           | 2        | 2          | 3      | 2    | 12    |
| C7. Separate MSW and C/D operations within WARC to separate contracts (and contractors)     | 3           | 2        | 3          | 2      | 3    | 13    |
| C8. Repurpose WARC to C/D-only facility   | 3           | 2        | 3          | 2      | 2    | 12    |

**Table 5-1  
Future Alternatives for Further Consideration  
Thurston County, Washington**

| Description  | Feasibility |          |            |        |      | Total |
|--|-------------|----------|------------|--------|------|-------|
|  | Technical   | Economic | Regulatory | Social | Need |       |
| C9. Set up partnership to provide C/D dropoff facility in Thurston County  | 3           | 2        | 3          | 3      | 3    | 14    |
| C10. Construction material reuse center  | 3           | 1        | 3          | 3      | 3    | 13    |
| W1. Provide financial incentive in contract to increase separation and recycling                                       | 2           | 2        | 3          | 2      | 3    | 12    |
| W2. Provide incentive to increase waste recycling and reuse by separating WARC operation from waste-disposal contracts | 2           | 3        | 3          | 3      | 3    | 14    |
| W3. Mandatory collection within UGA  | 3           | 3        | 3          | 2      | 3    | 14    |
| W4. Mandatory collection County-wide   | 3           | 3        | 2          | 1      | 3    | 12    |
| W5. Survey WARC and drop-box users for zip code  | 3           | 3        | 3          | 2      | 1    | 12    |
| W6. Expanded customer education  | 3           | 2        | 3          | 3      | 3    | 14    |
| W7. Expand existing building to increase processing capacity   | 3           | 2        | 3          | 2      | 2    | 12    |
| W8. New commercial or residential tip building at WARC   | 3           | 2        | 3          | 2      | 2    | 12    |
| W9. Expansion of Rochester to full transfer station  | 3           | 2        | 3          | 2      | 3    | 13    |
| W10. New transfer station in south County  | 3           | 2        | 2          | 2      | 3    | 12    |
| W11. Use the Centralia Transfer Station to provide additional waste-transfer capacity                                  | 3           | 2        | 3          | 2      | 2    | 12    |
| W12. Railhead for intermodal yard  | 2           | 2        | 2          | 3      | 3    | 12    |
| W13. Railhead for intermodal yard and transfer station   | 2           | 3        | 2          | 3      | 3    | 13    |
| W14. Energy-recovery facility  | 2           | 2        | 2          | 3      | 3    | 12    |
| W15. Separate collection and self-hauler entrances   | 2           | 3        | 3          | 3      | 3    | 14    |
| W16. Increase transaction fee to cover facility cost   | 3           | 3        | 3          | 1      | 3    | 13    |
| W17. Increase minimum weight for the transaction basis   | 3           | 3        | 3          | 2      | 3    | 14    |
| W18. Establish differential per ton rates  | 3           | 3        | 3          | 2      | 3    | 14    |
| W19. Accept Credit and Debit Payment   | 3           | 2        | 3          | 3      | 2    | 13    |
| W20. Round transaction charges   | 3           | 3        | 3          | 2      | 3    | 14    |
| W21. Eliminate can and bag rate (or go to single small-volume charge for <3 cy)  | 3           | 3        | 3          | 1      | 3    | 13    |
| H1. Hazohouse advertising  | 3           | 3        | 3          | 3      | 3    | 15    |
| H2. Free small-quantity generator (SQG) dropoff  | 3           | 2        | 2          | 3      | 2    | 12    |
| H3. New MRW facility   | 3           | 3        | 3          | 3      | 3    | 15    |
| H4. New MRW dropoff facility   | 3           | 2        | 3          | 3      | 3    | 14    |
| H5. Increase frequency of collection events  | 3           | 2        | 3          | 3      | 3    | 14    |

**Technical**—Does the technology exist to implement this?

**Economic**—Can you afford to do this? Can you afford not to do this?

**Regulatory**—Is this legal? Can it be made legal? Are you being ordered to do something?

**Social**—Would the community's values and politics support this?

**Need**—Would this fulfill an environmental or economic outcome?

**Table 6-1**  
**2005 Total Recycling**  
**Thurston County, Washington**

| Material Type  | 2004 Waste Sort Average | 2005 Disposed (Tons) | 2005 Recycled (Tons) | 2005 Generation (Tons) | Percent Recycled |
|----------------|-------------------------|----------------------|----------------------|------------------------|------------------|
| Total Waste    |                         |                      |                      |                        |                  |
| Disposal       | 100%                    | 179,000              | 189,000              | 368,000                | 51%              |
| Paper          | 14%                     | 25,060               | 65,119               | 90,179                 | 72%              |
| Plastic        | 15%                     | 26,098               | 3,147                | 29,245                 | 11%              |
| Metal          | 7%                      | 11,921               | 18,249               | 30,170                 | 60%              |
| Glass          | 3%                      | 4,761                | 5,862                | 10,623                 | 55%              |
| Other Wastes   | 15%                     | 27,673               | 6,510                | 34,183                 | 19%              |
| Wood & CD      | 23%                     | 41,224               | 43,500 *             | 84,724                 | 51%              |
| Organic**      | 22%                     | 39,380               | 19,650               | 59,030                 | 33%              |
| Special Wastes | 2%                      | 3,168                | 622                  | 3,168                  | 0%               |

\* Wood recycling in 2005 has been adjusted to correct for a potential error in the data reported by Ecology.

\*\* Organic wastes includes yard waste, food waste, and compostable paper

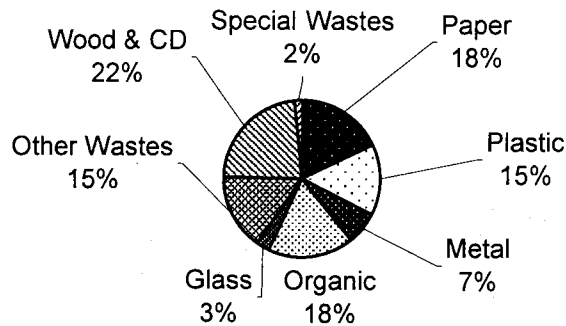
**Table 6-2  
Potential Waste Reduction Impacts  
Thurston County, Washington**

| Material                 | 2005 Total Generation | 2005 Amount Captured | 2005 Disposal Amount | Percent Diverted | Potential range of additional diversion success | Potential Impact |               |
|--------------------------|-----------------------|----------------------|----------------------|------------------|---|------------------|---------------|
|                          |                       |                      |                      |                  |   | Low End          | High End      |
| 2005                     |                       |                      |                      |                  |   |                  |               |
| Wood & CD                | 84,724                | 43,500 *             | 41,224               | 51%              | 20% to 40%                                      | 8,245            | 16,489        |
| Organics                 | 59,030                | 19,650               | 39,380               | 33%              | 30% to 50%                                      | 11,814           | 19,690        |
| "Commingled Recyclables" | 160,218               | 92,377               | 67,841               | 58%              | 10% to 20%                                      | 6,784            | 13,568        |
| <b>TOTAL</b>             | <b>303,972</b>        | <b>155,527</b>       | <b>148,445</b>       |                  | <i>Subtotal</i>                                 | <b>26,843</b>    | <b>49,748</b> |

\* Wood recycling in 2005 has been adjusted to correct for a potential error in the data reported by Ecology.  
 "Commingled Recyclables" = Paper, Plastic, Metal, Glass

## FIGURES

**Figure 2-1  
2004 Waste Characterization  
Thurston County, Washington**



| Category                 | Description            | 2004 County Average     | Category                      | Description           | Multi-Family   |
|--------------------------|------------------------|-------------------------|-------------------------------|-----------------------|----------------|
| PAPER                    | Newspaper              | 1.36%                   | GLASS                         | Clear Bottles         | 1.28%          |
|                          | Cardboard              | 3.43%                   |                               | Brown Bottles         | 0.58%          |
|                          | Office and Computer    | 0.92%                   |                               | Green Bottles         | 0.27%          |
|                          | Mixed Waste Paper      | 3.68%                   |                               | Non-Recyclable Glass  | 0.52%          |
|                          | Magazines              | 1.10%                   |                               | <b>Glass Subtotal</b> | <b>2.65%</b>   |
|                          | Milk Cartons, Other    | 0.23%                   | OTHER WASTES                  | Tires                 | 0.04%          |
|                          | Compostable Paper      | 4.49%                   |                               | Rubber Products       | 0.29%          |
|                          | Non-Recyclable Paper   | 2.64%                   |                               | Cosmetics             | 0.36%          |
|                          | <b>Paper Subtotal</b>  | <b>17.83%</b>           |                               | Disposable Diapers    | 1.55%          |
| PLASTIC                  | PET Bottles            | 0.81%                   |                               | Textiles              | 2.50%          |
|                          | HDPE Bottles           | 0.55%                   |                               | Carpet                | 0.95%          |
|                          | Bottles 3-7            | 0.08%                   |                               | Carpet Padding        | 0.38%          |
|                          | Tubs                   | 0.23%                   |                               | Leather               | 0.01%          |
|                          | Film and Bags          | 4.59%                   |                               | Furniture             | 1.43%          |
|                          | Plastic Packaging      | 1.19%                   |                               | CRT's                 | 0.22%          |
|                          | Other Plastic Products | 6.67%                   | Other Electronics             | 0.29%                 |                |
|                          | Expanded Polystyrene   | 0.47%                   | Ash, Dust                     | 0.28%                 |                |
| <b>Plastic Subtotal</b>  | <b>14.58%</b>          | Misc. Inorganics        | 0.13%                         |                       |                |
| METAL                    | Aluminum Cans          | 0.39%                   | Misc. Organics                | 0.10%                 |                |
|                          | Aluminum Foil          | 0.14%                   | Fines                         | 1.59%                 |                |
|                          | Tin Cans               | 0.67%                   | Residuals                     | 5.34%                 |                |
|                          | Mixed Metals           | 1.99%                   | <b>Other Waste Subtotal</b>   | <b>15.46%</b>         |                |
|                          | Ferrous Metals         | 2.74%                   | WOOD and C&D                  | Wood                  | 14.15%         |
|                          | White Goods            | 0.28%                   |                               | C&D                   | 8.88%          |
|                          | Non-Ferrous Metals     | 0.32%                   | <b>Wood, C&amp;D Subtotal</b> | <b>23.03%</b>         |                |
|                          | Aerosol Cans           | 0.15%                   | SPECIAL WASTES                | Paints and Solvents   | 0.12%          |
| <b>Metal Subtotal</b>    | <b>6.66%</b>           | Automotive              |                               | 0.06%                 |                |
| ORGANIC                  | Food Waste             | 13.63%                  |                               | Garden                | 0.02%          |
|                          | Yard Debris            | 4.38%                   |                               | Other                 | 1.58%          |
| <b>Organics Subtotal</b> | <b>18.00%</b>          | Actual Hazardous Wastes |                               | 0.22%                 |                |
|                          |                        |                         | <b>Special Waste Subtotal</b> | <b>2.00%</b>          |                |
| <b>TOTALS</b>            |                        |                         |                               |                       | <b>100.00%</b> |

Source: 2004 Waste Composition Study  
by Green Solutions

Pounds of Samples Sorted: 41,870  
Number of Samples Sorted: 240



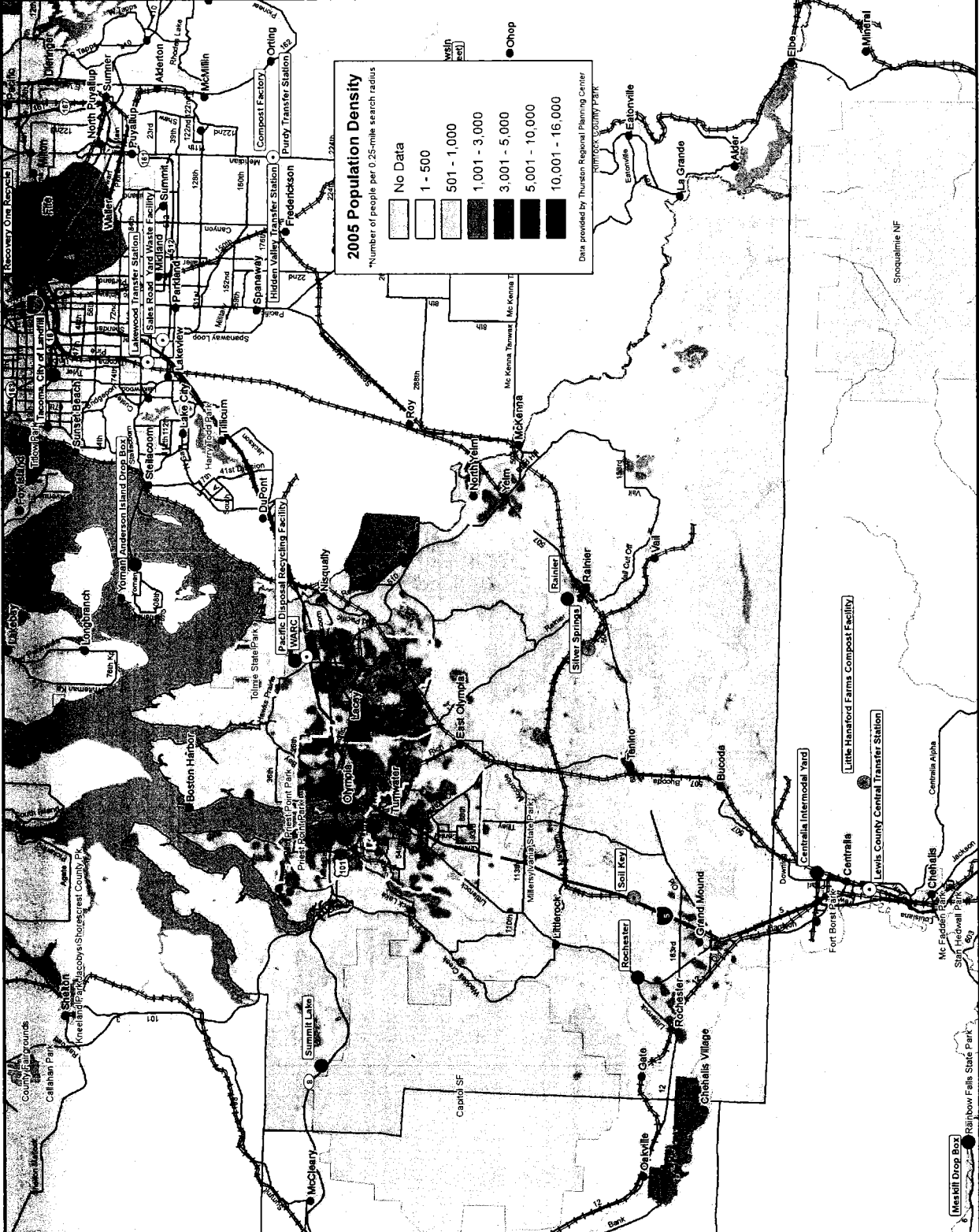
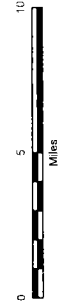
# Figure 3-1 Population Density Estimated for 2005

Department of Water  
and Waste Management  
Thurston County, Washington

## Legend

- Compost Facility
- Intermodal Facility
- Recycling Facility
- Drop Box Facility
- Transfer Station
- Municipal Solid Waste Landfill
- ==== Rail
- Interstate
- Major Roads
- Rivers
- Water Body
- Urban Growth Boundaries
- State Parks
- Indian Reservations

Sources: Thurston County Geodata Center,  
Thurston Regional Planning Council, WA  
Department of Transportation, WA Department  
of Ecology



### 2005 Population Density

\*Number of people per 0.25-mile search radius

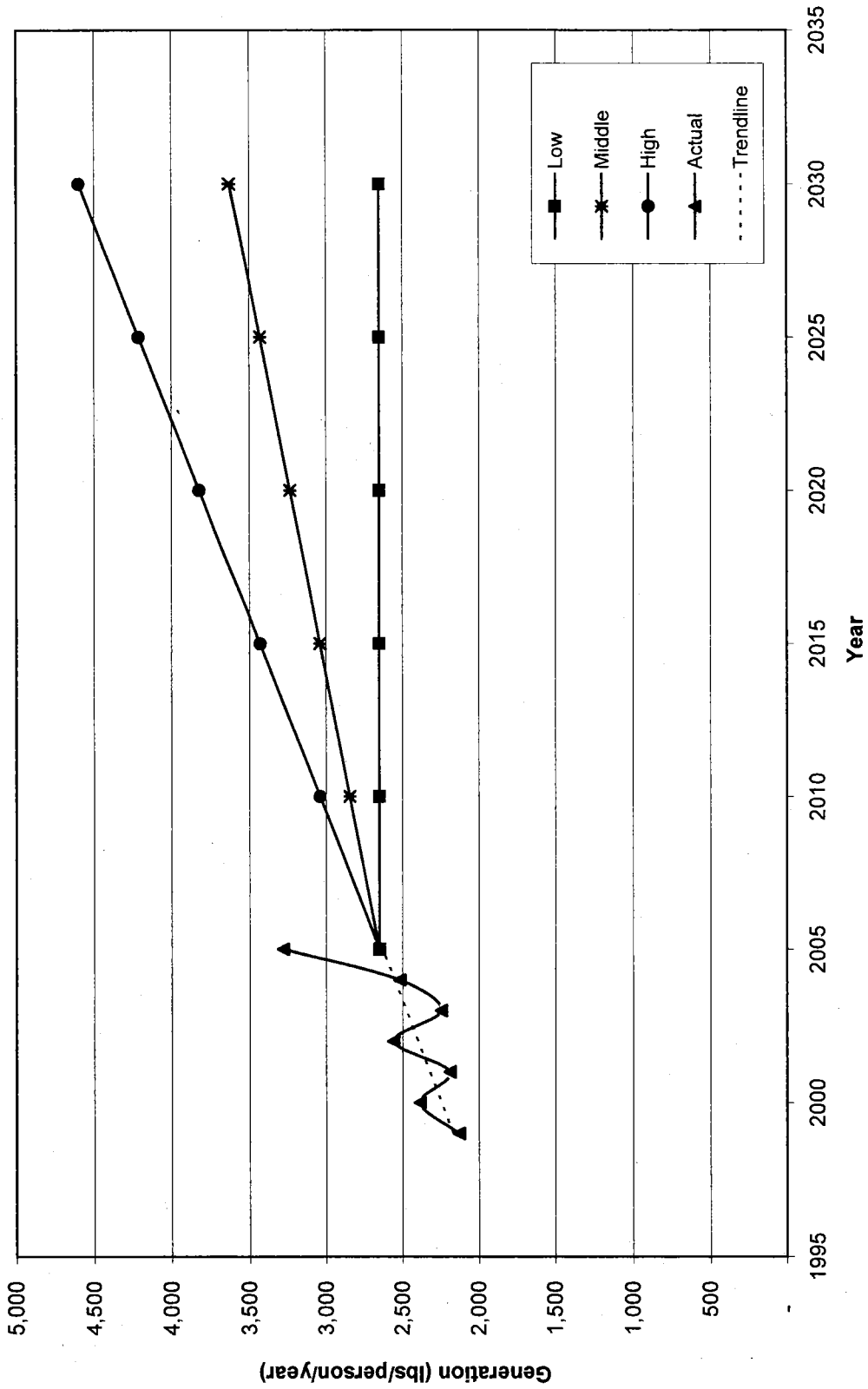
|             |                 |
|-------------|-----------------|
| White       | No Data         |
| Light Gray  | 1 - 500         |
| Medium Gray | 501 - 1,000     |
| Dark Gray   | 1,001 - 3,000   |
| Black       | 3,001 - 5,000   |
| Black       | 5,001 - 10,000  |
| Black       | 10,001 - 16,000 |

Data provided by Thurston Regional Planning Center  
© 2005 Thurston County Parks

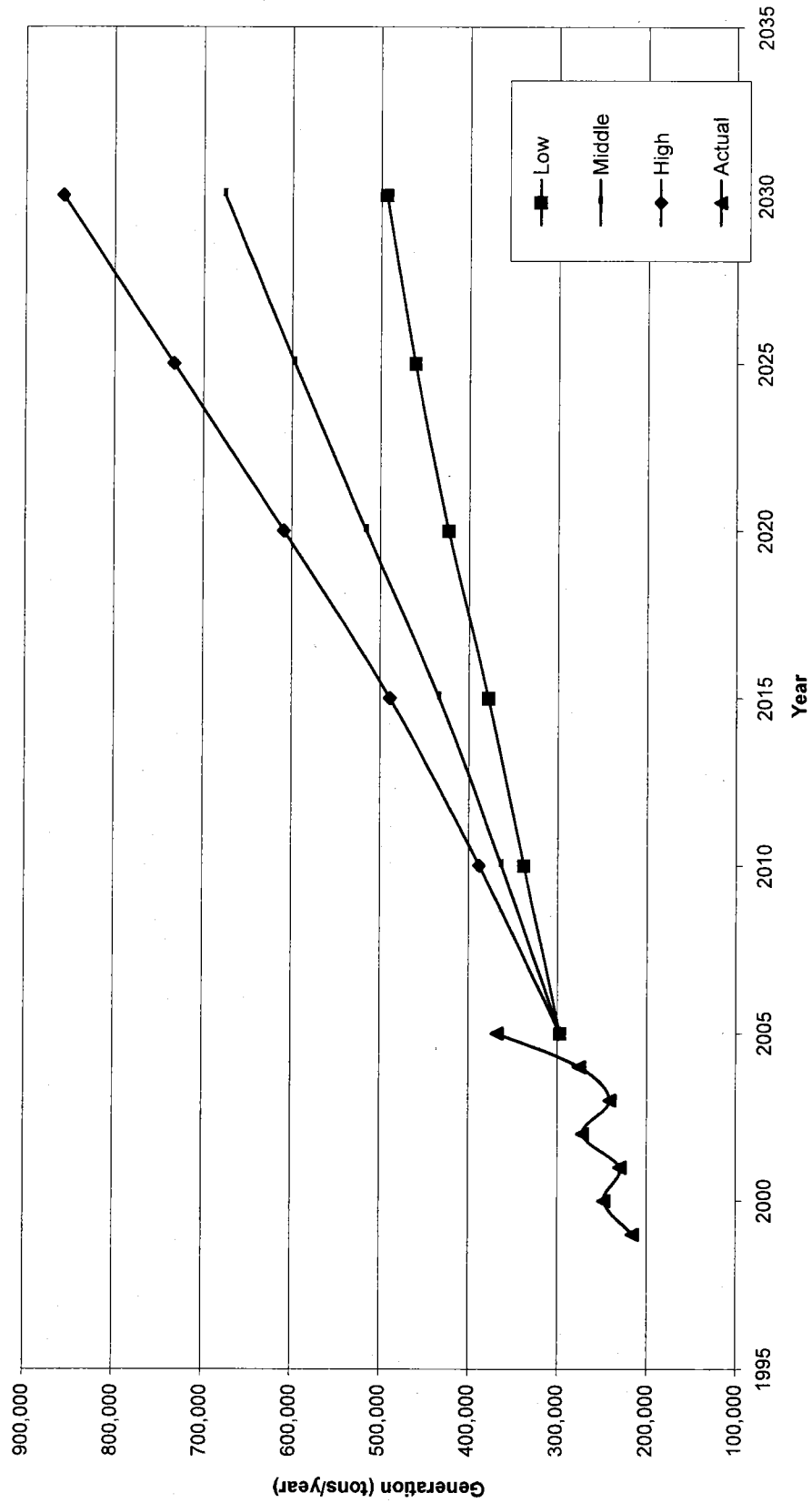
Project 3115.02.01  
Prepared by: T. Wick  
Approved by: E. Esham



**Figure 3-3  
Per Capita MSW + Recycling Generation  
Thurston County, Washington**



**Figure 3-4**  
**County-Wide MSW + Recycling Generation**  
**Thurston County, Washington**

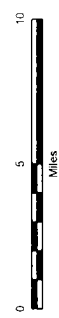


**Figure 3-5**  
**Waste Distribution**  
**Estimated for 2005**  
 Department of Water  
 and Waste Management  
 Thurston County, Washington

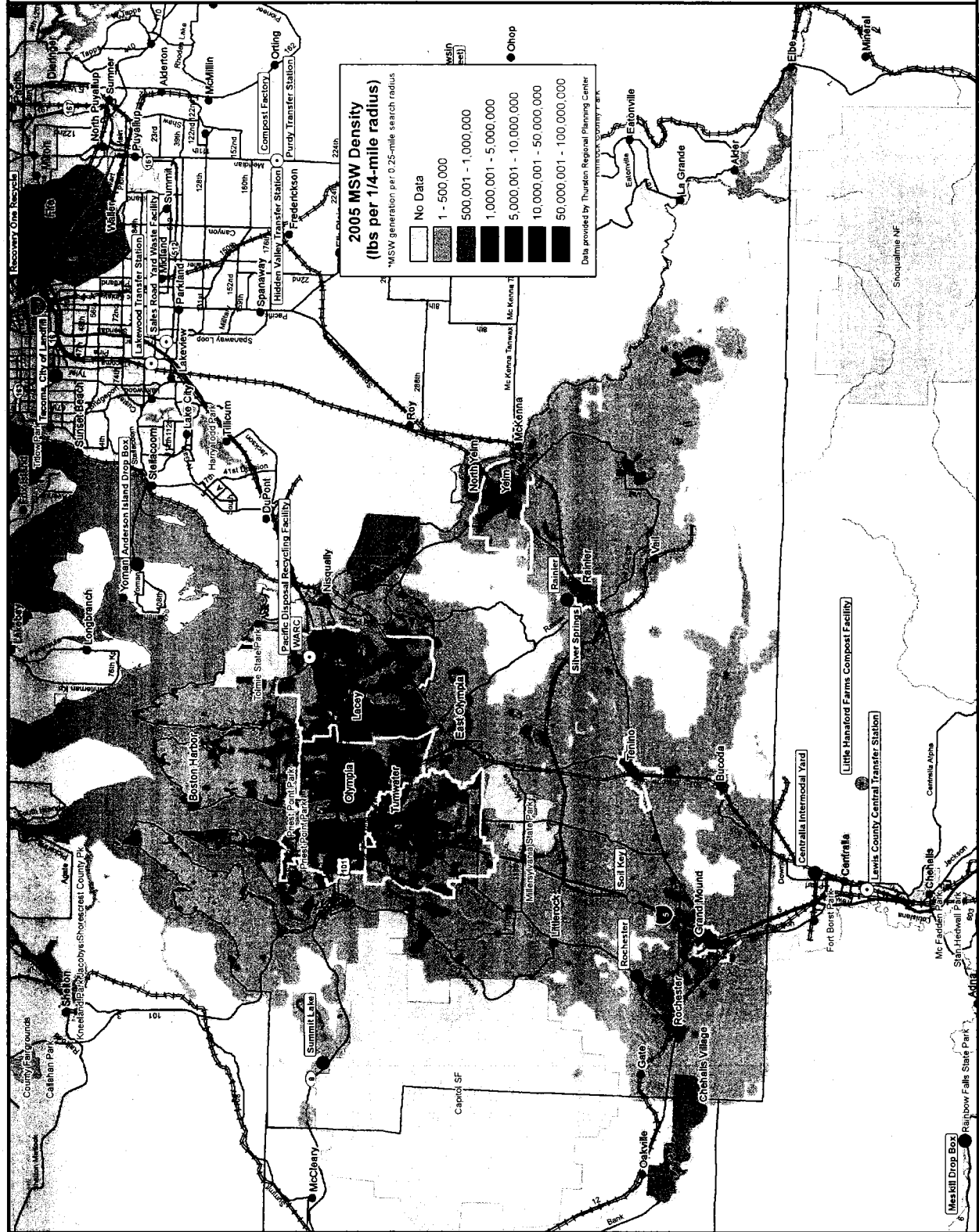
**Legend**

- Compost Facility
- Intermodal Facility
- Recycling Facility
- Drop Box Facility
- Transfer Station
- Municipal Solid Waste Landfill
- Rail
- Interstate
- Major Roads
- Rivers
- Water Body
- Urban Growth Boundaries
- State Parks
- Indian Reservations

Sources: Thurston County Geodata Center,  
 Thurston Regional Planning Council, WA  
 Department of Transportation, WA Department  
 of Ecology



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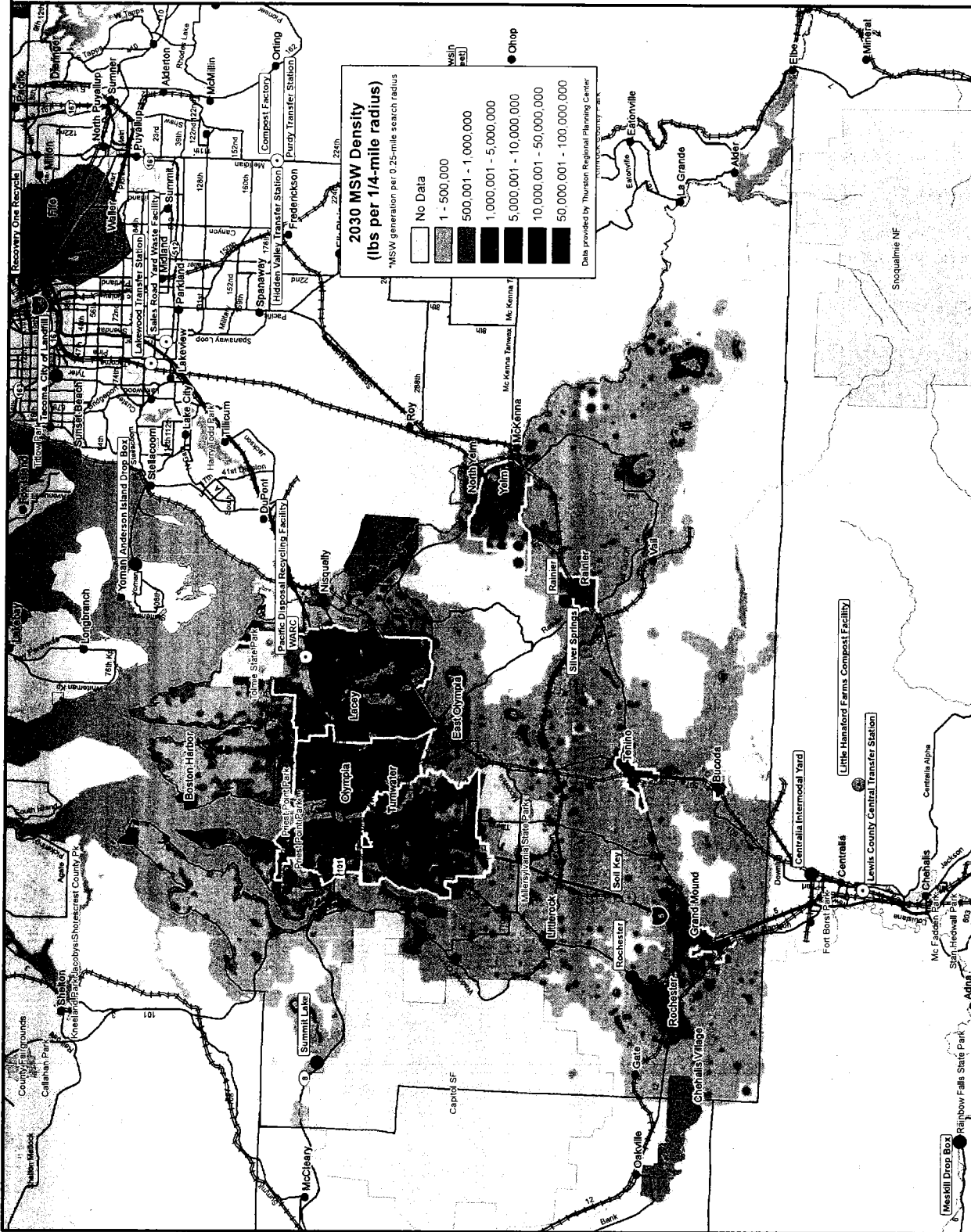
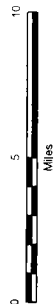
**Figure 3-6**  
**Waste Distribution**  
**Projected for 2030**

Department of Water  
 and Waste Management  
 Thurston County, Washington

**Legend**

- Compost Facility
- Intermodal Facility
- Recycling Facility
- Drop Box Facility
- Transfer Station
- Municipal Solid Waste Landfill
- Rail
- Interstate
- Major Roads
- Rivers
- Water Body
- Urban Growth Boundaries
- State Parks
- Indian Reservations

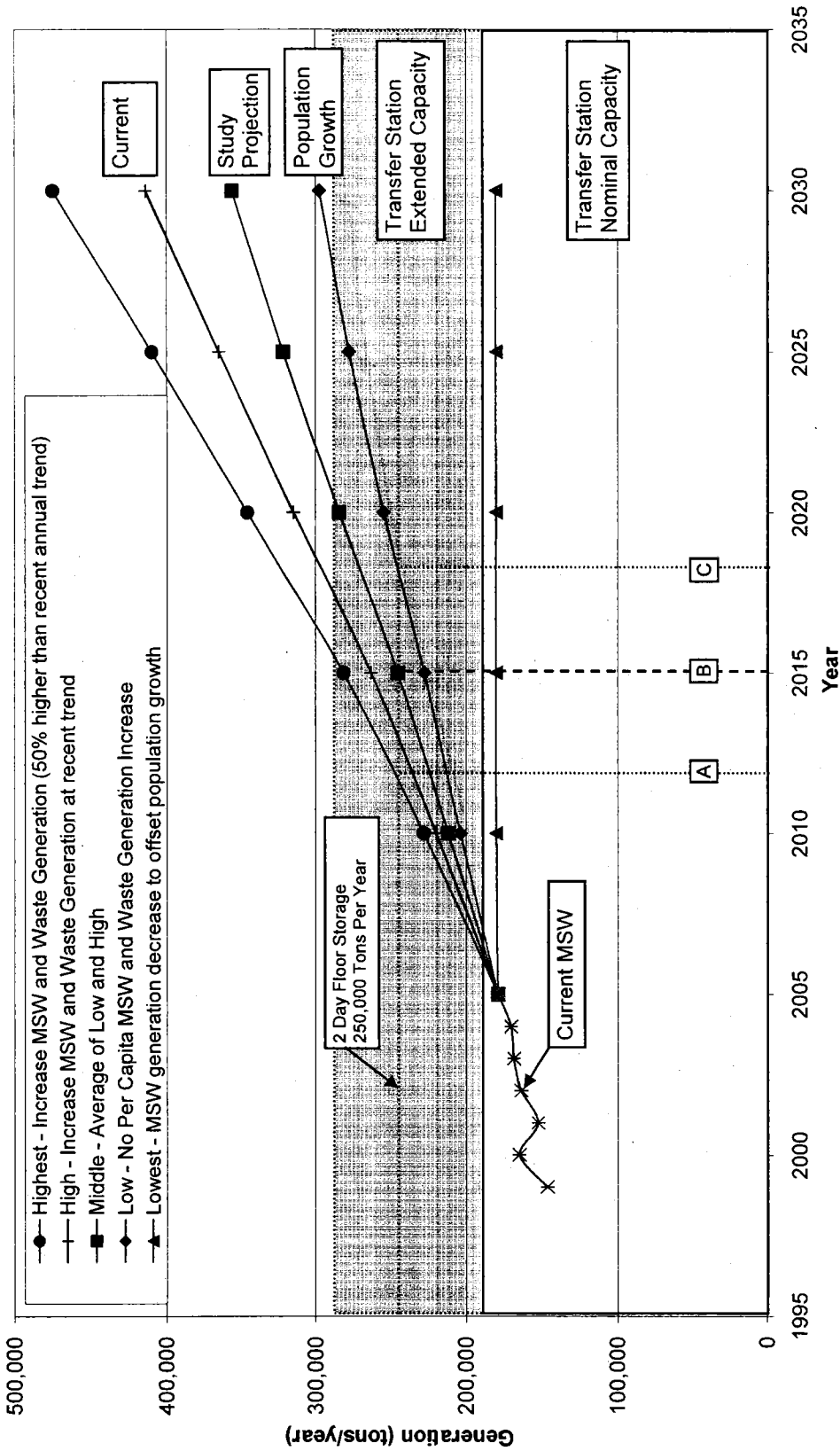
Sources: Thurston County Geodata Center,  
 Thurston Regional Planning Council, WA  
 Department of Transportation, WA Department  
 of Ecology



Project 8155.02.31  
 Prepared by T. Wick  
 Approved by E. Babson

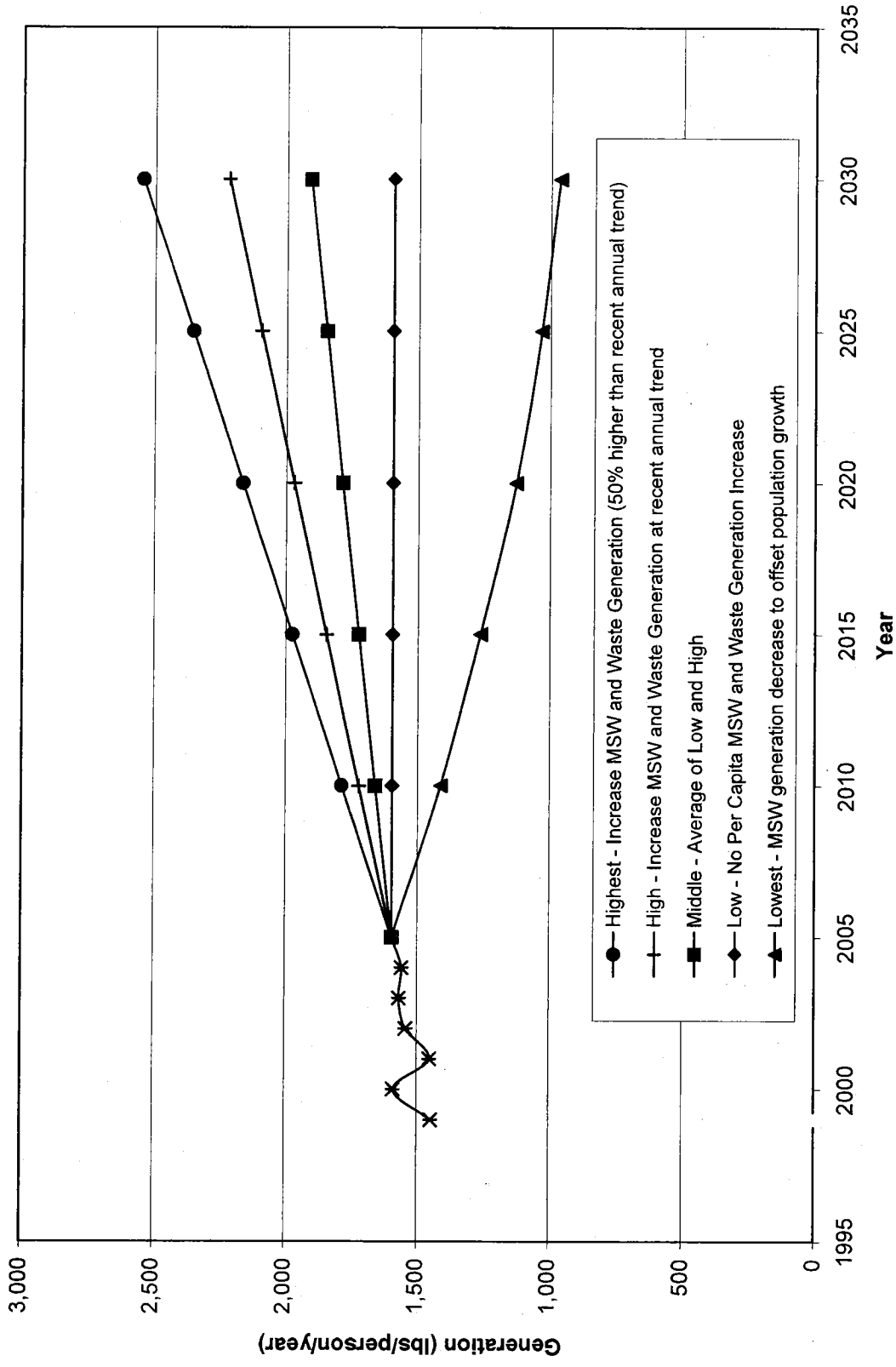
Mapskill Drop Box  
 Rainbow Falls State Park

**Figure 6-1**  
**Transfer Station Planning Tool**  
**Thurston County, Washington**



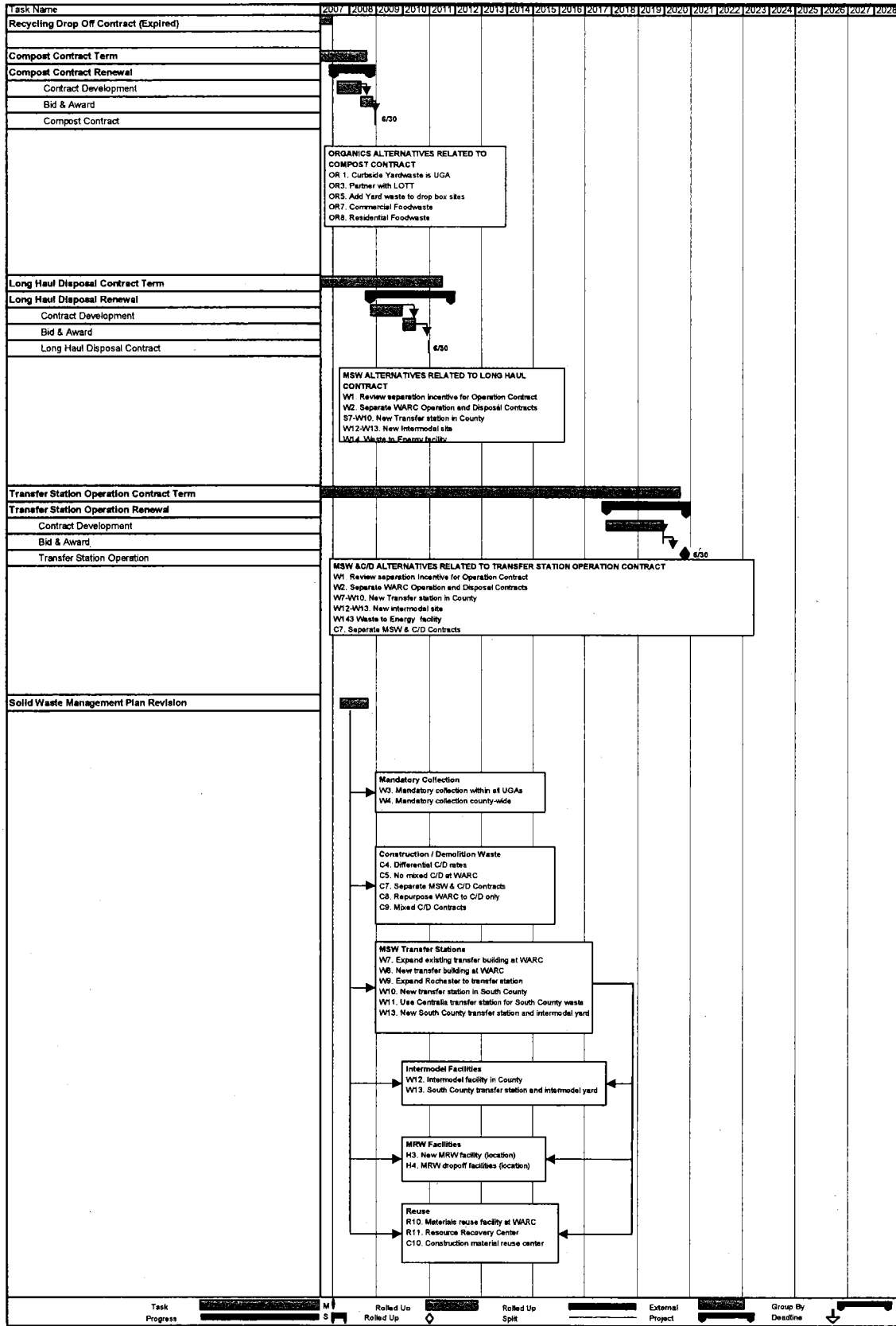
**New Transfer Station Capacity Needed:**  
 A: Unsuccessful waste diversion - 2012  
 B: Projected diversion - 2015  
 C: Successful diversion - 2018

**Figure 6-2**  
**Planning Tool - Per Capita Generation (lbs/person/year)**  
**Thurston County, Washington**





**Figure 6-3  
Solid Waste System Timeline  
Thurston County, Washington**



**APPENDIX A**  
**ELIMINATED ALTERNATIVES**

## APPENDIX A ELIMINATED ALTERNATIVES

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After review of the existing Thurston County solid waste system information, the waste stream characterization, and the waste projection, a list of potential system modifications was developed. The alternatives address ways in which the Thurston County Department of Water and Waste Management potentially can divert more waste from landfill disposal for recycling or composting. The alternatives were reviewed by a subcommittee of the Solid Waste Advisory Committee (SWAC), with one representative from each of the following groups: City, garbage hauler, recycling industry, and citizen-at-large, as well as members of the DWWM staff. Review of each option included considerations of technical feasibility, economic feasibility, regulatory feasibility, social feasibility, and overall need, to which point values were assigned and then overall feasibility was determined. The alternatives discussed below were ranked with a low score for overall feasibility and were eliminated from further discussion. The feasibility scoring is contained in Table A-1.

The section headings are recyclables, organics, construction/demolition waste, garbage (MSW) and moderate-risk waste. In the discussion below, references to the "County" represent the population and geographic area of Thurston County; references to "DWWM" specifically refer to the Department of Water and Waste Management.

### **R13. Target materials to ban from the waste stream**

The DWWM can develop a list of materials that can be banned from disposal, such as C/D waste, yard waste, office paper, and cardboard. Materials bans act as a disincentive for disposing of these materials in the general waste stream, since through enforcement activities, penalties can be applied to the user. In establishing a materials ban, the DWWM must ensure that there is a reasonably accessible alternative to disposal of the material. In addition, the definition of the materials to be banned should be very well developed so that materials with an unacceptable amount of contamination may still be disposed of by recycling facilities and by system users.

*Pro:* The policy could reduce the amount of recyclable materials sent for disposal.

*Con:* Bans can be an unpopular method to accomplish a worthwhile goal.

A ban requires enforcement in order to be effective.

The policy may not be flexible enough to allow disposal of contaminated materials that cannot be recycled.

**R14. Mandatory “commercial” recycling for everyone with over X employees or Y square feet or Z cubic yards per year**

Mandatory commercial recycling could be implemented for all businesses that employ above a set minimum number of employees or a minimum number of square feet of their business space. The recycling plan could also be required for businesses subscribing to garbage service with a certain minimum size bin, such as a 1-cubic-yard bin. Similar to above, the requirement could be targeted at specific sectors (office, retail, government) or it could be applied to all sectors. This type of program would be designed to minimize the financial impact on very small businesses by allowing them to participate voluntarily.

*Pros:* Very small businesses may opt against subscribing to commercial services that may sometimes be more effectively provided by residential recycling collection services.

The policy would be set up to target larger waste volume businesses, which may have a larger impact on the County waste stream.

*Cons:* Businesses would not be on an even playing field since the policy allows certain businesses not to participate in recycling.

In the areas that are serviced by LeMay under the WUTC certificate, very small businesses may not be able to participate in residential collection programs and so would not necessarily be able to obtain an alternative means of recycling service.

Small businesses are still very likely to generate a high amount of paper waste, which can easily be recycled.

*Discussion:* The DWWM would need to assemble data to defend its decision of what the cutoff point should be in terms of business size. The analysis to determine the cutoff point could become time-consuming and expensive.

**R15. Mandatory recycling reporting (tonnage) by recyclers**

An ordinance for mandatory recycling reporting can be developed by the DWWM to collect information from recyclers operating in the County or serving businesses in the County. The ordinance would allow the DWWM direct access to the level of information collected by Ecology. The DWWM could then analyze the data to determine residential, commercial, and industrial recycling trends. Similar ordinances have been implemented in Spokane County and the City of Seattle. In Spokane County, the department coordinates with Ecology so that the necessary information can be provided on a single survey, with no duplication of reporting by industries.

*Pros:* Gives DWWM access to data otherwise managed by Ecology and kept confidential.

Could help the DWWM establish a baseline for recycling on which to measure the effectiveness of new recycling programs.

Could help the DWWM to understand changes in the recycling trends, since it could identify the source of changes in reporting tonnage and be able to question the recycler directly about the information.

*Cons:* Recyclers who have solid waste permits already report recycling numbers to the County's health department.

Would require additional DWWM staff for managing the data and reviewing trends.

Determining the source of material (in or out of County) would require extra effort and tracking by the recycler.

Material recycled out of County may not be accounted for.

The amount of information may be much more than what the DWWM really needs to manage the waste stream at this time.

Goes beyond DWWM's need to collect a breakdown of the LeMay collection data. DWWM would like to be provided collection data broken down by residential and commercial categories, and waste versus recycling, which are not currently provided.

**R16. County recyclable buy-back center**

The DWWM could also establish a buy-back center for limited materials with higher values, such as cardboard and aluminum cans. The facility would allow residents the opportunity to bring high-grade source-separated materials to a central location, with the materials bought for a portion of their resale value.

*Pro:* Increase public access to a buy-back facility.

*Con:* This is a service that is already offered at several locations throughout the County, including the Pacific Disposal facility (near the WARC); the DWWM would be in direct competition with these businesses.

There is a low public value to the DWWM offering this service.

**R17. Modify WARC transfer-station pickline for recovery of MSW**

The existing pickline at the transfer station was originally designed for sorting recyclables from the entire waste stream. An investment in new equipment could allow the facility to function as a “dirty” MRF, where recyclables are recovered directly from the general MSW stream. Dirty MRFs are typically equipment intensive and may have a bag ripper, trommel screen, paper screens, ferrous- and nonferrous-metals separators, and conveyors, in addition to manned sorting stations for separating various types of plastics. Dirty MRFs are challenged in the types of materials that they can successfully recover from the general garbage stream, since the removal of trash bags is critical; the likelihood of jamming the material in any of the mechanical separators can be high, depending on the types of materials being processed; and the number of staff required to run the facilities full-time can be quite high because of the number of sorting stations and general materials handlers required to load material on the conveyor, and then handle and bale sorted/recovered materials. In addition, the equipment cost for these pieces of machinery can be quite high.

*Pro:* Could increase the amount of materials recovered from the waste stream before disposal.

*Con:* Significant capital expenditure for processing equipment.

Processing of the general waste stream can be very difficult because of the large quantity of material that must be picked

through by hand or by machine. Machinery can be prone to material jams, leading to facility downtime.

Recyclables produced would likely be of lower quality (more contaminated) and could be more difficult to market.

Could reduce the public motivation to recycle curbside, and make the public dependent on the new system to recycle for them.

Would make the new single-stream recycling system less viable. As fewer people participate, cost for the service will increase.

**R18. For urbanized areas (inside UGA), make yard-debris collection mandatory**

A new minimum-service ordinance could require that curbside yard waste collection within UGAs be mandatory instead of voluntary. Through the mandatory collection, the amount of incoming yard waste mixed with MSW should decrease, since the service is already paid for by the resident. While this type of policy could increase overall participation in the program, it would force residents who successfully home compost their waste to pay for a program they do not need to use. To address this issue, the DWWM could define an exemption that would enable the home composter to demonstrate the ability to compost in order to waive the yard-waste collection charges.

*Pro:* Ensures that all residences within the UGA subscribe to the yard-debris collection service, ultimately resulting in a reduction in the hauler's overall collection cost.

Participation in a paid yard-debris collection service should result in a decrease in yard waste disposed of as garbage.

Eliminates customer concerns over having enough yard debris to justify separate service.

*Con:* May discourage home composting efforts, since homeowners are paying for the collection service, and end up making a larger demand on waste-handling systems in the County.

**C13. Recycling deposit for building permits**

A modification of the recycling plan concept that has also been used in several jurisdictions is the use of a recycling deposit. A deposit is made as a percentage of the overall project cost at the time the permit is taken. In

order to get the full deposit refunded, the permit holder is required to show proof that he has achieved a specific recycling rate, in the form of receipts for materials disposed of and recycled. A graduated scale is then referred to for achieving recycling rates less than the specified goal, which corresponds to 75, 50, and 25 percent of the original deposit being returned. The recycling deposit would be required in addition to the administration fee required by the recycling plan.

*Pro:* Is a financial incentive for contractors to follow the recycling program that is set out in the individual recycling plans that are approved by the County or city building department.

Uncollected recycling deposits could be used to fund program administration or could be directed to contractor- or general-public-education activities for waste reduction.

*Con:* The program may discriminate against very efficient builders that do not generate a lot of waste if strict recycling percentages are used as goals. An alternative means of addressing those builders may be necessary, such as generating less than a minimum amount of construction waste.

The program would require additional administration effort for determining that a contractor has met the recycling goals in order to return part or all of the recycling deposit.

#### **C14. Ban C/D from waste stream**

Banning C/D from the waste stream would place the responsibility for recycling C/D material directly on the generator. The contractors and residents of the County would be required to manage their large-volume material by means other than disposal. This type of ordinance would require the DWWM to ensure that adequate services were available for alternative means of handling without being overly burdensome. If services were not available, it could result in an increase of illegal dumping of the banned materials, which the DWWM would be forced to manage. Banning C/D would also require all employees at the WARC and drop-box facilities to take an active role in monitoring waste to enforce the County ban. The definition of banned materials may require exclusions for small amounts of material.

*Pro:* Eliminates construction debris from the County waste stream sent for landfill disposal.

*Con:* Could result in increased illegal dumping of construction debris.



Bans can be an unpopular method to accomplish a worthwhile goal.

May be difficult to enforce.

**C15. Limit growth in County with the results of less building and less C/D-waste generation**

The County is currently projected to grow in population by 66 percent by 2030. This expected growth will result in the generation of additional C/D waste as more houses are built to accommodate new residents. Placing severe restrictions on growth and construction in the County will decrease the overall amount of C/D waste generated. However, growth restrictions would have drastic impacts on the local economy.

*Discussion:* It is not within the authority of the DWWM or SWAC to place limits on growth.

**C16. Develop private C/D-recycling facility in Thurston County**

The DWWM can attempt to develop a partnership with a private company to construct a C/D recovery and recycling facility in Thurston County. It would be necessary to locate the facility in a readily accessible area off of I-5, in one that maximizes the facility's use by customers in and out of County. The facility would be able to divert most materials received to a higher use, which could include energy recovery or recycling of the materials. Screening procedures at the facility would likely turn away some materials, which would then need to be handled at the transfer station for landfill disposal.

It could be difficult for the new facility to maintain its minimum required volume to stay in business.

*Pro:* Would offer local sorting service for Thurston County residents and contractors

There is a reduced requirement for County capital investment for development of a private facility. Additionally, the private operator would be responsible for designing the facility and equipment.

A similar facility in Tacoma (Recovery 1) already receives a portion of Thurston County C/D waste, has excess capacity, and may be adversely affected by a new facility.

*Con:* Because of the limited size of the C/D stream in Thurston County, it is unlikely that a private facility could process enough material to remain in business. The facility would need to be able to take in material from other nearby counties in order to process the necessary quantity.

**W21. Increase contract recovery rate**

The DWWM can conduct another waste characterization to evaluate the incoming distribution of materials at the transfer station and increase the recovery goal for the facility to 10 percent, as originally specified in the contract. The DWWM could also negotiate with LeMay to raise the recovery goal above 10 percent, although more justification would be required and an incentive identified. Raising the recovery goal for the transfer station would result in a higher amount of C/D recovery, as opposed to materials from the general MSW stream, because C/D materials are typically much heavier and would allow the goal to be achieved with much less effort.

*Pro:* Would provide contractual motivation for the transfer-station operator to achieve a higher recovery rate at the transfer station.

*Con:* Could result in decreased quality of recovered materials, which typically are more difficult to market than high-quality materials.

Could result in a significant increase in facility operation costs for a relatively small decrease in landfilled material.

Increased effort at the pickline decreases the overall processing rate through the transfer station.

*Discussion:* The original transfer-station operation contract specified a 10 percent recovery goal, which included about 5 percent for material that was diverted as yard waste for composting at the former compost facility at the WARC. When the DWWM established a separate (lower) yard-waste rate, this material was directed to a specific area, and it was decided that it should not be part of the material allowed to be counted toward the recovery goal. The facility recovery goal was lowered to 5 percent to reflect the changes in the criteria for meeting the goal.

**W22. Investigate DWWM control of nonmunicipal MSW collection services and rates**

- Allows DWWM to set rate structures, which could increase participation in recycling program.

- Allows monitoring by DWWM or government by direct receipt of data.
- May need legal opinion as to whether DWWM has authority to do this.
- May require changing the law at the state level to allow DWWM control of the contract.

*Pro:* Allows DWWM influence in setting commercial rates to encourage participation by the business community in the recycling programs.

*Con:* Commercial MSW collection is regulated by the WUTC, so County or DWWM control is not possible.

**W23. Eliminate sorting line and modify building to increase capacity**

The sorting line occupies approximately 20 percent of the footprint of the existing transfer-station building. Elimination of the sorting line would free some of this space for additional floor storage of waste materials, which would allow the contractor to receive materials at a rate that is faster than the current capacity of the compactor. Stored materials would be processed during lulls in incoming waste during the day and after closing of the front gates. Additional floor storage would also provide additional emergency capacity in the event that waste could not be shipped from the WARC for several days (i.e., rail shutdown, unavailable transfer trailers, or other event). However, this would eliminate the DWWM's ability to recover materials from the waste stream flowing through the transfer station for recycling.

*Pro:* Would provide a significant increase in the amount of material storage available and could allow the facility to store more material during the day and continue processing after closing the gate.

Would reduce the operation and maintenance cost of the transfer station since the pickline requires between five and eight staff to operate at current levels; in addition, the machinery is expensive to maintain.

*Con:* Would require C/D to be recovered at a location other than the transfer station.

**W24. Support development of a new regional landfill in County at closed mine or other location**

As an alternative to continued disposal of waste in an out-of-County landfill, the DWWM could construct a new landfill or support the construction of a new landfill by a private party. It would be necessary for the facility to meet all of the current state and federal minimum standards for a Subtitle D landfill to ensure adequate protection of the environment. This facility could be built in a less populated area of the County, including at the closed mine near Bucoda. An in-County landfill would greatly reduce the amount of transportation needed for County waste and allow the County to take more responsibility for the disposal of County waste. Overall, this would provide a much more sustainable solution for the future. The landfill should be designed with sufficient capacity for at least 30 years. Additional reuse and recycling facilities should also be located at the site to provide access to these services.

*Pro:* Would provide in-County disposal, significantly reducing DWWM dependence on transportation of waste.

Could be designed to provide enough capacity to manage County waste for at least 30 years.

Could be privately constructed and operated.

Depending on total capacity of facility, could be opened to other counties.

If sited at closed mine near Bucoda, could provide new local jobs to replace mining operations, and could make use of below-ground space resulting from the mine.

*Con:* Site-selection process could be expensive.

Permitting and construction could be expensive because of stormwater-management requirements.

Landfill siting can be difficult public issue.

Distance to wastewater treatment plant, for leachate management, may limit availability of sites.

**W25. Construct bypass lane at WARC for collection vehicles**

Since self-haulers are having a negative impact on the movement of collection vehicles through the facility, it may be desirable to establish separate entrances for the two types of vehicles. This could be accomplished by establishing a bypass lane for collection vehicles that would allow them to eliminate their wait in the scale-house line. This lane could be separated by barriers or cones to prevent self-hauler traffic from attempting to use the lane improperly. The lane could then merge back in at one of the scale houses, with preference at the scale house given to the collection vehicle. The largest impact of adding a bypass lane would be for the drop-box trucks, which cycle through the WARC several times a day and are forced to wait in line each time.

*Pro:* Would improve access and dump time for collection vehicles.

Traffic congestion is a problem mainly on weekends, so the bypass lane could be used for residential haulers on weekends.

May be able to include all commercial account customers if they are issued a swipe card.

*Con:* Watching commercial trucks bypass the line may increase public frustration.

Collection-vehicle traffic is a very small portion of WARC traffic.

Would require construction of additional roads at the WARC and would impact parking for several facilities.

**W26. Eliminate acceptance of checks/accept credit and debit payment**

One way to speed up the transaction time is to eliminate the use of checks as an acceptable form of payment. Checks require that traffic stop long enough for the user to write the check, and then for the attendant to verify the information and record the driver's license number and deposit information onto the back of the check. Eliminating the use of checks would also speed up the inbound transaction, since current policy requires the user to provide the check on the inbound side so that it can be stamped "For Deposit Only."

*Pro:* Having a no-check payment policy would shorten transaction time at the outbound scale.

Incidences of insufficient funds would be reduced.

*Con:* Some people will still want to use checks, or don't have debit or credit cards.

Some businesses send employees to the WARC with checks so that charges can be controlled or can be assessed immediately and invoiced to customers.

**Table A-1  
Future Alternatives Eliminated from Further Consideration  
Thurston County, Washington**

| Description  | Feasibility |          |            |        |      | Total |
|--|-------------|----------|------------|--------|------|-------|
|  | Technical   | Economic | Regulatory | Social | Need |       |
| R13. Materials ban on targeted items   | 2           | 3        | 2          | 2      | 2    | 11    |
| R14. Mandatory "commercial" recycling for everyone with over X employees or Y square feet      | 3           | 2        | 1          | 2      | 2    | 10    |
| R15. Mandatory recycling reporting (tonnage) by recyclers                                      | 2           | 2        | 2          | 2      | 2    | 10    |
| R16. County recyclable buy-back center   | 3           | 3        | 3          | 1      | 1    | 11    |
| R17. Modify WARC transfer-station pickline for recovery of MSW                                 | 3           | 2        | 2          | 1      | 1    | 9     |
| OR10. For urbanized areas, make yard debris collection mandatory (inside UGA)                  | 3           | 3        | 3          | 1      | 1    | 11    |
| C13. Recycling deposit for building permits  | 2           | 3        | 2          | 1      | 2    | 10    |
| C14. Ban C/D from waste stream   | 3           | 2        | 1          | 1      | 3    | 10    |
| C15. Limit growth in County with the results of less building and less C/D-waste generation    | 1           | 1        | 1          | 1      | 3    | 7     |
| C16. Develop partnership with private C/D recycling facility in Thurston County                | 2           | 1        | 2          | 3      | 3    | 11    |
| W22. Increase contract recovery rate   | 2           | 1        | 3          | 1      | 1    | 8     |
| W23. Investigate County control of nonmunicipal collection services and rates                  | 1           | 1        | 1          | 1      | 1    | 5     |
| W24. Eliminate sort line and modify building to increase capacity                              | 2           | 3        | 2          | 2      | 2    | 11    |
| W25. Support development of a new regional landfill in County at closed mine or other location | 3           | 2        | 2          | 1      | 3    | 11    |
| W26. Construct bypass lane at WARC for collection vehicles                                     | 2           | 3        | 3          | 2      | 1    | 11    |
| W27. Eliminate the use of checks   | 3           | 2        | 3          | 1      | 1    | 10    |

**Technical**—Does the technology exist to implement this?

**Economic**—Can you afford to do this? Can you afford not to do this?

**Regulatory**—Is this legal? Can it be made legal? Are you being ordered to do something?

**Social**—Would the community's values and politics support this?

**Need**—Would this fulfill an environmental or economic outcome?





# APPENDIX B

## OBJECTIVES AND ACTIONS



The Thurston County Solid Waste Action Plan (Action Plan) contains a list of actions through which Thurston County Solid Waste (TCSW) will strive to meet the reduced solid-waste-disposal goal discussed in Section 3.1 of the Action Plan. This appendix contains a more detailed discussion of each of the objectives and actions contained in the Action Plan.

As part of the Action Plan, TCSW has developed a series of *metrics*, a metric being a statement defining the methods used to measure outcomes. These metrics are an integral part of the Action Plan because they establish the basis for judging its success. The metric statement is listed for each action.

### **OBJECTIVE A1: Track Data in Order to Evaluate Effectiveness of Programs, Policies, and Actions**

The purpose of this objective is to support and improve current efforts to track waste-disposal trends. Tracking these data will provide the County an opportunity to adjust programs and policies as necessary in order to meet plan goals.

*Action A1.a) Maintain and report waste landfilled per capita data; create a baseline for 2005.*

Tracking waste landfilled per capita provides a metric against which the success of programs and policies can be measured. Creating a baseline will provide a historical reference point for long-range planning efforts. By creating a per capita goal, TCSW can assess the success of the plan regardless of fluctuations in overall population. 2005 is selected as the baseline for future comparisons because the data correspond to a period that would be expected to be a maximum condition with respect to the calculation of per capita disposal: the housing boom was occurring, resulting in high amounts of construction and demolition waste (C/D) generation; and the economy was strong, allowing increased consumer spending and the resulting increase in waste generation among the general population. In addition, in 2005, the residential curbside source-separated recycling program was in effect (prior to commingled collection) and was considered generally successful.

Implementation: Ongoing

Metric: Annual assessment of per capita waste disposal

*Action A1.b) Monitor annual system disposal for facility planning purposes and for maintaining system capacity.*

Total waste disposal and recycling in the county should be monitored to ensure that proper capacity is maintained. Annual system disposal data can be used in conjunction with the Planning Tool (see System Assessment, Figure 6-1) to evaluate system capacity needs. This process will assist TCSW in making critical, strategic,

long-term planning decisions related to construction and/or improvement of facilities.

Implementation: Ongoing.

Metric: Annual summary of waste disposal and completion of Planning Tool update.

*Action A1.c) Continue to collect and monitor curbside, WARC, waste sort, and Washington State Department of Ecology data for disposal/recycling of all commodities to track trends.*

Analysis of multiple sources of information regarding material reuse, recycling, and disposal should be used to monitor trends. The evaluation of collection information, waste sorting, and recycler processing information can be valuable for assessing the success of programs that have been implemented or where programs are not having the intended impact. Tracking these data will also highlight materials to target for future programs. It is important to recognize that the data are generated by various sources, and that each contains only a portion of the overall picture of the health of the County's solid waste system.

Implementation: Ongoing.

Metric: Annual summary of recycling and diversion.

*Action A1.d) Work with haulers to establish disposal/recycling tracking for commercial accounts.*

Commercial recycling and disposal are not currently tracked by private or public haulers. TCSW will work with the haulers to develop a tracking system that will provide specific information regarding this waste stream. The tracking information would be used to assess the need for services and the effectiveness of solid-waste management plan (SWMP) programs. Note that this is not a state or local requirement for the hauler to do so.

Implementation: 2011.

Metric: Commercial waste is being tracked and reported to TCSW.

*Action A1.e) Conduct waste sort in 2009 and 2013 to quantify types of materials being disposed of and to inform SWMP implementation and updates.*

TCSW completes a waste sort every four years of materials coming into the Waste and Recovery Center (WARC) from throughout the county. The waste sort is required as a condition of the contract with the WARC operator. The waste sort depicts the composition and quantity of waste disposed of, which are reviewed to assess the success of current programs and policies and are used to inform future

planning efforts. The timing of future waste sorts should be adjusted to occur immediately before the SWMP process begins (i.e., in 2013 for the 2014 SWMP and in 2018 for the 209 SWMP).

Implementation: 2009, 2013, 2018.

Metric: Waste sorts are conducted in 2009, 2013, and 2018.

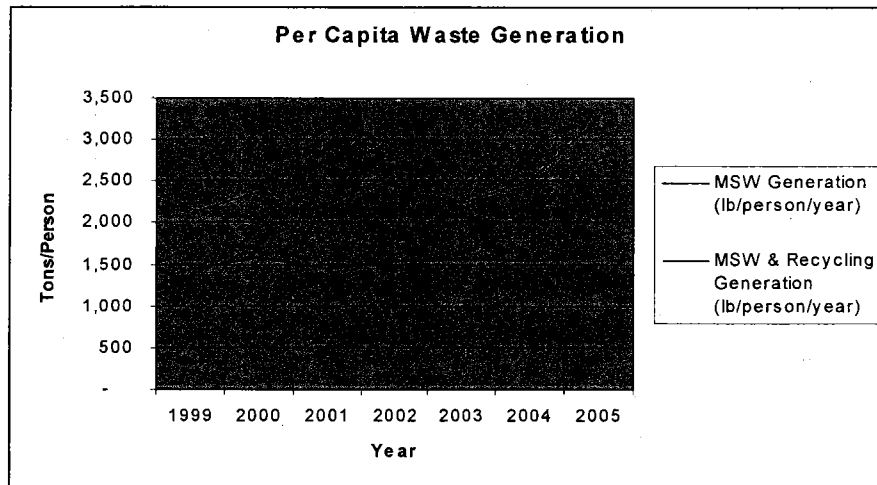
### **OBJECTIVE A2: Maintain Balance between Solid Waste Program Responsibilities and Funding**

The purpose of this objective is to provide a clear directive to TCSW and the County government officials to ensure that adequate funding is available for current and proposed solid-waste programs and facilities. Often, goals and services outlined in planning efforts do not align with staff availability or budgets. This also applies to the need to forecast capital improvements and adjust solid-waste rates to provide the required funding. Likewise, it is important for the public to understand the connection between funding, the availability of TCSW resources, and attainment of SWMP goals.

*Action A2.a) Evaluate rates relative to solid waste, programs, staffing levels, and capital improvements to ensure achievement of the goals of this plan.*

Implementation: Ongoing.

Metric: Balanced budget, staff time, and program needs.



### **OBJECTIVE B1: Provide Adequate System Capacity as Needed**

The primary mission of TCSW is to ensure that the residents of Thurston County are provided with adequate opportunities to manage waste materials in order to protect the health of the community and the environment. TCSW must provide the capacity

in the system to dispose of all waste that is generated. TCSW currently meets these needs by providing a system that includes a transfer station and several satellite drop-box facilities (see Section 2 of the System Assessment), and by offering recycling services to reduce the amount of waste that is landfilled. The per capita waste generation rate in the county has increased at an average of 3 percent per year since 1999. TCSW has established the goal of reducing waste generation; however, the County must be prepared for long-term increases in waste handling, while also handling the materials economically.

*Action B1.a) Complete facility needs analysis.*

A facility needs assessment should be prepared to assist TCSW in planning for the future development of solid-waste and recycling facilities. The study should evaluate the financial impact of improvements to the existing transfer facility at the WARC versus locating a new facility in the southern part of the county. The evaluation should consider siting, construction, operation, maintenance, and waste transportation costs associated with various options. The study may also include alternative grading criteria, such as waste-handling efficiency or carbon emissions. The analysis should consider the cost along with the current waste generation referenced in the Planning Tool developed for the System Assessment (see System Assessment, Figure 6-1).

Implementation: 2009.

Metric: Assess current need for additional waste- and/or recyclables-handling capacity at the WARC or a new location.

*Action B1.b) Explore feasibility for creation of Intergovernmental Agreement (IGA) for use of the Centralia Transfer Station or jointly site a new facility to provide additional waste/recycling-handling capacity.*

An IGA with Lewis County for the use of the Centralia Transfer Station under non-emergency situations could allow TCSW to alleviate the pressure on the transfer station at the WARC by routing collection vehicles or residential users from south-Thurston County to the Centralia Transfer Station. TCSW may also consider a discussion of jointly siting a new regional recycling and transfer facility with Lewis County and/or other neighboring counties to partially defray development costs. The regional facility could provide services that are currently unavailable, such as C/D recycling and supplemental transfer capacity for disposal.

Implementation: 2010.

Metric: Conduct a regional discussion of solid-waste capacity and recycling needs with Lewis County and/or other neighboring counties.

**OBJECTIVE B2: Restructuring the WARC to Decrease Self-Hauler Traffic Congestion and Stimulate Reduction, Reuse, and Recovery**

The WARC has been experiencing severe traffic congestion over the past several years, as documented in Section 4 of the System Assessment. The traffic situation at the WARC can be improved through methods that will focus on increased reduction, reuse, and recovery of materials. Improvements at the WARC will also result in increased safety for users of the facility.

*Action B2.a) Separate commercial haulers and self-hauler systems.*

Traffic congestion at the WARC is generally the result of high volumes of self-haulers. The self-haulers generally account for less than 15 percent of the material tonnage received, and more than 85 percent of the total transactions. Commercial collection vehicles account for 75 percent of the waste and make up only 15 percent of the transactions at the scale houses. As a result of the congestion caused by self-haulers, the efficiency of commercial collection vehicles is severely impacted, resulting in reduced system capacity. Eliminating self-hauler and commercial hauler interactions at the scales and routes in the facility will improve the efficiency of the commercial haulers using the facility and will potentially increase the capacity of the transfer station. Improving the commercial haulers' use of the facility may result in lower curbside rates, encouraging higher curbside service participation county-wide.

Implementation: 2011.

Metric: Construct separate entrances for self-haulers (who do not hold accounts) and commercial haulers (account holders) to reduce traffic congestion for the largest volume of waste entering the facility.

*Action B2.b) Modify existing public Z-wall to a "resource recovery" concept with voluntary recycling.*

Providing recycling opportunities along with the disposal option has been shown to increase recovery at several NW transfer facilities. The increased recovery of recyclables in the paid-use area will help to offset the recycling cost for these materials and would allow self-haulers to deposit materials in a single location rather than in several different locations. Expansion of the Z-wall facility may be required in order to offer the "resource recovery" concept without a reduction in the capacity of the facility.

Implementation: 2010.

Metric: Complete pilot in 2009 and initiate full-scale operation in 2010.

*Action B2.c) Create signage and literature for WARC users.*

Simplification of signage at the WARC for self-haulers would improve navigation through the facility. Improved signage would reduce confusion and congestion in the facility. TCSW may also consider the placement of signage in the queue line to advertise programs.

Implementation: 2009.

Metric: The County has reevaluated self-hauler signage for highest-impact placement and readability and has installed revised signage.

*Action B2.d) Establish a transaction fee to cover administration cost (scale house and billing).*

Transaction fees should be assessed to all facility users to cover the full cost of the transaction, including staffing, credit card fees, and equipment.

Implementation: 2011.

Metric: The County has established a transaction fee to cover the full cost of the individual transaction.

*Action B2.e) Increase minimum weight for the transaction basis.*

Establishing a minimum weight for the transaction basis raises the financial incentive for self-haulers to accumulate more material before going to the WARC, thus reducing the number of transactions.

Implementation: 2009.

Metric: Evaluate and establish a new minimum-weight basis for the scale house transaction.

*Action B2.f) Accept credit and debit payment.*

Most public users would prefer to be able to use credit or debit cards for payment. This would reduce the individual transaction time expected for the outbound transaction, eliminating the need for checks.

Implementation: 2009.

Metric: Scale houses accept credit and debit card payments.

*Action B2.g) Round up transaction charges to the nearest \$1.*

The current fee system calculates the total charge on a decimal ton basis, often resulting in the need to maintain coins for change. The coins must be stored on site and can become problematic if insufficient amounts are available on a weekend.

Implementation: 2009.

Metric: The County has evaluated and implemented rounding of the facility usage charge.

**OBJECTIVE B3: Increase Diversion at WARC by Operators**

Waste-diversion operations are required in the transfer station operations contract and the yard-waste-composting contracts. The WARC operators are responsible for all back-end recovery of recyclable material (after disposal at the WARC); the County should review alternate methods for recovery of materials at the WARC.

*Action B3.a) Amend operation and disposal contracts for increased diversion opportunities.*

TCSW should review and amend the operation and composting contracts to increase the diversion of materials from the waste stream at the WARC. The update should include administrative, operational, and financial considerations in the contracts.

It should be noted that the preferred method of material recovery is separation before processing at the transfer station. The transfer station operations contract already requires recovery of 5 percent of the incoming material using the WARC sort line. Simply increasing the required recovery percentage may have the unintended consequence of reducing the capacity of the transfer station, because the sorting process slows the overall handling speed for the waste. Operational impacts of anticipated changes should be thoroughly discussed with the contractor before implementation.

Implementation: 2010.

Metric: Review and amend operation and disposal contracts for diversion opportunities.

**OBJECTIVE B4: Increase Recycling by Expanding Rochester and Rainier Drop-Box Services**

Users of the drop-box facilities have a reduced opportunity to recycle certain bulky materials because of the remote nature of these facilities. These users are often required to throw easily recycled material into disposal drop boxes because there are no recycling containers for these materials or they will not fit in the provided recycling bins (e.g., yard waste, bulky metal items).



*Action B4.a) Add yard waste to drop-box sites and charge accordingly.*

Yard-waste containers at the Rochester and Rainier drop-box facilities would be consistent with the level of service provided throughout the rest of the county. Material from the drop box could be direct-hauled to the Silver Springs composting facility and weighed on their scales.

Yard-waste composting would also offer rural residents an alternative to burning yard waste, resulting in an improvement to air quality.

Implementation: 2011.

Metric: Implement yard-waste services at Rochester and Rainier.

*Action B4.b) Add bulk recycling (appliances, electronics, large metal, C/D) at drop-box sites.*

Recycling of large, bulky items is currently limited to the WARC facility, forcing residents to travel to the WARC or to inappropriately throw away items that should be recycled. Drop-off areas for these large-sized items would result in proper separation of appliances, large metal, C/D, and electronics, and may also reduce the toxicity of the waste stream.

Implementation: 2011.

Metric: Implement bulk recycling service at Rochester and Rainier drop-box facilities.

**OBJECTIVE C1: Increase Community Education and Program Development**

Increasing community outreach and education is an ongoing priority for the County. While this objective is of high importance, it is difficult to measure its direct impact on total waste landfilled. Therefore, this objective cannot be directly correlated with general disposal reduction but can be tracked as individual efforts.

*Action C1.a) Expand general education and outreach through media, presentations, events, billing inserts, etc., for residential, commercial, and multifamily sectors.*

The County continues to enhance and develop programs and outreach opportunities for the residential and commercial sectors through a variety of media types.

Implementation: Ongoing.

Metric: Increase number of contacts made each year.

*Action C1.b) Increase number of school presentations.*

TCSW intends to increase the number of school presentations over the next planning cycle, which will lead to an increased number of schools needing assistance with full program development and implementation.

Implementation: 2010.

Metric: Number of presentations, percentage increase over previous year.

*Action C1.c) Increase assistance to schools with development, startup, and maintenance of waste-diversion programs.*

Assistance to schools is currently limited by staff availability. Increasing school-oriented programs will require additional staff time but will provide opportunities for education and general waste reduction.

Implementation: 2011.

Metric: Number of schools with active waste diversion programs, percentage increase over previous year.

**OBJECTIVE C2: Increase Reuse and Recycling Partnership Opportunities**

At the WARC and various locations in Thurston County, partnerships currently exist with private and nonprofit organizations to collect and recycle or reuse various types of materials. These organizations support the mission of TCSW and fill a valuable function in the solid-waste system.

*Action C2.a) Promote private reuse and recycling locations and develop private-sector / government partnerships for sites and programs.*

Promotion of the private and nonprofit reuse/recycling locations will increase awareness among county residents and foster more use of these facilities as an alternative to disposal. The potential for a public/private partnership may also be beneficial for establishing a facility that can fulfill a specific need in the solid-waste system, such as a C/D recycling facility.

Implementation: Ongoing.

Metric: Private and nonprofit reuse and recycling organizations are actively promoted as part of the solid-waste system: public/private partnerships are evaluated as opportunities arise.

### **OBJECTIVE C3: Increase Commercial Recycling Participation**

It is important for TCSW to implement programs that will increase commercial recycling participation. Commercial recycling is not mandated or regulated in Thurston County. Participation in voluntary programs is limited, primarily because of the cost of service. Likewise, commercial recycling services differ from residential, which can be frustrating and confusing for the public because they have to learn different rules for recycling at home and at work. National averages indicate that approximately 40 percent of a municipality's waste and recycling materials is generated at work (commercial, industry, and governmental), showing that attention to this sector can have a significant impact on the amount of material disposed of.

#### *Action C3.a) Form and facilitate a Business Recycling Focus Group.*

TCSW will actively support efforts by business associations or local agencies to organize a Business Recycling Focus Group. The group should include representatives from a variety of local businesses, waste haulers/recyclers, and County and city waste management staff. The group should meet several times per year to discuss needs, opportunities, and barriers to recycling in Thurston County. TCSW can also participate in the forum to educate business leaders on local and national waste issues that are relevant to the group.

Implementation: 2010.

Metric: TCSW actively supports business recycling focus groups in the county.

#### *Action C3.b) Work with hauler to provide material commingling in the same manner as the residential mix where applicable (where there is not a large amount of paper) for program consistency, cost effectiveness, and space savings.*

Commercial businesses can benefit from receiving the same commingled recycling service as that offered to residents. Exploring opportunities to provide this service where appropriate will contribute to the achievement of waste-reduction goals. Consistency between residential and commercial recycling services will allow residents to follow the same rules at work and at home. Consistency must be balanced with the need for clean, recyclable material and available technology to sort recyclables before recycling. Establishing separation for certain high-volume materials that a certain type of business may produce would help the recycler meet its needs for collection of certain high-grade recyclables streams. TCSW does not currently have the authority related to commercial recycle collection.

Implementation: 2012.

Metric: Commercial recycling haulers offer commingled collection services.

*Action C3.c) Implement a business assistance program.*

TCSW will implement a business assistance program by offering waste audits or guidance for waste self-audits to Thurston County businesses. TCSW supports existing business programs such as Thurston County Chamber of Commerce Green Business Awards Program and LeMay Enterprises, Inc.'s (LeMay) Certified Green Program and will promote these programs as part of its business assistance.

Implementation: 2010.

Metric: Provide waste audits and/or guidance for self-audits to businesses upon request.

*Action C3.d) Consider mandatory commercial recycling if the recycling goal of a 15% increase is not met.*

If a commercial recycling goal reflecting a 15% increase is not met, a regulatory mechanism will be evaluated for the next planning period to meet SWMP goals.

Implementation: 2014

Metric: Review mandatory commercial recycling programs if goals are not met

**OBJECTIVE C4: Increase Consistency for Recyclables Collection County-Wide**

Increasing consistency between recycling and waste disposal throughout the county will increase recycling participation and waste-reduction opportunities. This is also an issue being addressed at a regional level by the Department of Ecology.

*Action C4.a) Work with private haulers and City of Olympia to achieve consistency for recyclables collection among all jurisdictions for residential and commercial accounts to extent practical.*

Implementation: 2012/2013.

Metric: Consistent recycling and disposal services are offered throughout Thurston County.

**OBJECTIVE C5: Increase the Effectiveness of E-Waste Recycling Programs**

In 2006, the State of Washington passed Engrossed Substitute Senate Bill 6428 (ESSB 6428) to establish convenient, safe, and environmentally friendly recycling of specified electronic products (televisions, computer monitors, laptops, and desktop computers) beginning January 1, 2009. The financial burden of recycling these products rests primarily on the producers of the material, with the objective that they

will manufacture less toxic and more easily recycled products over time. TCSW intends to support and increase these efforts county-wide.

*Action C5.a) Evaluate and implement, as needed, additional recycling drop-offs for e-waste, with consideration of products not included in the producer take-back programs.*

ESSB 6428 does not cover all electronic products manufactured or sold in the state; TCSW will consider opportunities to provide additional collection services for these materials. Opportunities for reimbursement funding through manufacturers' take-back programs should also be pursued through the Product Stewardship Council.

Implementation: 2011.

Metric: Adequate opportunities exist in Thurston County for residents to recycle all e-waste.

### **OBJECTIVE C6: Increase Advocacy for Policy Changes to Improve Waste Reduction and Recycling**

The purpose of this objective is to define policy and programs outside of TCSW jurisdiction that play an important role in waste management in the county and state-wide. TCSW intends to promote these programs and collaborate with other entities to implement the following actions.

*Action C6.a) Promote product stewardship policies.*

Product stewardship policies, such as those outlined in ESSB 6428, support waste-reduction goals by diverting waste from the landfill back to the producer. Likewise, it requires the producer to consider the durability and recyclability of its products since it is now responsible for all end-of-life management. Product stewardship also relieves the public of the financial responsibility for disposal of commodities once the useful life of these products has expired. Promoting product stewardship is an important objective of the State of Washington's Beyond Waste Plan and will be promoted by TCSW throughout the county.

Implementation: Ongoing.

Metric: Percentage increase in product take-back policies.

*Action C6.b) Work with other counties to promote revisions to WUTC process (local control of rate review, etc).*

The Washington Utilities and Transportation Commission (WUTC) currently regulates solid-waste utility rates for residential services throughout Washington. The process affords counties little opportunity for input during the rate review process or

with regard to quality of service that is provided. The process also limits the ability of the counties to require detailed information of certificated haulers, except through County ordinance.

Implementation: Ongoing.

Metric: Regular participation in discussions of WUTC process revisions with other Washington counties, and advocacy of policy revision.

*Action C6.c) Collaborate with building departments to encourage and promote green building standards and the use of C/D recycling plans.*

A significant portion of materials and resources goes into the construction and operation of buildings. Green building standards often include recycling plans for C/D during construction and require the use of recycled building materials, as well as recycling and waste-management plans for the operation of the building. In the county, C/D materials make up approximately 23 percent of the overall waste stream and represent a significant opportunity to reduce total waste landfilled. For this reason, TCSW will actively advocate the requirement of C/D recycling plans during construction as part of the building permit process, as well as the use of green building techniques generally. Since building permits are within the jurisdiction of local building departments, TCSW will collaborate to develop this policy with city and county departments and will provide support as necessary for program development and implementation.

Implementation: 2012/2013.

Metric: Construction recycling plans are required by city and/or county building departments as a requirement for obtaining a building permit.

*Action C6.d) Consider mandatory C/D recycling deposits if the recycling goal of a 15% increase is not met.*

If the C/D recycling objective of a 15% increase is not met, a regulatory mechanism will be considered for the next planning period to meet SWMP goals. C/D recycling deposits would be required to pull a building permit, with the deposit returned after evidence of achieving the recycling goal, or a prorated portion for partial compliance, is provided.

Implementation: After 2014.

Metric: Consider mandatory C/D recycling deposits if goals are not met.

## **OBJECTIVE C7: Increase Information for Reduction, Reuse, Recycling, and Buying Recycled**

The County intends to impact waste reduction by providing to the public information and resources for reuse and recycling opportunities, environmentally preferable purchasing, and models of increasing sustainable operations.

*Action C7.a) Serve as an example by implementing Thurston County's Sustainability Policy.*

The County recently adopted a sustainability policy that directs it to become a highly visible model for the county's businesses, citizens, and local government by incorporating environmentally sustainable practices into its operations and services. Key components of this strategy include minimization of impacts of the buildings and transportation used by city employees, reducing and recycling materials, procuring resources with little impact on human health and the environment, and encouraging energy conservation and efficiency. Implementation of this strategy will promote waste reduction in the county and will also provide a model for others to emulate.

Implementation: 2010.

Metric: County departments comply with the sustainability policy.

*Action C7.b) Provide Web-based resources and implementation strategies for local jurisdictions and businesses to use as a template.*

The County will provide Web-based resources and models focusing on recycling and reuse opportunities and sustainability programs and models to be used by the public and private sectors. Examples of these resources include the County's sustainability policy, environmentally preferable purchasing policies, and 2Good2Toss.

Implementation: 2010.

Metric: Reduction and reuse information is available and actively promoted.

## **OBJECTIVE C8: Increase Residential Curbside Participation and Recycling**

Curbside waste and recycling collection services is currently available countywide but is not mandatory. Residents that do not subscribe to curbside service self-haul trash to county collection facilities. As described in Action Item B2.a, traffic congestion at the WARC is generally the result of high volumes of self-haulers which account for 85% of the transactions.

Households that subscribe to curbside trash collection pay for and automatically receive recycling service. It is logical to assume residents would recycle more of their waste if using curbside service as opposed to self-hauling.

Reducing the number of residential self-haulers would decrease demands on the facility and increase residential recycling at the curb.

*Action C8.a) Evaluate mandatory residential curbside trash and recycling collection if the number of self-haulers does not decrease by 5%.*

If the number residential self-haulers is not reduced through other incentives and mechanisms, a regulatory mechanism will be considered for the next planning period. Mandatory waste and recycling service county-wide would ensure reduced traffic at the WARC and provide all residents of the county with convenient recycling service.

Implementation: After 2014.

Metric: Consider mandatory collection throughout the county if residential self-haul traffic is not reduced by 5% .

### **OBJECTIVE D1: Increase Opportunities for Organics Recycling**

Increasing opportunities for recycling of organics (which are a large portion of the waste stream) is high on the County's list of priorities for the next five years. Capitalizing on these opportunities will help reduce overall waste landfilled per capita and will increase the total quantity of material recycled and the potential for producing additional recycled end products such as compost.

*Action D1.a) Establish use of WARC as food-waste transfer site.*

To effectively manage organics waste in the county, a transfer site is required. The transfer site allows residential and commercial collection vehicles to offload their collected material in a central location, where it is then reloaded into larger-capacity transfer trucks for delivery to the composting facility. Without a transfer site, the economics of the service quickly become unfavorable.

Implementation: 2009.

Metric: The WARC acts as the transfer point for all collected organic materials before transfer to composting or energy-recovery facilities.



*Action D1.b) Add food waste to curbside yard debris collection for residents.*

The composting facility currently receiving Thurston County's yard waste (Silver Springs) is permitted to manage food waste in addition to yard debris. Several jurisdictions in Washington have successfully implemented food-waste composting by allowing residents to deposit food waste in the yard-waste collection containers. Implementation of this type of program county-wide would allow TCSW to take advantage of existing infrastructure to manage this material, reducing per capita disposal.

TCSW intends to provide resources and information to residents regarding organic materials that may be added to yard debris for composting.

Implementation: 2009.

Metric: Implementation of education and outreach program. Track participation and tonnage.

*Action D1.c) Implement food-waste collection program at schools and businesses; assist with setup and training.*

TCSW's commercial food-waste pilot program, currently available to certain institutional and commercial businesses, will be evaluated and adapted for large-scale implementation over the next planning period. TCSW will provide assistance in startup and education for these programs.

Implementation: 2014.

Metric: Full-scale implementation of commercial food waste program. Track participation and tonnage

**OBJECTIVE E1: Increase C/D Recovery**

The amount of C/D in the waste stream can be decreased by enhancing the visibility of the C/D program, improving C/D recovery opportunities, and increasing the yield of C/D recovery operations.

The following actions can be implemented to achieve TCSW's objective of increasing county-wide C/D recovery:

*Action E1.a) Evaluate potential locations and partnerships for a regional C/D recovery facility.*

Local jurisdictions and businesses have indicated a desire to attract a one-stop C/D processing facility, similar to Recovery One in Tacoma. TCSW should consider the potential feasibility of and development options for this type of facility. The facility could be publicly or privately developed. Potential locations should be considered

that would allow the facility to serve as a regional processor. Other potential sites could include Olympia, since developing a C/D facility somewhere in the county is a goal of its plan. TCSW could also encourage a partnership between another contractor and LeMay to develop the facility at the Pacific Disposal site in Lacey. A regional facility could potentially be sited in or could additionally serve Mason, Lewis, South Pierce, and/or Grays Harbor counties.

Implementation: 2010.

Metric: Complete evaluation for C/D processing facility.

*Action E1.b) Establish C/D rates at the WARC to encourage mixed and source-separated C/D recycling.*

Establishing a drop-off rate for mixed recyclable C/D that is lower than municipal solid waste, and a second rate for source-separated C/D commodities that is lower than for the mixed C/D, provides a financial incentive for system users to voluntarily separate C/D materials. Because construction materials tend to be heavy and cost more to dispose of, the incentive to take advantage of one of the lower rates is increased. Because tiered rates could cause the WARC to compete with a new C/D facility, this action should be considered in conjunction with Action No. C1.a above.

Implementation: 2011

Metric: Track and compare C/D and source-separated C/D using the gate data on an annual basis and against waste characterization data (2009 and 2013).

*Action E1.c) Increase C/D recovery reimbursement to facility operator.*

The current contracts for the operation of the WARC and for the transport and disposal of waste from the WARC are both held by the same contractor team. The facility operation contract provides an incentive payment equal to 30 percent of the avoided disposal fee for exceeding the minimum recovery requirement. Because both parties are compensated for waste managed under each contract, it is in the financial interest of the contractors to handle waste under both contracts (transfer and disposal). To strengthen the incentive under the transfer station contract to recover C/D recyclables from the waste stream, TCSW could increase the reimbursement such that similar financial benefit occurs under both scenarios, at a minimum, or that the contractor team is rewarded more for recovered than for disposed-of materials. Another opportunity may be to establish a profit-sharing program from the sales of recovered materials, which would account for current market value of various materials.

Implementation: 2011.

Metric: Compare recycled quantities of C/D before and after the contract incentive has been modified.

**OBJECTIVE E2: Increase Waste Reduction, Reuse, and Recycling for New Buildings and Building Remodels**

Only a modest amount of C/D debris is reused because it is generally less expensive to purchase new than to purchase used or recycled building materials. Reduction of waste and increase in reuse and recycling in building construction by promoting opportunities and resources will provide more material and market demand to alter this trend.

*Action E2.a) Promote available reuse opportunities and resources to the building community.*

The general slowdown in the construction market has slowed business to the point that builders groups (e.g., the Master Builders and Eco Builders Guild) are willing to participate in discussions to develop programs that they can implement to meet the new demand for “greener” building practices and waste reduction. By working with builders during the lower levels of construction activity, TCSW and jurisdictions may be able to more effectively make the waste-reduction programs mainstream and work out any challenges before the level of construction activity rises again.

This objective is mutually supportive of objective R7 b., which provides Web-based resources for the community, including access to reuse opportunities such as Craigslist and 2Good2Toss.com.

Implementation: 2011.

Metric: C/D recycling and reuse information is readily available to residents and the building community. Educational programs have been implemented.



# APPENDIX C

## COMPLIANCE CHECKLIST



| Plan Requirements   | Plan Location   |
|---|---|
| 1) A detailed inventory and description of all existing solid-waste-handling facilities, including an inventory of any deficiencies in meeting current solid-waste-handling needs.  | System Assessment<br>Sections 2.7, 4.3, and 4.4   |
| 2) The estimated long-range needs for solid-waste-handling facilities projected 20 years into the future.   | System Assessment<br>Section 3<br>Section 6   |
| 3) A program for the orderly development of solid-waste-handling facilities in a manner consistent with the plans for the entire county, which shall: <ul style="list-style-type: none"> <li>(a) Meet the minimum functional standards for solid-waste handling adopted by the department and all laws and regulations relating to air and water pollution, fire prevention, flood control, and protection of public health;</li> <li>(b) Take into account the comprehensive land use plan of each jurisdiction;</li> <li>(c) Contain a six-year construction and capital acquisition program for solid-waste-handling facilities; and</li> <li>(d) Contain a plan for financing both capital costs and operational expenditures of the proposed solid-waste management system.</li> </ul>                       | Action Plan<br>Section 3.2, Table 3-2<br>WUTC Cost Assessment   |
| 4) A program for surveillance and control.  | See section 2.4   |
| 5) A current inventory and description of solid-waste collection needs and operations within each respective jurisdiction, which shall include: <ul style="list-style-type: none"> <li>(a) Any franchise for solid-waste collection granted by the WUTC in the respective jurisdictions, including the name of the holder of the franchise and the address of his or her place of business and the area covered by the franchise;</li> <li>(b) Any city solid-waste operation within the county and the boundaries of such operation;</li> <li>(c) The population density of each area serviced by a city operation or by a franchised operation within the respective jurisdictions;</li> <li>(d) The projected solid-waste collection needs for the respective jurisdictions for the next six years.</li> </ul> | System Assessment<br>Sections 2.1, 2.6, 2.7, and 2.8<br><br>SWMP Appendix D<br><br>SWMP Appendix E<br><br>System Assessment<br>Figure 3-1 and 3-2<br><br>Toward Zero Waste<br>Chapter 10<br>Rest of county is private<br>collection contracts |
| 6) A comprehensive waste-reduction and recycling element that, in accordance with the <i>priorities</i> (listed in next cell) established in Revised Code of Washington (RCW) <u>70.95.010</u> , provides programs that (a) reduce the amount of waste generated, (b) provide incentives and mechanisms for source separation, and (c) establish recycling opportunities for the source-separated waste.  | System Assessment<br>Sections 2.5, 2.7, 2.8, 4.1, 4.2, 4.3, 4.4, 5.1, 5.2, 5.3, and 5.4<br>Action Plan<br>Table 3-1   |

| Plan Requirements   | Plan Location   |
|---|---|
| <p>7) The waste-reduction and recycling element shall include the following:</p> <ul style="list-style-type: none"> <li>(a) Waste-reduction strategies;</li> <li>(b) Source-separation strategies, including: <ul style="list-style-type: none"> <li>(i) Programs for the collection of source-separated materials from residences in urban and rural areas. In urban areas, these programs shall include collection of source-separated recyclable materials from single and multiple family residences, unless the department approves an alternative program, according to the criteria in the planning guidelines. Such criteria shall include: Anticipated recovery rates and levels of public participation, availability of environmentally sound disposal capacity, access to markets for recyclable materials, unreasonable cost impacts on the ratepayer over the six-year planning period, utilization of environmentally sound waste-reduction and recycling technologies, and other factors as appropriate. In rural areas, these programs shall include but not be limited to drop-off boxes, buy-back centers, or a combination of both, at each solid-waste transfer, processing, or disposal site, or at locations convenient to the residents of the county. The drop-off boxes and buy-back centers may be owned or operated by public, nonprofit, or private persons;</li> <li>(ii) Programs to monitor the collection of source-separated waste at nonresidential sites where there is sufficient density to sustain a program;</li> <li>(iii) Programs to collect yard waste, if the county or city submitting the plan finds that there are adequate markets or capacity for composted yard waste within or near the service area to consume the majority of the material collected; and</li> <li>(iv) Programs to educate and promote the concepts of waste reduction and recycling;</li> </ul> </li> <li>(c) Recycling strategies, including a description of markets for recyclables, a review of waste-generation trends, a description of waste composition, a discussion and description of existing programs and any additional programs needed to assist public and private sector recycling, and an implementation schedule for the designation of specific materials to be collected for recycling, and for the provision of recycling collection services.</li> </ul> | <p>System Assessment<br/>Sections 5.1 through 5.4<br/>System Assessment<br/>Sections 5.1 through 5.4</p> <p>System Assessment<br/>Sections 2.5, 5.1 through 5.4<br/>Action Plan<br/>Table 3-1</p>     |
| <p>(d) Other information the county or city submitting the plan determines is necessary.</p>  | <p>None</p>   |
| <p>8) An assessment of the plan's impact on the costs of solid waste collection. The assessment shall be prepared in conformance with guidelines established by the WUTC. The commission shall cooperate with the Washington State association of counties and the association of Washington cities in establishing such guidelines.</p>  | <p>WUTC Cost Assessment<br/>Questionnaire</p>   |
| <p>9) A review of potential areas that meet the criteria as outlined in RCW <u>70.95.165</u>. (Disposal Facility Siting)</p>  | <p>This information will be prepared during the facility site selection process when a new facility is sited. Existing facilities are permitted and therefore meet the criteria of RCW 70.95.165.</p> |





# APPENDIX D

## WASTE SERVICES CONTACT INFORMATION



## WASTE SERVICES CONTACT INFORMATION

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### **City of Olympia Public Works**

924 7<sup>th</sup> Ave. SE, Suite A  
PO Box 1967  
Olympia WA 98507

New Service: (360) 753-8362

General: (360)753-8588

### **LeMay, Inc.**

#### **Cooper Point, Steamboat Island**

Butler's Cove - (360) 923-0111 or e-mail [pacificdisposal@lemayinc.com](mailto:pacificdisposal@lemayinc.com)

#### **Yelm/Rainier**

Rural Refuse - (360) 923-0111 or e-mail [pacificdisposal@lemayinc.com](mailto:pacificdisposal@lemayinc.com)

#### **Tenino, Rochester and the rest of southwest Thurston County**

Joe's Refuse - (360) 736-4769 or e-mail [centraliaoffice@lemayinc.com](mailto:centraliaoffice@lemayinc.com)

#### **Bucoda**

Call the Town of Bucoda to arrange for service with LeMay, 278-3525

#### **Lacey, Tumwater and remaining areas of unincorporated Thurston County**

Pacific Disposal - (360) 923-0111 or e-mail [pacificdisposal@lemayinc.com](mailto:pacificdisposal@lemayinc.com)

#### **Summit Lake**

Pacific Disposal - (360) 923-0111 or e-mail [pacificdisposal@lemayinc.com](mailto:pacificdisposal@lemayinc.com)

# APPENDIX E

WASTE SERVICES MAP (WUTC DISTRICTS)



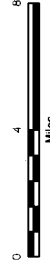
**Figure**  
**Thurston County**  
**Solid Waste**  
**Management Plan**  
 Thurston County,  
 Washington  
**DRAFT**

**Legend**

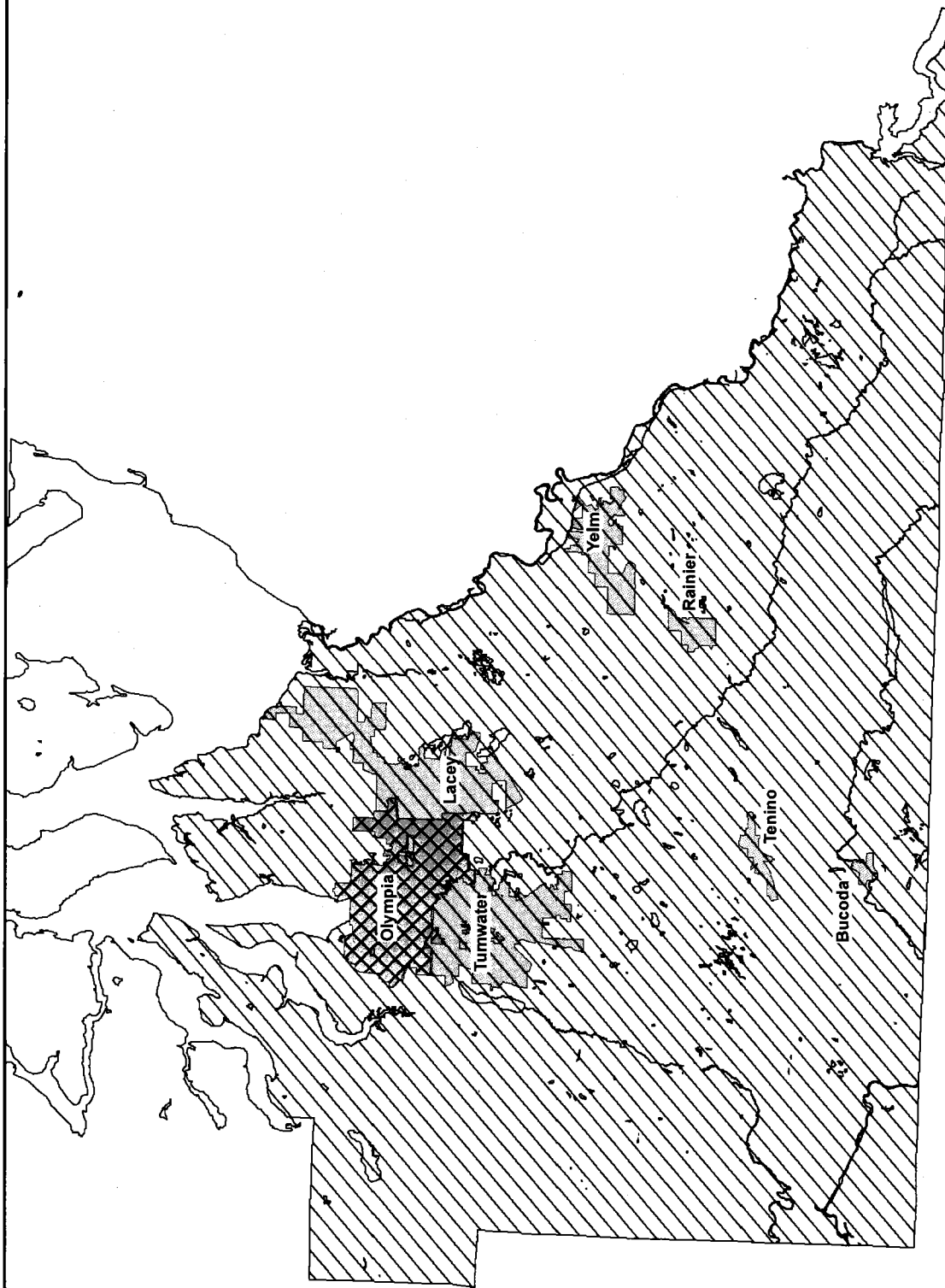
 City franchised  
waste collection

 LeMay Inc.  
UTC certificate number:  
G0000098

Sources: County and City Data (2008) obtained from:  
Thurston County Geodata Center



MAUL FOSTER ALONGI



# APPENDIX F

## COST ASSESSMENT



# COST ASSESSMENT QUESTIONNAIRE

Please provide the information requested below:

**PLAN PREPARED FOR THE COUNTY OF:** Thurston

**PREPARED BY:** Maul Foster & Alongi, Inc. (Erik Bakkom) (360) 694-2691  
Thurston County Solid Waste (Scott Schimelfenig) (360) 357-2491

**DATE:** February 15, 2012 (Update)  
May 19, 2009

## DEFINITIONS

*Please provide these definitions as used in the Solid Waste Management Plan and the Cost Assessment Questionnaire.*

Throughout this document:

YR.1 shall refer to **2009**.

YR.3 shall refer to **2011**.

YR.6 shall refer to **2014**.

Year refers to (circle one) **calendar** (Jan 01 - Dec 31)  
**fiscal** (Jul 01 - Jun 30)

**Preparation Note:**

The Solid Waste System Assessment that contains Thurston County's population and waste projections was completed at the end of 2007. This Solid Waste Management Plan (SWMP) was begun in early 2008 and is based on the projections contained within the System Assessment. Beginning in 2007 and continuing through 2008 and 2009, Thurston County and the rest of the nation have slid into a serious recession. The recession has led to a significant change in waste generation habits, reducing disposal volumes by 10 to 20%.

The actions recommended within the SWMP are meant to generally guide activities conducted by Thurston County Solid Waste, however they must also be regularly reviewed and adjusted based on current needs and funding. Due to the recession and the decrease in waste volume, revenues for the department have decreased. However, the decreased volume has also reduced the need for additional disposal capacity. These changes do not require a revision of the overall SWMP and/or System Assessment. The schedule for the capital facilities recommended by the System Assessment needs to be considered to be longer than what is shown in the planning tool (System Assessment, Figure 6-1) due to the decreased waste tonnage. The future need for a new transfer station will be evaluated annually by comparing the year-end tonnage to the planning tool.

The waste projections contained in this Cost Assessment have been revised from the System Assessment to reflect current conditions and are based on the year end data for 2008. However, it is important to note that it is not possible to evaluate the current trend with a single year of information. This stresses the importance of the County's ability to utilize the recommendations of the SWMP with consideration to the current staffing and funding requirements, which are changing continually.

1. **DEMOGRAPHICS:** *To assess the generation, recycling and disposal rates of an area, it is necessary to have population data. This information is available from many sources (e.g., the State Data Book, County Business Patterns, or the State Office of Finance and Management).*

**1.1 Population**

- 1.1.1 *What is the **total** population of your County/City?*
- 1.1.2 *For counties, what is the population of the area **under your jurisdiction?** (Exclude cities choosing to develop their own solid waste management system.)*

| <b>Population</b> | <b>Year 1<br/>(2008)</b> | <b>Year 3<br/>(2011)</b> | <b>Year 6<br/>(2014)</b> |
|-------------------|--------------------------|--------------------------|--------------------------|
| County            | 249,000                  | 261,000                  | 279,000                  |
| Jurisdiction      | 249,000                  | 261,000                  | 279,000                  |

**1.2 References and Assumptions**  
System Assessment Table 3-1

**2. WASTE STREAM GENERATION:**

- 2.1 **Tonnage Recycled** *Please provide the total tonnage **recycled** in the base year, and projections for years three and six.*
- 2.2 **Tonnage Disposed** *Please provide the total tonnage **disposed** in the base year, and projections for years three and six.*

| <b>Waste Generation</b> | <b>Year 1<br/>(2009)</b> | <b>Year 3<br/>(2011)</b> | <b>Year 6<br/>(2014)</b> |
|-------------------------|--------------------------|--------------------------|--------------------------|
| Tons Recycled           | 144,000                  | 158,000                  | 180,000                  |
| Tons Disposed           | 192,000                  | 204,000                  | 224,000                  |

**2.3 References and Assumptions**

Based on Table 3-1 of the System Assessment, middle estimate. Reflects a 2.5% reduction in waste disposal volume in 2008 vs. what was originally projected at the time of the System Assessment. Disposal projection assumes mid-range projection from System Assessment at an annual rate of increase equal to 39 lbs/ person/year.



- 3. SYSTEM COMPONENT COSTS:** *This section asks questions specifically related to the types of programs currently in use and those recommended to be started. For each component (i.e., waste reduction, landfill, composting, etc.) please describe the anticipated costs of the program(s), the assumptions used in estimating the costs and the funding mechanisms to be used to pay for it. The heart of deriving a rate impact is to know what programs will be passed through to the collection rates, as opposed to being paid for through grants, bonds, taxes and the like.*

### **3.1 Waste Reduction Programs**

- 3.1.1 *Please list the solid waste programs which have been implemented and those programs which are proposed. If these programs are defined in the SWM plan please provide the page number. (Attach additional sheets as necessary.)*

See Table 1 for solid waste reduction programs, costs, and funding.

- 3.1.2 *What are the costs, capital costs and operating costs for waste reduction programs implemented and proposed?*

See Table 1 for solid waste reduction programs, costs, and funding.

- 3.1.3 *Please describe the funding mechanism(s) that will pay the cost of the programs in 3.1.2.*

See Table 1 for solid waste reduction programs, costs, and funding.

### **3.2 Recycling Programs**

- 3.2.1 *Please list the proposed or implemented recycling program(s) and, their costs, and proposed funding mechanism or provide the page number in the draft plan on which it is discussed. (Attach additional sheets as necessary.)*

See Table 1 for solid waste recycling programs, costs, and funding.

### 3.3 Solid Waste Collection Programs

#### 3.3.1 Regulated Solid Waste Collection Programs

Fill in the table below for each **WUTC regulated** solid waste collection entity in your jurisdiction. (Make additional copies of this section as necessary to record all such entities in your jurisdiction.)

| <b>LeMay Enterprises, Inc.</b> (G Permit #98, including non-regulated contracts with Cities of Bucoda, Rainier, Tenino, and Yelm) |                   |                  |                  |
|---|-------------------|------------------|------------------|
|   | Year 1<br>(2009*) | Year 3<br>(2011) | Year 6<br>(2014) |
| <b>Residential</b>  |                   |                  |                  |
| # of Customers  | 50,808            | 53,300           | 57,100           |
| Disposal Tons Collected   | 37,385            | 40,000           | 43,800           |
| <b>Commercial</b>   |                   |                  |                  |
| # of Customers  | 2,747             | 2,900            | 3,100            |
| Disposal Tons Collected   | 79,840            | 85,400           | 93,600           |

\*As of January 1, 2009.

3.3.2 Other (non-regulated) Solid Waste Collection Programs Fill in the table below for other solid waste collection entities in your jurisdiction. (Make additional copies of this section as necessary to record all such entities in your jurisdiction.)

| <b>City of Olympia</b>  | Year 1<br>(2009*) | Year 3<br>(2011) | Year 6<br>(2014) |
|-------------------------|-------------------|------------------|------------------|
| <b>Residential</b>      |                   |                  |                  |
| # of Customers          | 12,519            | 13,100           | 14,000           |
| Disposal Tons Collected | 6,732             | 7,200            | 7,900            |
| <b>Commercial</b>       |                   |                  |                  |
| # of Customers          | 1,533             | 1,600            | 1,700            |
| Disposal Tons Collected | 22,922            | 24,500           | 26,900           |

\*As of January 1, 2009.

**3.4 Energy Recovery & Incineration (ER&I) Programs**

There are no ER&I facilities in Thurston County.

**3.5 Land Disposal Program**

There are no operational landfills in Thurston County.

**3.6 Administration Program**

3.6.1 *What is the budgeted cost for administering the solid waste and recycling programs and what are the major funding sources.*

See Table 1

3.6.2 *Which cost components are included in these estimates?*

Labor and Benefits

3.6.3 *Please describe the funding mechanism(s) that will recover the cost of each component.*

See Table 1

**3.7 Other Programs**

*For each program in effect or planned which does not readily fall into one of the previously described categories please answer the following questions. (Make additional copies of this section as necessary.)*

3.7.1 *Describe the program, or provide a page number reference to the plan.*

Existing Programs  
Compost Programs  
Hazardous Waste Programs  
E-Waste Recycling  
Landfill Post Closure

3.7.2 *Owner/Operator:* Thurston County

3.7.3 *Is WUTC Regulation Involved?*

No

3.7.4 *Please estimate the anticipated costs for this program, including capital and operating expenses.*

See Table 1

3.7.5 Please describe the funding mechanism(s) that will recover the cost of this component.

Tip fees and coordinated prevention grant

**3.8 References and Assumptions** (attach additional sheets as necessary)

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

**Table 1**  
**Thurston County Solid Waste**  
**2009 thru 2015 Fund 4030 Solid Waste Financial Plan**

|   | Actual<br>2009 | Actual<br>2010 | Budgeted<br>2011 | Estimated<br>2012 | Estimated<br>2013 | Estimated<br>2014 | Estimated<br>2015 |
|---|----------------|----------------|------------------|-------------------|-------------------|-------------------|-------------------|
| <b>Beginning Fund Balance</b>                             | \$ 3,590,700   | \$ 2,562,938   | \$ 5,125,916     | \$ 4,396,009      | \$ 5,468,558      | \$ 6,109,443      | \$ 6,414,641      |
| <b>Disposal Fees</b>                                      | \$ 15,446,225  | \$ 19,829,235  | \$ 16,212,223    | \$ 19,758,415     | \$ 19,086,937     | \$ 18,797,213     | \$ 18,860,231     |
| <b>Grants</b>   | \$ 286,632     | \$ 325,411     | \$ 50,658        | \$ 30,000         | \$ -              | \$ -              | \$ -              |
| <b>Recycling Revenues</b>                                 | \$ 65,563      | \$ 78,977      | \$ 58,250        | \$ 70,000         | \$ 70,000         | \$ 70,000         | \$ 70,000         |
| <b>Miscellaneous</b>                                      | \$ 147,358     | \$ 100,938     | \$ 320,320       | \$ 127,878        | \$ 123,093        | \$ 108,736        | \$ 108,736        |
| <b>Operating Transfers in</b>                             | \$ 50,866      | \$ 1,521,228   | \$ 8,586         | \$ 1,006,293      | \$ 1,006,293      | \$ 417,500        | \$ 752,500        |
| <b>Total Revenue</b>                                      | \$ 15,996,645  | \$ 21,855,789  | \$ 16,650,037    | \$ 20,992,586     | \$ 20,286,323     | \$ 19,393,449     | \$ 19,791,467     |
| <b>Administration</b>                                     | \$ 1,998,904   | \$ 2,599,816   | \$ 3,209,884     | \$ 3,278,109      | \$ 3,241,371      | \$ 3,223,737      | \$ 3,223,737      |
| <b>Solid Waste Capital Projects</b>                       | \$ 329,356     | \$ 2,371,722   | \$ 499,216       | \$ 1,335,500      | \$ 1,050,000      | \$ 450,000        | \$ 4,800,000      |
| <b>Planning, Conservation, Research &amp; Development</b> | \$ 117,577     | \$ 73,502      | \$ 66,061        | \$ 125,825        | \$ 125,825        | \$ 137,032        | \$ 272,032        |
| <b>Maintenance</b>  | \$ 456,394     | \$ 446,537     | \$ 373,450       | \$ 387,495        | \$ 387,495        | \$ 387,495        | \$ 387,495        |
| <b>Contracted Operations</b>                              | \$ 11,297,784  | \$ 11,227,519  | \$ 10,639,932    | \$ 11,764,937     | \$ 11,799,329     | \$ 11,835,441     | \$ 11,873,358     |
| <b>Operations Customer Service</b>                        | \$ 2,220,181   | \$ 1,824,023   | \$ 1,807,136     | \$ 1,946,297      | \$ 1,959,044      | \$ 1,972,173      | \$ 1,985,685      |
| <b>Operations General</b>                                 | \$ 43,560      | \$ 28,197      | \$ 39,882        | \$ 62,543         | \$ 62,543         | \$ 62,543         | \$ 62,543         |
| <b>Other Operating Expenses</b>                           | \$ 660,660     | \$ 710,252     | \$ 744,381       | \$ 1,019,831      | \$ 1,019,831      | \$ 1,019,831      | \$ 1,019,831      |
| <b>accrual for Vacation/Comp time</b>                     | \$ -           | \$ 11,242      | \$ -             | \$ -              | \$ -              | \$ -              | \$ -              |
| <b>Total Expenditures</b>                                 | \$ 17,024,407  | \$ 19,292,811  | \$ 17,379,944    | \$ 19,920,037     | \$ 19,645,438     | \$ 19,088,251     | \$ 23,624,691     |
| <b>Est Ending Fund Balance</b>                            | \$ 2,562,938   | \$ 5,125,916   | \$ 4,396,009     | \$ 5,468,558      | \$ 6,109,443      | \$ 6,414,641      | \$ 2,581,417      |

Notes:  
1. 2009 Solid Waste rates increased from \$80 per ton to \$100 per ton  
2. 2012 Solid Waste rates increased from \$100 per ton to \$119 per ton.

**Table 4.1.1 Facility Inventory**

| Facility Name             | Type of Facility | Tip Fee per Ton   | Transfer Cost** | Transfer Station Location | Final Disposal Location     | Total Tons Disposed  | Total Revenue Generated (Tip Fee x Tons) |
|---------------------------|------------------|-------------------|-----------------|---------------------------|-----------------------------|----------------------|--|
| Waste and Recovery Center | Transfer         | \$80              | \$49.31         | Lacey, Washington         | Roosevelt Landfill          | 190,700 <sup>a</sup> | \$15,257,700                             |
| Rochester Drop Box        | Transfer         | \$80 <sup>b</sup> | NA <sup>a</sup> | Rochester, Washington     | Roosevelt Landfill via WARC | NA <sup>b</sup>      |  |
| Rainier Drop Box          | Transfer         | \$80 <sup>b</sup> | NA <sup>a</sup> | Rainier, Washington       | Roosevelt Landfill via WARC | NA <sup>b</sup>      |  |
| Summit Lake Drop Box      | Transfer         | \$80 <sup>b</sup> | NA <sup>a</sup> | Summit Lake, Washington   | Roosevelt Landfill via WARC | NA <sup>b</sup>      |  |

<sup>a</sup>There is no additional transfer cost between the Drop Box facilities and the WARC Transfer Station because this service is included in the base cost of the Transfer Station Operation Agreement (i.e. no additional charge). All transfer costs represent the agreed to rate within the Long Haul and Disposal Agreement.  
<sup>b</sup>Thurston County charges a volume rate at the Drop Box facilities, equivalent to the per ton tip fee at the transfer station, but does not track total tons received from each drop box facility. Waste tons and revenue for the drop box facilities are included in the reported disposed quantity for the Waste and Recovery Center in line 1.

**Table 4.1.2 Tip Fee Components**

| Tip Fee by Facility       | Surcharge            | City Tax | County Tax | Transportation Cost    | Operational Cost | Administration Cost | Closure Costs |
|---------------------------|----------------------|----------|------------|------------------------|------------------|---------------------|---------------|
| Waste and Recovery Center | \$13.47 <sup>a</sup> | \$0      | \$0        | \$49.31 <sup>b</sup>   | \$8.62           | \$8.59              | \$0           |
| Rochester Drop Box        | \$13.47 <sup>a</sup> | \$0      | \$0        | \$49.31 <sup>b,c</sup> | \$8.62           | \$8.59              | \$0           |
| Rainier Drop Box          | \$13.47 <sup>a</sup> | \$0      | \$0        | \$49.31 <sup>b,c</sup> | \$8.62           | \$8.59              | \$0           |
| Summit Lake Drop Box      | \$13.47 <sup>a</sup> | \$0      | \$0        | \$49.31 <sup>b,c</sup> | \$8.62           | \$8.59              | \$0           |

<sup>a</sup> The surcharge listed represents funding for reduction, recycling, hazardous waste programs and some capital projects (refer to opening note). Future capital projects would require additional funding mechanisms.  
<sup>b</sup> Transportation cost includes long haul transportation and disposal at Roosevelt Landfill.  
<sup>c</sup> Thurston County transfer between the three drop box facilities is included in the Transfer Station Operation Contract with LeMay Enterprises, Inc. Disposal fees at the drop box facilities are based on the same per ton rate and 380 lbs/CY.

**Table 4.1.3 Funding Mechanism**

| Name of Program<br>Funding Mechanism<br>will defray costs            | Bond<br>Name | Total<br>Bond<br>Debt | Bond<br>Rate | Bond Due<br>Date | Grant Name                         | Grant Amount | Tip Fee      | Taxes | Other | Surcharge |
|--|--------------|-----------------------|--------------|------------------|------------------------------------|--------------|--------------|-------|-------|-----------|
| Transfer & Disposal<br>Operations                                    |              |                       |              |                  |                                    |              | \$14,307,000 |       |       |           |
| Administration   |              |                       |              |                  |                                    |              | \$2,121,000  |       |       |           |
| Capital Projects   |              |                       |              |                  |                                    |              | \$1,127,000  |       |       |           |
| Recycling & Reduction<br>Programs (including<br>Organics Management) |              |                       |              |                  | Coordinated<br>Prevention<br>Grant | \$216,000    | \$1,379,000  |       |       |           |
| Hazardous Waste<br>Programs  |              |                       |              |                  |                                    |              | \$606,000    |       |       |           |
|  |              |                       |              |                  |                                    |              |              |       |       |           |
|  |              |                       |              |                  |                                    |              |              |       |       |           |

**Table 4.1.4 Tip Fee Forecast**

| Tip Fee per Ton by<br>Facility | Year<br>One                  | Year<br>Two | Year<br>Three | Year<br>Four       | Year<br>Five       | Year<br>Six        |
|--------------------------------|------------------------------|-------------|---------------|--------------------|--------------------|--------------------|
|                                | Waste and Recovery<br>Center | \$80        | \$110         | \$110              | \$119 <sup>a</sup> | \$119 <sup>a</sup> |
| Rochester Drop Box             | \$80                         | \$110       | \$110         | \$119 <sup>a</sup> | \$119 <sup>a</sup> | \$119 <sup>a</sup> |
| Rainier Drop Box               | \$80                         | \$110       | \$110         | \$119 <sup>a</sup> | \$119 <sup>a</sup> | \$119 <sup>a</sup> |
| Summit Lake Drop Box           | \$80                         | \$110       | \$110         | \$119 <sup>a</sup> | \$119 <sup>a</sup> | \$119 <sup>a</sup> |

<sup>a</sup>New rates were adopted in 2010 for a four year period with a rate increase in 2010 and 2012. These rates may be revised with approval from the SWAC and the County Commissioners.

4.2 **Funding Mechanisms summary by percentage:** In the following tables, please summarize the way programs will be funded in the key years. For each component, provide the expected percentage of the total cost met by each funding mechanism. (e.g. Waste Reduction may rely on tip fees, grants, and collection rates for funding). You would provide the estimated responsibility in the table as follows: Tip fees=10%; Grants=50%; Collection Rates=40%. The mechanisms must total 100%. If components can be classified as "other," please note the programs and their appropriate mechanisms. Provide attachments as necessary.

| <b>Table 4.2.1 Funding Mechanism by Percentage</b> |           |         |        |                        |         |       |
|--|-----------|---------|--------|------------------------|---------|-------|
| <b>Year One</b>                                    |           |         |        |                        |         |       |
| Component  | Tip Fee % | Grant % | Bond % | Collection Tax Rates % | Other % | Total |
| Waste Reduction                                    | 92%       | 8%      |        |                        |         | 100%  |
| Recycling  | 76%       | 17%     |        | 7%                     |         | 100%  |
| Collection   |           |         |        |                        |         | NA    |
| ER&I   |           |         |        |                        |         | NA    |
| Transfer   | 100%      |         |        |                        |         | 100%  |
| Land Disposal                                      | 100%      |         |        |                        |         | 100%  |
| Administration                                     | 93%       |         |        |                        | 7%      | 100%  |
| Other  | 100%      |         |        |                        |         | 100%  |

NA = Not Applicable

Recycling includes composting activities

Collection Tax Rates includes recycling collection revenues (curbside recycling fee, recycling event income, and metal sales from the WARC)

| <b>Table 4.2.2 Funding Mechanism by Percentage</b> |           |         |        |                        |         |       |
|--|-----------|---------|--------|------------------------|---------|-------|
| <b>Year Three</b>                                  |           |         |        |                        |         |       |
| Component  | Tip Fee % | Grant % | Bond % | Collection Tax Rates % | Other % | Total |
| Waste Reduction                                    | 92%       | 8%      |        |                        |         | 100%  |
| Recycling  | 76%       | 17%     |        | 7%                     |         | 100%  |
| Collection   |           |         |        |                        |         | NA    |
| ER&I   |           |         |        |                        |         | NA    |
| Transfer   | 100%      |         |        |                        |         | 100%  |
| Land Disposal                                      | 100%      |         |        |                        |         | 100%  |
| Administration                                     | 93%       |         |        |                        | 7%      | 100%  |
| Other  | 100%      |         |        |                        |         | 100%  |



| <b>Table 4.2.3 Funding Mechanism by Percentage</b> |           |         |        |                        |         |       |
|--|-----------|---------|--------|------------------------|---------|-------|
| <b>Year Six</b>                                    |           |         |        |                        |         |       |
| Component  | Tip Fee % | Grant % | Bond % | Collection Tax Rates % | Other % | Total |
| Waste Reduction                                    | 92%       | 8%      |        |                        |         | 100%  |
| Recycling  | 76%       | 17%     |        | 7%                     |         | 100%  |
| Collection   |           |         |        |                        |         | NA    |
| ER&I   |           |         |        |                        |         | NA    |
| Transfer   | 100%      |         |        |                        |         | 100%  |
| Land Disposal                                      | 100%      |         |        |                        |         | 100%  |
| Administration                                     | 93%       |         |        |                        | 7%      | 100%  |
| Other  | 100%      |         |        |                        |         | 100%  |

#### 4.3 References and Assumptions

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

See Table 1.

#### 4.4 Surplus Funds

*Please provide information about any surplus or saved funds that may support your operations.*

Thurston County Solid Waste funds do not have any so-called "surplus" or "saved" funds. The Solid Waste Maintenance and Operations fund operates with "retained earnings." Retained earnings are any revenue or unspent budget funds carried over from one year to another. The first \$1.5 million of any year is designated for a Maintenance and Operations reserve. Any amount above \$1.5 million is available to be spent in future budget years as needed. The amount of retained earnings varies each year.

TCSW has four (4) reserves that are maintained within the "Reserve" fund: Post-Closure Reserve, Anticipated Expense Reserve, Construction Reserve and Transfer Station Equipment Reserve.

Post-Closure Reserve: Funds designated for the closed landfill pursuant to 173-350-600(3) with those funds obligated for maintaining all environmental systems for the closed landfill for a thirty year period.

Anticipated Expense Reserve: Funds for pilot programs and any unfunded mandates that are not within the current rates. The Anticipated Expense Reserve currently funds any costs associated with the Solid Waste Management Plan development and implementation, as well as any rate analysis work. This reserve has also in the past been used to finance unanticipated legal issues.

Construction Reserve: Funds that are set aside for construction projects and used when necessary.

Transfer Station Equipment Reserve: Pursuant to the contract with Regional Disposal Company the funds in this reserve are for the future replacement of specific equipment purchased in the original start-up of operations of the Thurston County Transfer Station in 2000.

# APPENDIX G

## INTERLOCAL AGREEMENTS

INTERGOVERNMENTAL AGREEMENT FOR THE  
THURSTON COUNTY  
2008 SOLID WASTE MANAGEMENT PLAN AND THE 2008 HAZARDOUS  
WASTE PLAN UPDATES

THIS AGREEMENT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_ by and between Thurston County, Washington, and the incorporated municipality of Tumwater which is organized under the laws of the State of Washington and are herein collectively referred to as the "Participating Municipality;"

WHEREAS, the Participating Municipality agreed, pursuant to the Solid Waste Management Act, Chapter 70.95 RCW, and the Hazardous Waste Management Act, Chapter 70.105 RCW, to participate in preparing the 2008 Thurston County Comprehensive Solid Waste Management Plan and the Local Hazardous Waste Plan, hereinafter referred to as the "Plans;" and

WHEREAS, it is to the mutual advantage of the Participating Municipality and their citizens to contract pursuant to Chapter 39.34 RCW for the purpose of providing joint county-municipality integrated solid waste and hazardous waste management programs; and

WHEREAS, the Participating Municipality have been operating under an Intergovernmental Agreement for Solid Waste Management dated April 30, 1999; and

WHEREAS, that Intergovernmental Agreement and the plans identify that the Plans shall be reviewed and revised by the Participating Municipality once every five (5) years; and

WHEREAS, the Participating Municipality have the opportunity to reaffirm their inclusion in the joint Plans;

NOW THEREFORE, for and in consideration of the mutual promises and covenants contained herein, it is agreed by the Participating Municipality hereto as follows:

1. PURPOSE OF AGREEMENT

The purpose of this Agreement is to allow the county and the participating municipality to jointly prepare and ultimately adopt an update to the joint Comprehensive Solid Waste Management Plan, pursuant to Chapter 70.95 RCW, for waste reduction, recycling, collection, transfer and disposal of solid waste generated within the boundaries of the Participating Municipality and Thurston County. This agreement also includes ultimately adopting an update to the 1998 Hazardous Waste Plan for Thurston County.

## 2. SOLID WASTE and HAZARDOUS WASTE MANAGEMENT

After adoption of the Plans by Participating Municipality, Thurston County will be the designated agent for the Participating Municipality for the administration of the Plans within Thurston County and shall have full authority to implement solid and hazardous waste management programs and services consistent with the Plans, for the Participating Municipality and the residents within the boundaries of the Participating Municipality, excluding the manner of collection and transfer of solid waste refuse within the corporate limits of those cities and towns which are the Participating Municipality. Such management shall be conducted in conformance with all state and federal laws and regulations. Included with such management shall be the carrying of public liability insurance with limits in accordance with standard practice. Thurston County shall indemnify and hold harmless the other Participating Municipalities and shall defend against any claims for personal injury or property damage arising out of Thurston County's management and operations of the solid waste programs set out under the Plan. Thurston County shall not indemnify, hold harmless, or defend any claims arising out of the actions of a Participating Municipality or any activities under a Participating Municipality's control.

Plans administration and government processes shall be set forth in more detail in the Plans as adopted.

## 3. FINANCING, FUNDS AND BUDGET

a. The costs of the Plans administration and implementation shall be administered through the County Solid Waste Fund. The fund shall be established and maintained through user fees, grants, gifts, loans and other lawful funding sources as outlined in the Plans and agreed upon between the Participating Municipality.

b. Thurston County shall continue to maintain a Solid Waste Fund as a dedicated enterprise fund within the County budget. All revenues and expenditures in connection with the Plans subject to this Agreement shall be budgeted and accounted for through this fund.

## 4. ACCOUNTING

Thurston County shall maintain accounts for the solid waste management program and the hazardous waste program in accordance with the requirements of the Washington State Auditor. Authorized representatives of any party hereto shall have the right to inspect the accounting concerning the solid and hazardous waste management programs at any reasonable time.

5. PROPERTY RIGHTS

Title to all property acquired with funds from the Solid Waste Fund shall vest in Thurston County. In the event of sale of any property acquired using the Solid Waste Fund, the proceeds from the sale shall be deposited in the Solid Waste Fund unless otherwise required by law, regulation, grant or contract.

6. ADMISSION OF NEW PARTIES

Additional municipal entities may be added to this Agreement upon such terms and conditions as the Participating Municipalities and the new party agree upon in writing.

7. EFFECT ON PRECEDING CONTRACT

This Agreement, upon its execution by all parties, supersedes that certain agreement entitled "Intergovernmental Agreement for the Thurston County 2001 Comprehensive Solid Waste Management Plan" dated April 30, 1999.

8. DURATION

This Agreement shall remain in effect for six (6) years from the effective date; or until replaced by a new intergovernmental agreement.

9. PLAN ADOPTION

The final Plan shall be adopted through Resolution of the Participating Municipality and the County. The Plan shall be reviewed and revised by the Plan Participants at least once every five (5) years following approval of the Plan by the Washington State Department of Ecology (Ecology). Any necessary revisions or amendments to the Plan will be accomplished through a process defined in the Plan.

10. EFFECTIVE DATE

This Agreement shall be effective following its execution by the Board of Thurston County Commissioners after execution by the Participating Municipality; and following the recording of this Agreement with the Thurston County Auditor, as required by RCW 39.34.

11. TERMINATION

After the Plan has been prepared and submitted to Ecology for final review, any Participating Municipality may terminate its involvement in this Agreement within 30 days following the 45 day final review period by Ecology. Should any Participating Municipality not agree to adoption of the Plan, the Participating Municipality will not adopt the Plan and shall immediately begin preparing its own Municipal Solid Waste Management Plan for approval by Ecology in full accordance with all Plan regulations and guidelines.

This Agreement has been executed by each party on the date set forth below.

THURSTON COUNTY

CITY OF TUMWATER

\_\_\_\_\_  
Chairman, Board of County Commissioners

  
\_\_\_\_\_  
Mayor

Date: \_\_\_\_\_

Date: 2/21/08

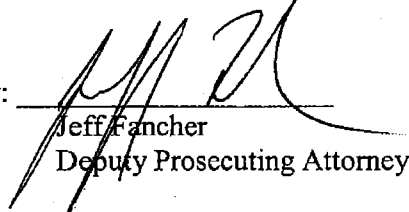
ATTEST:

ATTEST:

\_\_\_\_\_  
Clerk of the Board

  
\_\_\_\_\_  
City Clerk

APPROVED AS TO FORM:  
EDWARD G. HOLM  
PROSECUTING ATTORNEY

By:   
\_\_\_\_\_  
Jeff Fancher  
Deputy Prosecuting Attorney

INTERGOVERNMENTAL AGREEMENT FOR THE  
THURSTON COUNTY  
2008 SOLID WASTE MANAGEMENT PLAN AND THE 2008 HAZARDOUS  
WASTE PLAN UPDATES

THIS AGREEMENT, made and entered into this \_\_\_\_\_ day of \_\_\_\_\_ by and between Thurston County, Washington, and the incorporated municipality of Tenino which is organized under the laws of the State of Washington and are herein collectively referred to as the "Participating Municipality;"

WHEREAS, the Participating Municipality agreed, pursuant to the Solid Waste Management Act, Chapter 70.95 RCW, and the Hazardous Waste Management Act, Chapter 70.105 RCW, to participate in preparing the 2008 Thurston County Comprehensive Solid Waste Management Plan and the Local Hazardous Waste Plan, hereinafter referred to as the "Plans;" and

WHEREAS, it is to the mutual advantage of the Participating Municipality and their citizens to contract pursuant to Chapter 39.34 RCW for the purpose of providing joint county-municipality integrated solid waste and hazardous waste management programs; and

WHEREAS, the Participating Municipality have been operating under an Intergovernmental Agreement for Solid Waste Management dated April 30, 1999; and

WHEREAS, that Intergovernmental Agreement and the plans identify that the Plans shall be reviewed and revised by the Participating Municipality once every five (5) years; and

WHEREAS, the Participating Municipality have the opportunity to reaffirm their inclusion in the joint Plans;

NOW THEREFORE, for and in consideration of the mutual promises and covenants contained herein, it is agreed by the Participating Municipality hereto as follows:

1. PURPOSE OF AGREEMENT

The purpose of this Agreement is to allow the county and the participating municipality to jointly prepare and ultimately adopt an update to the joint Comprehensive Solid Waste Management Plan, pursuant to Chapter 70.95 RCW, for waste reduction, recycling, collection, transfer and disposal of solid waste generated within the boundaries of the Participating Municipality and Thurston County. This agreement also includes ultimately adopting an update to the 1998 Hazardous Waste Plan for Thurston County.



## 2. SOLID WASTE and HAZARDOUS WASTE MANAGEMENT

After adoption of the Plans by Participating Municipality, Thurston County will be the designated agent for the Participating Municipality for the administration of the Plans within Thurston County and shall have full authority to implement solid and hazardous waste management programs and services consistent with the Plans, for the Participating Municipality and the residents within the boundaries of the Participating Municipality, excluding the manner of collection and transfer of solid waste refuse within the corporate limits of those cities and towns which are the Participating Municipality. Such management shall be conducted in conformance with all state and federal laws and regulations. Included with such management shall be the carrying of public liability insurance with limits in accordance with standard practice. Thurston County shall indemnify and hold harmless the other Participating Municipalities and shall defend against any claims for personal injury or property damage arising out of Thurston County's management and operations of the solid waste programs set out under the Plan. Thurston County shall not indemnify, hold harmless, or defend any claims arising out of the actions of a Participating Municipality or any activities under a Participating Municipality's control.

Plans administration and government processes shall be set forth in more detail in the Plans as adopted.

## 3. FINANCING, FUNDS AND BUDGET

a. The costs of the Plans administration and implementation shall be administered through the County Solid Waste Fund. The fund shall be established and maintained through user fees, grants, gifts, loans and other lawful funding sources as outlined in the Plans and agreed upon between the Participating Municipality.

b. Thurston County shall continue to maintain a Solid Waste Fund as a dedicated enterprise fund within the County budget. All revenues and expenditures in connection with the Plans subject to this Agreement shall be budgeted and accounted for through this fund.

## 4. ACCOUNTING

Thurston County shall maintain accounts for the solid waste management program and the hazardous waste program in accordance with the requirements of the Washington State Auditor. Authorized representatives of any party hereto shall have the right to inspect the accounting concerning the solid and hazardous waste management programs at any reasonable time.

5. PROPERTY RIGHTS

Title to all property acquired with funds from the Solid Waste Fund shall vest in Thurston County. In the event of sale of any property acquired using the Solid Waste Fund, the proceeds from the sale shall be deposited in the Solid Waste Fund unless otherwise required by law, regulation, grant or contract.

6. ADMISSION OF NEW PARTIES

Additional municipal entities may be added to this Agreement upon such terms and conditions as the Participating Municipalities and the new party agree upon in writing.

7. EFFECT ON PRECEDING CONTRACT

This Agreement, upon its execution by all parties, supersedes that certain agreement entitled "Intergovernmental Agreement for the Thurston County 2001 Comprehensive Solid Waste Management Plan" dated April 30, 1999.

8. DURATION

This Agreement shall remain in effect for six (6) years from the effective date; or until replaced by a new intergovernmental agreement.

9. PLAN ADOPTION

The final Plan shall be adopted through Resolution of the Participating Municipality and the County. The Plan shall be reviewed and revised by the Plan Participants at least once every five (5) years following approval of the Plan by the Washington State Department of Ecology (Ecology). Any necessary revisions or amendments to the Plan will be accomplished through a process defined in the Plan.

10. EFFECTIVE DATE

This Agreement shall be effective following its execution by the Board of Thurston County Commissioners after execution by the Participating Municipality; and following the recording of this Agreement with the Thurston County Auditor, as required by RCW 39.34.

11. TERMINATION

After the Plan has been prepared and submitted to Ecology for final review, any Participating Municipality may terminate its involvement in this Agreement within 30 days following the 45 day final review period by Ecology. Should any Participating Municipality not agree to adoption of the Plan, the Participating Municipality will not adopt the Plan and shall immediately begin preparing its own Municipal Solid Waste Management Plan for approval by Ecology in full accordance with all Plan regulations and guidelines.

This Agreement has been executed by each party on the date set forth below.

THURSTON COUNTY

CITY OF TENINO

\_\_\_\_\_  
Chairman, Board of County Commissioners

  
Mayor

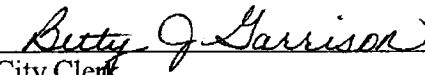
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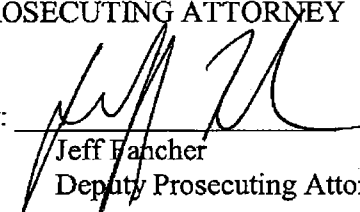
ATTEST:

ATTEST:

\_\_\_\_\_  
Clerk of the Board

  
City Clerk

APPROVED AS TO FORM:  
EDWARD G. HOLM  
PROSECUTING ATTORNEY

By:   
Jeff Fancher  
Deputy Prosecuting Attorney

INTERGOVERNMENTAL AGREEMENT FOR THE  
THURSTON COUNTY  
2008 SOLID WASTE MANAGEMENT PLAN AND THE 2008 HAZARDOUS  
WASTE PLAN UPDATES

THIS AGREEMENT, made and entered into this 13<sup>th</sup> day of May by and between Thurston County, Washington, and the incorporated municipality of Bucoda which is organized under the laws of the State of Washington and are herein collectively referred to as the "Participating Municipality;"

WHEREAS, the Participating Municipality agreed, pursuant to the Solid Waste Management Act, Chapter 70.95 RCW, and the Hazardous Waste Management Act, Chapter 70.105 RCW, to participate in preparing the 2008 Thurston County Comprehensive Solid Waste Management Plan and the Local Hazardous Waste Plan, hereinafter referred to as the "Plans;" and

WHEREAS, it is to the mutual advantage of the Participating Municipality and their citizens to contract pursuant to Chapter 39.34 RCW for the purpose of providing joint county-municipality integrated solid waste and hazardous waste management programs; and

WHEREAS, the Participating Municipality have been operating under an Intergovernmental Agreement for Solid Waste Management dated April 30, 1999; and

WHEREAS, that Intergovernmental Agreement and the plans identify that the Plans shall be reviewed and revised by the Participating Municipality once every five (5) years; and

WHEREAS, the Participating Municipality have the opportunity to reaffirm their inclusion in the joint Plans;

NOW THEREFORE, for and in consideration of the mutual promises and covenants contained herein, it is agreed by the Participating Municipality hereto as follows:

1. PURPOSE OF AGREEMENT

The purpose of this Agreement is to allow the county and the participating municipality to jointly prepare and ultimately adopt an update to the joint Comprehensive Solid Waste Management Plan, pursuant to Chapter 70.95 RCW, for waste reduction, recycling, collection, transfer and disposal of solid waste generated within the boundaries of the Participating Municipality and Thurston County. This agreement also includes ultimately adopting an update to the 1998 Hazardous Waste Plan for Thurston County.

## 2. SOLID WASTE and HAZARDOUS WASTE MANAGEMENT

After adoption of the Plans by Participating Municipality, Thurston County will be the designated agent for the Participating Municipality for the administration of the Plans within Thurston County and shall have full authority to implement solid and hazardous waste management programs and services consistent with the Plans, for the Participating Municipality and the residents within the boundaries of the Participating Municipality, excluding the manner of collection and transfer of solid waste refuse within the corporate limits of those cities and towns which are the Participating Municipality. Such management shall be conducted in conformance with all state and federal laws and regulations. Included with such management shall be the carrying of public liability insurance with limits in accordance with standard practice. Thurston County shall indemnify and hold harmless the other Participating Municipalities and shall defend against any claims for personal injury or property damage arising out of Thurston County's management and operations of the solid waste programs set out under the Plan. Thurston County shall not indemnify, hold harmless, or defend any claims arising out of the actions of a Participating Municipality or any activities under a Participating Municipality's control.

Plans administration and government processes shall be set forth in more detail in the Plans as adopted.

## 3. FINANCING, FUNDS AND BUDGET

a. The costs of the Plans administration and implementation shall be administered through the County Solid Waste Fund. The fund shall be established and maintained through user fees, grants, gifts, loans and other lawful funding sources as outlined in the Plans and agreed upon between the Participating Municipality.

b. Thurston County shall continue to maintain a Solid Waste Fund as a dedicated enterprise fund within the County budget. All revenues and expenditures in connection with the Plans subject to this Agreement shall be budgeted and accounted for through this fund.

## 4. ACCOUNTING

Thurston County shall maintain accounts for the solid waste management program and the hazardous waste program in accordance with the requirements of the Washington State Auditor. Authorized representatives of any party hereto shall have the right to inspect the accounting concerning the solid and hazardous waste management programs at any reasonable time.

5. PROPERTY RIGHTS

Title to all property acquired with funds from the Solid Waste Fund shall vest in Thurston County. In the event of sale of any property acquired using the Solid Waste Fund, the proceeds from the sale shall be deposited in the Solid Waste Fund unless otherwise required by law, regulation, grant or contract.

6. ADMISSION OF NEW PARTIES

Additional municipal entities may be added to this Agreement upon such terms and conditions as the Participating Municipalities and the new party agree upon in writing.

7. EFFECT ON PRECEDING CONTRACT

This Agreement, upon its execution by all parties, supersedes that certain agreement entitled "Intergovernmental Agreement for the Thurston County 2001 Comprehensive Solid Waste Management Plan" dated April 30, 1999.

8. DURATION

This Agreement shall remain in effect for six (6) years from the effective date; or until replaced by a new intergovernmental agreement.

9. PLAN ADOPTION

The final Plan shall be adopted through Resolution of the Participating Municipality and the County. The Plan shall be reviewed and revised by the Plan Participants at least once every five (5) years following approval of the Plan by the Washington State Department of Ecology (Ecology). Any necessary revisions or amendments to the Plan will be accomplished through a process defined in the Plan.

10. EFFECTIVE DATE

This Agreement shall be effective following its execution by the Board of Thurston County Commissioners after execution by the Participating Municipality; and following the recording of this Agreement with the Thurston County Auditor, as required by RCW 39.34.

11. TERMINATION

After the Plan has been prepared and submitted to Ecology for final review, any Participating Municipality may terminate its involvement in this Agreement within 30 days following the 45 day final review period by Ecology. Should any Participating Municipality not agree to adoption of the Plan, the Participating Municipality will not adopt the Plan and shall immediately begin preparing its own Municipal Solid Waste Management Plan for approval by Ecology in full accordance with all Plan regulations and guidelines.

This Agreement has been executed by each party on the date set forth below.

THURSTON COUNTY

TOWN OF BUCODA

\_\_\_\_\_  
Chairman, Board of County Commissioners

*Kathy Martin*  
\_\_\_\_\_  
Mayor

Date: \_\_\_\_\_

Date: *May 13, 2008*

ATTEST:

ATTEST:

\_\_\_\_\_  
Clerk of the Board

*Jennifer Goss*  
\_\_\_\_\_  
City Clerk

APPROVED AS TO FORM:  
EDWARD G. HOLM  
PROSECUTING ATTORNEY

By: *[Signature]*  
\_\_\_\_\_  
Jeff Fancher  
Deputy Prosecuting Attorney

INTERGOVERNMENTAL AGREEMENT FOR THE  
THURSTON COUNTY  
2009 SOLID WASTE MANAGEMENT PLAN AND THE 2009 HAZARDOUS  
WASTE PLAN UPDATES

THIS AGREEMENT, made and entered into this 28<sup>th</sup> day of February, 2012, by and between Thurston County, Washington, and the incorporated municipality of Rainier, Washington, which is organized under the laws of the State of Washington and are herein collectively referred to as the "Participating Municipality;"

WHEREAS, the Participating Municipality agreed, pursuant to the Solid Waste Management Act, Chapter 70.95 RCW, and the Hazardous Waste Management Act, Chapter 70.105 RCW, to participate in preparing the 2008 Thurston County Comprehensive Solid Waste Management Plan and the Local Hazardous Waste Plan, hereinafter referred to as the "Plans;" and

WHEREAS, it is to the mutual advantage of the Participating Municipality and their citizens to contract pursuant to Chapter 39.34 RCW for the purpose of providing joint county-municipality integrated solid waste and hazardous waste management programs; and

WHEREAS, the Participating Municipality have been operating under an Intergovernmental Agreement for Solid Waste Management dated April 30, 1999; and

WHEREAS, that Intergovernmental Agreement and the plans identify that the Plans shall be reviewed and revised by the Participating Municipality once every five (5) years; and

WHEREAS, the Participating Municipality have the opportunity to reaffirm their inclusion in the joint Plans;

NOW THEREFORE, for and in consideration of the mutual promises and covenants contained herein, it is agreed by the Participating Municipality hereto as follows:

1. PURPOSE OF AGREEMENT

The purpose of this Agreement is to allow the county and the participating municipality to jointly prepare and ultimately adopt an update to the joint Comprehensive Solid Waste Management Plan, pursuant to Chapter 70.95 RCW, for waste reduction, recycling, collection, transfer and disposal of solid waste generated within the boundaries of the Participating Municipality and Thurston County. This agreement also includes ultimately adopting an update to the 1998 Hazardous Waste Plan for Thurston County.



## 2. SOLID WASTE and HAZARDOUS WASTE MANAGEMENT

After adoption of the Plans by Participating Municipality, Thurston County will be the designated agent for the Participating Municipality for the administration of the Plans within Thurston County and shall have full authority to implement solid and hazardous waste management programs and services consistent with the Plans, for the Participating Municipality and the residents within the boundaries of the Participating Municipality, excluding the manner of collection and transfer of solid waste refuse within the corporate limits of those cities and towns which are the Participating Municipality. Such management shall be conducted in conformance with all state and federal laws and regulations. Included with such management shall be the carrying of public liability insurance with limits in accordance with standard practice. Thurston County shall indemnify and hold harmless the other Participating Municipalities and shall defend against any claims for personal injury or property damage arising out of Thurston County's management and operations of the solid waste programs set out under the Plan. Thurston County shall not indemnify, hold harmless, or defend any claims arising out of the actions of a Participating Municipality or any activities under a Participating Municipality's control.

Plans administration and government processes shall be set forth in more detail in the Plans as adopted.

## 3. FINANCING, FUNDS AND BUDGET

a. The costs of the Plans administration and implementation shall be administered through the County Solid Waste Fund. The fund shall be established and maintained through user fees, grants, gifts, loans and other lawful funding sources as outlined in the Plans and agreed upon between the Participating Municipality.

b. Thurston County shall continue to maintain a Solid Waste Fund as a dedicated enterprise fund within the County budget. All revenues and expenditures in connection with the Plans subject to this Agreement shall be budgeted and accounted for through this fund.

## 4. ACCOUNTING

Thurston County shall maintain accounts for the solid waste management program and the hazardous waste program in accordance with the requirements of the Washington State Auditor. Authorized representatives of any party hereto shall have the right to inspect the accounting concerning the solid and hazardous waste management programs at any reasonable time.

5. PROPERTY RIGHTS

Title to all property acquired with funds from the Solid Waste Fund shall vest in Thurston County. In the event of sale of any property acquired using the Solid Waste Fund, the proceeds from the sale shall be deposited in the Solid Waste Fund unless otherwise required by law, regulation, grant or contract.

6. ADMISSION OF NEW PARTIES

Additional municipal entities may be added to this Agreement upon such terms and conditions as the Participating Municipalities and the new party agree upon in writing.

7. EFFECT ON PRECEDING CONTRACT

This Agreement, upon its execution by all parties, supersedes that certain agreement entitled "Intergovernmental Agreement for the Thurston County 2001 Comprehensive Solid Waste Management Plan" dated April 30, 1999.

8. DURATION

This Agreement shall remain in effect for five (5) years from the effective date; or until replaced by a new intergovernmental agreement.

9. PLAN ADOPTION

The final Plan shall be adopted through Resolution of the Participating Municipality and the County. The Plan shall be reviewed and revised by the Plan Participants at least once every five (5) years following approval of the Plan by the Washington State Department of Ecology (Ecology). Any necessary revisions or amendments to the Plan will be accomplished through a process defined in the Plan.

10. EFFECTIVE DATE

This Agreement shall be effective following its execution by the Board of Thurston County Commissioners after execution by the Participating Municipality; and following the recording of this Agreement with the Thurston County Auditor, as required by RCW 39.34.

11. TERMINATION

Intergovernmental Agreement  
Thurston County 2008 Solid Waste  
Management Plan and Hazardous Waste  
Plan Updates

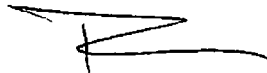
After the Plan has been prepared and submitted to Ecology for final review, any Participating Municipality may terminate its involvement in this Agreement within 30 days following the 45 day final review period by Ecology. Should any Participating Municipality not agree to adoption of the Plan, the Participating Municipality will not adopt the Plan and shall immediately begin preparing its own Municipal Solid Waste Management Plan for approval by Ecology in full accordance with all Plan regulations and guidelines.

This Agreement has been executed by each party on the date set forth below.

THURSTON COUNTY

CITY OF RAINIER, WA

\_\_\_\_\_  
Chairman, Board of County Commissioners



\_\_\_\_\_  
Mayor

Date: \_\_\_\_\_

Date: February 28, 2012

ATTEST:

ATTEST:

\_\_\_\_\_  
Clerk of the Board

*Charmayne Harrison*  
\_\_\_\_\_  
City Clerk

APPROVED AS TO FORM:  
JON TUNHEIM  
PROSECUTING ATTORNEY

By: \_\_\_\_\_  
Rick Peters  
Deputy Prosecuting Attorney

INTERGOVERNMENTAL AGREEMENT FOR THE  
THURSTON COUNTY  
2008 SOLID WASTE MANAGEMENT PLAN AND THE 2008 HAZARDOUS  
WASTE PLAN UPDATES

THIS AGREEMENT, made and entered into this 8<sup>th</sup> day of April, 2008 by and between Thurston County, Washington, and the incorporated municipality of Yelm which is organized under the laws of the State of Washington and are herein collectively referred to as the "Participating Municipality;"

WHEREAS, the Participating Municipality agreed, pursuant to the Solid Waste Management Act, Chapter 70.95 RCW and the Hazardous Waste Management Act, Chapter 70.105 to participate in preparing the "2008 Thurston County Comprehensive Solid Waste Management Plan and the Local Hazardous Waste Plan, hereinafter referred to as the "Plans;" and

WHEREAS, it is to the mutual advantage of the Participating Municipality and their citizen, to contract pursuant to Chapter 39.34 RCW for the purpose of providing a joint county-municipality integrated solid waste and hazardous waste management programs; and

WHEREAS, the Participating Municipality have been operating under an Intergovernmental Agreement for Solid Waste Management dated April 30, 1999; and

WHEREAS, that Intergovernmental Agreement and the plans identify that the Plans shall be reviewed and revised by the Participating Municipality once every five (5) years; and

WHEREAS, the Participating Municipality have the opportunity to reaffirm their inclusion in the joint Plans;

NOW THEREFORE, for and in consideration of the mutual promises and covenants contained herein, it is agreed by the Participating Municipality hereto as follows:

1. PURPOSE OF AGREEMENT

The purpose of this Agreement is to prepare and ultimately adopt an update to the joint 2008 Comprehensive Solid Waste Management Plan pursuant to Chapter 70.95 RCW, for waste reduction, recycling, collection, transfer and disposal of solid waste generated within the boundaries of the Participating Municipality and Thurston County. This agreement also includes ultimately adopting an update to the 1998 Hazardous Waste Plan for Thurston County.

2. SOLID WASTE and Hazardous Waste MANAGEMENT

After adoption of the Plans by Participating Municipality, Thurston County will be the designated agent for the Participating Municipality for the administration of the Plans within Thurston County and shall have full authority to implement Solid and Hazardous waste

management programs and services consistent with the Plans, for the Participating Municipality and the residents within the boundaries of Participating Municipality, excluding the manner of collection and transfer of solid waste refuse within the corporate limits of those cities and towns which are Participating Municipality. Such management shall be conducted in conformance with all state and federal laws and regulations. Included with such management shall be the carrying of public liability insurance with limits in accordance with standard practice. Thurston County shall indemnify and hold harmless the other Participating Municipalities and shall defend against any claims for personal injury or property damage arising out of Thurston County's management and operations of the solid waste programs set out under the Plan. Thurston County shall not indemnify, hold harmless, or defend any claims arising out of the negligence of a Participating Municipality or any activities under a Participating Municipality's control.

Plans administration and government processes shall be set forth in more detail in the Plans and adopted.

### 3. FINANCING, FUNDS AND BUDGET

a. The costs of the Plans administration and implementation shall be administered through the County' Solid Waste Fund. The fund shall be established and maintained through user fees, grants, gifts, loans and other lawful funding sources as outlined in the Plans and agreed upon between the Participating Municipality.

b. Thurston County shall continue to maintain a Solid Waste Fund as a dedicated enterprise fund within the County budget. All revenues and expenditures in connection with the Plans subject to this Agreement shall be budgeted and accounted for through this fund.

### 4. ACCOUNTING

Thurston County shall maintain accounts for the solid waste management program and the hazardous waste program in accordance with the requirements of the Washington State Auditor. Authorized representatives of any party hereto shall have the right to inspect the accounting concerning the solid and hazardous waste management programs of the Plans at any reasonable time.

### 5. PROPERTY RIGHTS

Title to all property acquired with funds from the Solid Waste Fund shall vest in Thurston County. In the event of sale of any property acquired using the Solid Waste Fund, the proceeds from the sale shall be deposited in the Solid Waste Fund unless otherwise required by law, regulation, grant or contract.

### 6. ADMISSION OF NEW PARTIES

Additional municipal entities may be added to this Agreement upon such terms and conditions as the Participating Municipalities and the new party agree upon in writing.

7. EFFECT ON PRECEDING CONTRACT

This Agreement, upon its execution by all parties, supersedes that certain agreement entitled "Intergovernmental Agreement for the Thurston County 2001 Comprehensive Solid Waste Management Plan" dated April 30, 1999.

8. DURATION

This Agreement shall remain in effect from the effective date; or until replaced by a new intergovernmental agreement.

9. PLAN ADOPTION

The final Plan shall be adopted through Resolution of the Participating Municipality and the County. The Plan shall be reviewed and revised by the Plan Participants at least once every five (5) years following approval of the Plan by the Washington State Department of Ecology (Ecology). Any necessary revisions or amendments to the Plan will be accomplished through a process defined, included and adopted in the Plan.

10. EFFECTIVE DATE

This Agreement shall be effective following its execution by the Board of Thurston County Commissioners after execution by the Participating Municipality; and following the recording of this Agreement with the Thurston County Auditor, as required by RCW 39.34.

11. TERMINATION

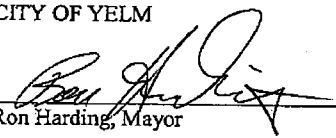
After the Plan has been prepared and submitted to Ecology for final review, any Participating Municipality may terminate its involvement in this Agreement within 30 days following the 45 day final review period by Ecology. Should any Participating Municipality not agree to adoption of the Plan, the Participating Municipality will not adopt the Plan and shall immediately begin preparing its own Municipal Solid Waste Management Plan for approval by Ecology in full accordance with all Plan regulations and guidelines.

This Agreement has been executed by each party on the date set forth below.

THURSTON COUNTY

CITY OF YELM

\_\_\_\_\_  
Chairman, Board of County Commissioners

  
Ron Harding, Mayor

Date: \_\_\_\_\_

Date 3/14, 2010

ATTEST:

\_\_\_\_\_  
Clerk of the Board

ATTEST:

  
\_\_\_\_\_  
Janine Schnepf, City Clerk

APPROVED AS TO FORM:  
EDWARD G. HOLM

\_\_\_\_\_  
PROSECUTING ATTORNEY

By: \_\_\_\_\_  
Jeff Fancher, Deputy Prosecuting Attorney

Approved:  
Effective:

Placeholder for Lacey and Olympia interlocals that are in process.



# APPENDIX H

SEPA REVIEW

**DETERMINATION OF NONSIGNIFICANCE**

**Proponent:** Thurston County Water and Waste Management-Solid Waste  
2000 Lakeridge Drive SW, Building #1  
Olympia, WA 98502  
Contact: Scott Schimelfenig  
(360) 357-2491 ext. 7678

**Description of Proposal:** This SEPA review is for the periodic update/amendment to Thurston County Solid Waste Management Plan for 2009-2014. This Plan provides a 5 year action plan and timeline for waste reduction, recycling and best solid waste handling processes. Environmental sustainability is a factor of this plan.

Because the proposed code amendments are not associated with a specific development proposal, they are being reviewed as a Nonproject Action, in accordance with the requirements of the State Environmental Policy Act (SEPA). All specific proposals will be required to apply for project specific permits and meet all current regulations at the time of application

**Location of Proposal:** Thurston County

**Section/Township/Range:** N/A

**Tax Parcel No.:** N/A

**Threshold Determination:** The lead agency for this proposal has determined that it does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement is not required under RCW 43.21C.030(2)(C). This decision was made after review by the Lead Agency of a completed Environmental Checklist and other information on file with the Lead Agency. This information is available to the public on request.

**Jurisdiction:** Thurston County  
**Lead Agency:** Resource Stewardship  
**Responsible Official:** Cliff Moore, Director

**Date of Issue:** September 25, 2009

  
Cynthia Wilson, Senior Planner

There is no comment period for this Determination of Nonsignificance (DNS). The lead agency and other agencies with jurisdiction over the proposal may issue or continue processing any necessary approvals. If no other approvals are necessary, the applicant may begin work.

**APPEALS:** Threshold determinations may be appealed pursuant to TCC 1709.160 if: (1) a written notice of appeal, meeting the requirements of TCC 17.09.160(4), and the appropriate appeal fee is received by the Thurston County Resource Stewardship Department within seven calendar days of the date of issuance of the threshold determination and; (2) the person filing the appeal meets the requirements of TCC 17.09.160(2).

**NOTE:** The issuance of this Determination of Nonsignificance does not constitute project approval. The applicant must comply with all applicable requirements of Thurston County Departments and/or the Hearing Examiner prior to receiving permits.

Thurston County Resource Stewardship Department, Cynthia Wilson  
Building #1, Administration  
2000 Lakeridge Drive SW  
Olympia, WA 98502 (360) 786-5475

cc: Department of Ecology  
Thurston Co Public Works, Development Review  
Sub Area # All  
The Olympian  
Chehalis Tribe  
Nisqually Valley News  
City of Lacey

Thurston Co Environmental Health Dept  
Department of Fish & Wildlife  
Washington Department of Transportation  
Port of Olympia  
City of Olympia  
City of Tumwater



Thursday, March 6, 2008 11:30 a.m. - 1:00 p.m.  
Heritage Court Meeting Room A/B", 2404-A Heritage Court SW, Olympia, WA

#### AGENDA

##### ROLL CALL:

Acting Chairman: Joe Hyer, City of Olympia  
Representative: Robert Macleod, County Commissioner  
Representative: Jason Hearn, City of Lacey  
Representative: Karen Valenzuela, City of Tumwater  
Representative: Robert Scribner, City of Tenino  
Representative: Russ Hendrickson, City of Yelm  
Representative: Vacant, Town of Rainier  
Representative: Vacant, Town of Bucoda  
Representative: Bill McGregor, Port of Olympia  
Representative: Rusty Howell, citizen (District #1)  
Representative: Burton Guttman, citizen (District #2)  
Representative: Vacant, citizen (District #3)  
Representative: Delroy Cox, industry representative - refuse  
Representative: Diana Wall, industry representative - recycling

1. ANNOUNCEMENTS
2. CALL TO ORDER
3. APPROVAL OF AGENDA/MINUTES:  
Minutes for meeting of November 1, 2007 and February 7, 2008  
Agenda for meeting of March 6, 2008
4. PUBLIC / MEMBER COMMENTS
5. DEPT. OF ECOLOGY COMMENTS  
Tami Ramsey
6. PROGRAM UPDATES/RECENT DEVELOPMENTS  
Education and Outreach Programs Update – Terri Thomas
7. OLD BUSINESS  
Election of SWAC Chair and Vice Chair  
Solid Waste Management Plan – Scott Schimelfenig, Scott Clark
8. NEW BUSINESS

*Citizens with disabilities who need special accommodations at this meeting should call Ruth Pierce at (360) 357-2491 or TDD (360) 754-2933 by Monday, March 3, 2008.*



**THURSTON COUNTY  
SOLID WASTE ADVISORY COMMITTEE  
Meeting Minutes of March 6, 2008  
Heritage Court Meeting Room A/B**

**ROLL CALL:**

| <u>Members</u>          | <u>Interest/Organization</u> | <u>Present (P)<br/>Not Present (NP)<br/>Excused (E)</u> |
|-------------------------|------------------------------|---|
| Joe Hyer (Acting Chair) | City of Olympia              | P   |
| Robert Macleod          | County Commissioner          | NP  |
| Jason Hearn             | City of Lacey                | P   |
| Karen Valenzuela        | City of Tumwater             | E   |
| Robert Scribner         | City of Tenino               | P   |
| Russ Hendrickson        | City of Yelm                 | E   |
| Rusty Howell            | District #1                  | E   |
| Burton Guttman          | District #2                  | P   |
| Bill McGregor           | Port of Olympia              | NP  |
| George Barner           | *Port of Olympia             | p   |
| Delroy Cox              | Refuse Industry              | P   |
| Diana Wall              | Recycling Industry           | P   |

\*New Representative for Port of Olympia

**Staff Present:** Terri Thomas, Scott Clark, Dick Blinn, Cheryl Long, Diana Dale, Allyson Ruppenthal, Colleen Uuereb, Ruth Pierce – Water and Waste Management

**Guests:** Ron Jones – City of Olympia; John Cox – LeMay

**1. ANNOUNCEMENTS**

Joe Hyer thanked Pacific Disposal for their work on the business recycling program.

**2. CALL TO ORDER**

The meeting was called to order at 11:32 a.m. SWAC Members, meeting guests and County staff introduced themselves.

**3. APPROVAL OF AGENDA/MINUTES**

Minutes for SWAC meeting of November 1, 2007 and amended minutes for meeting of February 7, 2008 were approved. SWAC agenda for meeting of March 6, 2008 was approved.

**4. PUBLIC/MEMBER COMMENTS**

None

**5. DEPT. OF ECOLOGY COMMENTS**

None

## **6. PROGRAM UPDATES/RECENT DEVELOPMENTS**

Terri Thomas reviewed information emailed to the SWAC regarding results from a recent survey on curbside recycling. The survey results were very positive overall. A few residents had issues with the glass pick-up that have since been resolved. Staff was initially concerned that of the residents who called LeMay for a smaller container did not receive the information they needed. Terri said that analysis shows that solid waste generation in 2007 was lower than the population increase, partly as a result of the new curbside recycling program along with other programs. She will email the Committee that spreadsheet.

Terri said Solid Waste will be starting the Food Waste Collection Program at St. Martin's University next week. They have already started purchasing bio-products, such as "spudwear" utensils and cups made from a corn based product. Staff is working with Tumwater Hills Elementary on start-up for their food waste collection program (end of the month) with curriculum included. New Market School and South Puget Sound Community College are also participating. She has set up a meeting with the Evergreen State College to discuss getting them started on the program.

Waste analysis was also conducted at County offices and found that by collecting food waste at the jail, 6,000 pounds of food waste per month could potentially be diverted. The food waste would be diverted from the compactor, resulting in less compactor dumps, meaning significant savings for the County. The jail food waste collection program will be in place soon.

The RFP for a waste sort at the Waste and Recovery Center (WARC) is set to go before the Board of County Commissioners this month. The sort has taken place every four year and will occur four times over the next year. Garbage is divided by categories to see what recyclables are still in the waste stream that should be going elsewhere. Terri said this is a good time to conduct a waste sort, before the food waste collection program really takes hold throughout the county, because very informative pre and post food waste program recycling information can be obtained.

Terri reported that the Solid Waste Education and Outreach staff has applied for a Washington State Recycling Association award, which they hope to receive at the annual conference in May. The application listed all of the programs (and their results) Solid Waste staff has worked on over the past year.

Terri pointed out that last month she asked for representatives of jurisdictions on the SWAC to provide her with contacts to whom she could send brochures of various Solid Waste programs (Composting 2008, Construction and Demolition, Community Recycle Days and the Wastemobile) and received no response. She asked again for any contacts at the cities in order to get this information out to the public.

Jason Hearn asked Terri if staff was aware of the program the Thurston Green Business Program that Thurston County Chamber of Commerce is starting up. She said staff is aware but was not included in the planning of the program and expressed concern that the Chamber is setting guidelines for businesses for waste reduction and recycling without using County or City of Olympia solid waste staff as a resource. Terri said that Thurston County Environmental Health is concerned that a business getting a green certification may have outstanding regulatory issues. Pacific Disposal has a certified green recycling program where they are bundling their recycling

services into one package (including the commercial food waste program the County initiated, providing outreach materials, training, site assistance, signage, indoor bins) Pacific Disposal has been actively promoting the program and getting businesses signed up and helping them set up for collection. Joe Hyer said the City of Olympia helped plan and fund the Chamber's pilot program, which consists of several aspects including green building, water conservation, energy efficiency, transportation/commute trip reduction; pollution prevention, and buying/selling green. One of them is waste reduction and recycling and is a true pilot program that the City wanted them to get started quickly. He believes the Chamber's plan is to get through the pilot year, assess how they were doing and then seek expertise in each area.

George Barner asked who is responsible for outreach to the various commercial restaurant operators regarding food disposal. Terri said that both County Solid Waste and Pacific Disposal LeMay have been promoting the food waste program, which is very new. Solid Waste has also been providing information to the Health Department food inspectors, as well as newspapers, radios etc. Terri said that since the Solid Waste team just achieved full staffing, more outreach will be conducted.

Jason Hearn asked about outreach to North Thurston schools. Terri said that the elementary schools will be a big push for the food waste program, but they do take time to set up: staff and student presentations, assistance on the waste sort lines for at least a week – all require staging and curriculum. They will not be heavily publicized until they get fully up to speed. Jason also asked about food waste programs at state offices and Terri said that County Solid Waste tries to update the state on programs and Pacific Disposal LeMay has been talking to them as well. Joe said that a few years ago, the financial barriers to the school districts were too big – it was more expensive to recycle at that time and there was no food waste program available. Now with organics and commingled recycling available, more and more schools and businesses will want to participate. Terri stressed that staff will be very busy as the program grows. Organics are valuable and the opening of a large composting facility at the south end of the county has been very helpful, although it is located far from the WARC.

Joe pointed out that the two largest waste streams in Thurston County are food waste and construction and demolition debris (C&D); therefore, C&D diversion should be the next big emphasis.

George Barner mentioned that when he was recently at a large political gathering, he observed that food waste, cardboard, bottles and plastic, etc. all went into the garbage. He said that more of an example needs to be set for recycling. Terri said that an 8-page newsletter (Talkin' Trash) goes out to every County resident twice a year containing 15 – 20 articles on different programs such as the Event Recycling Program. The County has recycling containers (Clearstream) available for loan and also gave containers to all of the cities to loan out. There is also a weekly column in the Environmental page of the Olympian which covers many topics such as event recycling. There was discussion about the importance of government agencies and officials setting an example in terms of recycling practices, such as ensuring that there are recycling receptacles available. This also pertains to event facilities. Terri pointed out that now that the food waste program can be shown as cost effective, more and more businesses will sign up.

Terri said that another sign that the mindset regarding recycling is changing is the recent turnout for the Master Recyclers Training Program; we usually get 10 people and more than 20 have signed up so far.

Joe suggested that new SWAC members e-mail questions to staff regarding the Solid Waste programs. Interest was shown in touring the Waste and Recovery Center. After discussion, it was suggested that the April SWAC meeting take place at the WARC, along with tours of the facility.

## **7. OLD BUSINESS**

### Election of SWAC Chair and Vice Chair

Delroy Cox nominated Jason Hearn as Chair. Diana Wall nominated Joe Hyer as Chair and Jason Hearn as Vice-Chair. The Committee voted Joe Hyer as Chair (with Joe Hyer and Jason Hearn abstaining); and Jason Hearn as Vice-Chair.

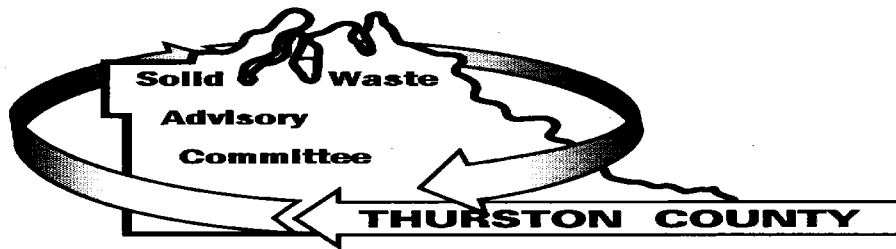
### Solid Waste Management Plan

Scott Clark said that there was one response to the Request for Proposals for work on the Solid Waste Management Plan update. Staff is currently reviewing the submittal, which came in higher than anticipated. Since the Solid Waste Facilities Analysis was done in 2007, with the intent to get approximately 80% of the Comprehensive Solid Waste Management Plan from it, staff did not see a need to do a 100% effort again. Scott said the Solid Waste Facilities Analysis could be refined down to very specific recommendations, defining metrics and timelines for them that could become the Plan. The intent in forming the Plan, is bringing back a subcommittee, like the one used for the Facilities Analysis. The subcommittee will go through the technical, feasibility, economic and metrics portion and figure out quantitatively whether or not goals are being met. Scott said staff anticipates 4 or 5 meetings of the subcommittee to accomplish this, with a meeting every one or two weeks until finished (beginning in April) with the intent of having the draft plan by summer and a complete plan by fall. The Solid Waste Facilities Analysis was done in order to get background data on demographics, population growth, waste generation, type of materials produced for waste and then develop the potential programs, policies and facilities to manage, reduce, reuse and recycle that waste. This information simply needs to be shaped into the Solid Waste Management Plan. A proposed subcommittee meeting schedule will be on the agenda for the April SWAC meeting. Joe said that 3 or 4 members will be needed for the subcommittee and pointed out that working on the subcommittee would be beneficial to members wishing to learn more about SWAC issues.

## **8. NEW BUSINESS**

There was discussion regarding the location of the April meeting, including the possibility of holding the meeting at the WARC transfer station meeting room. The next SWAC meeting will be Thursday, April 3, 2008 at a location to be announced.





Thursday, May 1, 2008 11:30 a.m. - 1:00 p.m.  
2404-A Heritage Court SE, Meeting Room A/B, Olympia, WA

#### AGENDA

##### ROLL CALL:

Chairman: Joe Hyer, City of Olympia  
Co-Chair: Jason Hearn, City of Lacey  
Representative: Robert Macleod, County Commissioner  
Representative: Karen Valenzuela, City of Tumwater  
Representative: Robert Scribner, City of Tenino  
Representative: Russ Hendrickson, City of Yelm  
Representative: Vacant, Town of Rainier  
Representative: Vacant, Town of Bucoda  
Representative: George Bamer, Port of Olympia  
Representative: Rusty Howell, citizen (District #1)  
Representative: Burton Guttman, citizen (District #2)  
Representative: Vacant, citizen (District #3)  
Representative: Delroy Cox, industry representative - refuse  
Representative: Diana Wall, industry representative - recycling

1. ANNOUNCEMENTS
2. CALL TO ORDER
3. APPROVAL OF AGENDA/MINUTES:  
Minutes for meeting of April 3, 2008  
Agenda for meeting of May 1, 2008
4. PUBLIC / MEMBER COMMENTS
5. DEPT. OF ECOLOGY COMMENTS  
Tami Ramsey
6. PROGRAM UPDATES/RECENT DEVELOPMENTS  
Education and Outreach Programs Update – Terri Thomas
7. OLD BUSINESS
8. NEW BUSINESS  
Hazardous Waste Management Plan Update– Gerald Tousley, Environmental Health

*Citizens with disabilities who need special accommodations at this meeting should call Ruth Pierce at (360) 357-2491 or TDD (360) 754-2933 by Monday, April 28, 2008.*



**THURSTON COUNTY  
SOLID WASTE ADVISORY COMMITTEE  
Meeting Minutes of May 1, 2008  
Heritage Court Meeting Room A/B**

**ROLL CALL:**

| <u>Members</u>         | <u>Interest/Organization</u> | <u>Present (P)<br/>Not Present (NP)<br/>Excused (E)</u> |
|------------------------|------------------------------|---|
| Joe Hyer (Chair)       | City of Olympia              | P   |
| Jason Hearn (Co-Chair) | City of Lacey                | P   |
| Robert Macleod         | County Commissioner          | NP  |
| Karen Valenzuela       | City of Tumwater             | P   |
| Robert Scribner        | City of Tenino               | P   |
| Russ Hendrickson       | City of Yelm                 | E   |
| Rusty Howell           | District #1                  | NP  |
| Burton Guttman         | District #2                  | P   |
| George Barner          | Port of Olympia              | NP  |
| Delroy Cox             | Refuse Industry              | E   |
| Diana Wall             | Recycling Industry           | P   |

**Staff Present:** Scott Schimelfenig, Phil Malloy, Diana Dale, Ruth Pierce – Water and Waste Management; Art Starry, Gerald Tousley – Environmental Health

**Guests:** Dan Daniels, City of Olympia; John Cox, LeMay Enterprises; Greg Schoenbachler, Silver Springs Organics

**1. ANNOUNCEMENTS**

None

**2. CALL TO ORDER**

The meeting was called to order at 11:35 a.m.

**3. APPROVAL OF AGENDA/MINUTES**

May 1, 2008 meeting agenda approved by consensus. Karen Valenzuela made a motion to approve the April 3, 2008 SWAC meeting minutes. Jason Hearn seconded the motion. Motion passed.

**4. PUBLIC/MEMBER COMMENTS**

There was discussion regarding the order and name of items on the SWAC agenda. The new order will be:

1. Call to Order
2. Approval of Agenda/Minutes
3. Public Comments
4. Dept. of Ecology Comments
5. Program Updates/Recent Developments
6. Old Business
7. New Business
8. Member Issues

Karen Valenzuela asked about glass pick-up in Tumwater neighborhoods and Scott advised her to contact Pacific Disposal.

Burt Guttman brought in a display of retail plastic packaging, all of which is not recyclable. Scott said this issue relates to product stewardship. Solid Waste is a member of the Product Stewardship Institute, which brought the Electronics Legislation forward. A paint initiative is also in the works. The idea being to make the manufacturer take responsibility for packaging.

## **5. DEPT. OF ECOLOGY COMMENTS**

None

## **6. PROGRAM UPDATES/RECENT DEVELOPMENTS**

### Community Recycle Days

Scott Schimelfenig said the Community Recycle Days will take place on Saturday, May 10 at the Thurston County Fairgrounds and Saturday, May 17 at South Sound Speedway. He provided a copy of the event brochures to the Committee. The other side of the brochure announced the upcoming Wastemobile events on May 31 and June 1 at the Yelm Middle School parking lot.

There was discussion about the possibility of holding additional electronic collection events.

### Residential Food Waste Program

Scott reported that the program where residential food waste can be placed in the yard waste bins of Pacific Disposal LeMay customers starts on May 1, 2008. Solid Waste staff have been working on this program with Pacific Disposal. City of Olympia will start their residential food waste collection on July 7.

### Waste Stream Characterization and Analysis

Scott said that the County has received a Request for Proposal for a Waste Stream Characterization and Analysis. This involves taking a look at what is coming in to the transfer station in the waste stream and identifying the largest components, whether it's food waste, construction and demolition (C&D), etc. There is a requirement in the Transfer Station Development and Service Agreement that this is accomplished every four years. The last analysis was accomplished in 2004. Staff will be finalizing the contract in the next few weeks. The vendor is Green Solutions who will do a quarterly review - summer, fall, winter and spring waste sorts. The report will be completed in 2009. Scott said it will be interesting to see the contrast from the 2004 report, since for this waste sort, food waste and more C & D will be pulled, which are both a large part of the waste stream.

### Commercial Food Waste Program

The County has been working with Pacific Disposal LeMay, who has been targeting commercial vendors such as hospitals, schools and businesses to pull compostable food waste from their sites. Solid Waste Education and Outreach staff (as well as Pacific Disposal) is currently backlogged with businesses that want to participate. Solid Waste will deal with the education component. Two temporary staff will be brought on board to help out with the program. Solid Waste staff hope to hire a full FTE in 2009. Scott said that the challenge in setting up programs middle schools, high schools and colleges is that a great deal of follow-up is required to get the program going. There is a verbal agreement with Pacific Disposal to subsidize part of this program for the first six months. Staff wants to ensure that the program catches on in those first months.

### Solid Waste Management Plan Interlocal Agreement

Scott is currently working with the jurisdictions on acquiring signatures for the Interlocal Agreement for the Solid Waste Management Plan and Hazardous Waste Management Plan updates.

Scott said that Solid Waste has worked with Nicky Upson, Environmental Health along with Metro Paint out of Portland, who takes latex paint from our HazoHouse, blends it and makes good quality indoor/outdoor recycled paint. Metro Paint has donated approximately 900 gallons of the paint for the County to distribute to flood victims in South County. Scott said that approximately 50% of the paint has been distributed. Informational letters and brochures serving as reminders are going out to victims.

## **7. OLD BUSINESS**

### Local Hazardous Waste Plan

Gerald Tousley, Environmental Health said he is working on the Hazardous Waste Management Plan update and has been going to the jurisdictions with Scott Schimelfenig. The first meeting is scheduled for May 18, 10:00 at Heritage Court Meeting Room A/B for anyone who would like to attend. The purpose of the meeting is to solidify the stakeholders group to start the process of going through the Plan to update and find out what the needs of the community are. The last update was in 1998. The Mike Williams Group is the facilitator for the process. The meetings are scheduled once a month throughout the year. All of the documents and supplemental documents as well as the meeting minutes, guidelines for writing the Plan and the state Beyond Waste Plan will be on the web. There will be an area on the website where citizens and committee members can comment. The comments will be considered at the meeting. The draft is tentatively set for December and eventually staff will go back to the communities and present their Plan along with their goals for the next 4 to 5 years. This plan includes Household Hazardous Waste, Pollution Prevention (Small Quantity Generators/Businesses), Technical Assistance, Used Oil Collection, Wastemobile Events, and possible new items such as climate change, mercury and silver. Some jurisdictions may have specific issues that they would like addressed. Gerald said this plan needs to be merged into the Beyond Waste Plan.

### Solid Waste Management Plan

Scott asked which committee members would like to participate in the Solid Waste Management Plan subcommittee. The participants would need to be able to attend all four meetings of the subcommittee in May and June. Joe Hyer, Delroy Cox, Burt Guttman are already signed on. Other committee members are considering it. Scott said that staff members from the jurisdictions are also welcome to participate.

Scott said that Committee members will be provided with Chapter 5 of the 2007 Solid Waste System Assessment. The consultant who did the assessment (Maul Foster and Alongi) has been asked to go through the 56 future alternatives, recyclables, organics, construction and demolition waste, garbage and moderate risk waste and make up a matrix. The Committee will then go through the matrix using a "SMART" list (Specific, Measurable, Achievable, Realistic and Time/event related.) The subcommittee will try to determine what to use as the measurement tool and decide on eventual goals in the next five year period.

**7. OLD BUSINESS**

None

**8. NEW BUSINESS**

Scott said he would like to bring the Capital Facility Plan (for the 2009 budget) to the SWAC in June, and possibly look for consent in August. The CFP has been forecasted out for 20 years.

Meeting adjourned at 12:35 p.m.

The SWAC will meet on Thursday, June 5, 2008 at 2404-A Heritage Court, Meeting Room A/B.



Thursday, September 4, 2008

11:30 a.m. - 1:00 p.m.

2404-A Heritage Court SE, Meeting Room A/B, Olympia, WA

### AGENDA

#### ROLL CALL:

Chairman: Joe Hyer, City of Olympia  
Co-Chair: Jason Hearn, City of Lacey  
Representative: Robert Macleod, County Commissioner  
Representative: Karen Valenzuela, City of Tumwater  
Representative: Robert Scribner, City of Tenino  
Representative: Russ Hendrickson, City of Yelm  
Representative: Vacant, Town of Rainier  
Representative: Vacant, Town of Bucoda  
Representative: George Barner, Port of Olympia  
Representative: Rusty Howell, citizen (District #1)  
Representative: Burton Guttman, citizen (District #2)  
Representative: Vacant, citizen (District #3)  
Representative: Delroy Cox, industry representative - refuse  
Representative: Diana Wall, industry representative - recycling

1. CALL TO ORDER
2. APPROVAL OF AGENDA/MINUTES:  
Minutes for meeting of August 7, 2008  
Agenda for meeting of September 4, 2008
3. PUBLIC COMMENTS
4. DEPT. OF ECOLOGY COMMENTS  
Tami Ramsey
5. PROGRAM UPDATES/RECENT DEVELOPMENTS  
Education and Outreach Programs Update – Terri Thomas
6. OLD BUSINESS  
Solid Waste Management Plan – Scott Schimelfenig
7. NEW BUSINESS
8. MEMBER ISSUES

*Citizens with disabilities who need special accommodations at this meeting should call Ruth Pierce at (360) 357-2491 or TDD (360) 754-2933 by Tuesday, September 2, 2008.*





**THURSTON COUNTY  
SOLID WASTE ADVISORY COMMITTEE  
Meeting Minutes of September 4, 2008  
Heritage Court Meeting Room A/B**

**ROLL CALL:**

| <u>Members</u>         | <u>Interest/Organization</u> | <u>Present (P)<br/>Not Present (NP)<br/>Excused (E)</u> |
|------------------------|------------------------------|---|
| Joe Hyer (Chair)       | City of Olympia              | P   |
| Jason Hearn (Co-Chair) | City of Lacey                | P   |
| Robert Macleod         | County Commissioner          | NP  |
| Karen Valenzuela       | City of Tumwater             | P   |
| Robert Scribner        | City of Tenino               | P   |
| Russ Hendrickson       | City of Yelm                 | P   |
| Rusty Howell           | District #1                  | E   |
| Burton Guttman         | District #2                  | P   |
| George Barner          | Port of Olympia              | P   |
| Delroy Cox             | Refuse Industry              | E   |
| Diana Wall             | Recycling Industry           | P   |

**Staff Present:** Terri Thomas, Ruth Pierce – Water and Waste Management

**Guests:** Dan Daniels – City of Olympia; John Cox – LeMay Enterprises; Ken Jones – Mayor of Tenino; Neil Alongi – Maul Foster and Alongi

**1. ANNOUNCEMENTS**

Joe Hyer has been appointed to the state Solid Waste Advisory Committee as an alternate for west side cities.

**2. CALL TO ORDER**

The meeting was called to order at 11:30 a.m.

**3. APPROVAL OF AGENDA/MINUTES**

No quorum at Call to Order. Quorum was achieved by 11:45 a.m.

**4. PUBLIC/MEMBER COMMENTS**

None

**5. DEPT. OF ECOLOGY COMMENTS**

None

**6. PROGRAM UPDATES/RECENT DEVELOPMENTS**

Education and Outreach Programs Update

Terri Thomas reminded the Committee that Community Recycle Days and the Wastemobile events are coming up this month and offered more flyers. She said the Organics Program is going very well with 60 – 70 businesses signed up so far and schools starting this week.

Evergreen College will be starting their program soon and it is already in place at St. Martins University and South Puget Sound Community College. The program has also been started at the County office buildings and the jail.

## **7. OLD BUSINESS**

### Solid Waste Management Plan

Neil Alongi, a consultant with Maul Foster and Alongi discussed the progress of work on the Thurston County Solid Waste Action Plan. The consultants have been working on the plan with a SWAC subcommittee (Sub-SWAC), comprised of Burt Guttman, Joe Hyer, Diana Wall, Scott Schimelfenig, Terri Thomas, Scott Clark, Jim Zygar (Thurston County) Tom Palmeter (City of Lacey), and Erica Ueuler (City of Olympia). The Sub-SWAC's role was to take the Solid Waste Assessment and identify actions that could be considered to reach the goals of reducing waste and increasing recycling over the next five to six years. The action plan is a very short version of a solid waste plan. It includes background information as well as information about general, organic and construction debris recycling. It then proposes a set of objectives, actions and an implementation schedule.

Neil expressed gratitude to the sub-SWAC for their work on the action plan, and particularly to Burt Guttman for his editing work.

The action plan was provided to the SWAC in draft form and includes the following introduction, followed by chapter titles:

### **1 Introduction**

Thurston County Department of Water and Waste Management (WWM) is charged with administering systems to handle solid waste produced in the county and responding to the needs of all county residents for various solid-waste management services. In carrying out its responsibilities, WWM must comply with state and federal laws while striving to maintain the highest standards for protecting human health and the environment, including groundwater, surface water (such as rivers and streams), soil, and air.

WWM and the Thurston County Solid Waste Advisory Committee (SWAC) have prepared this Solid-Waste Action Plan (hereafter simply called "the Action Plan") to proactively meet the needs of the County's residents and businesses. The Action Plan was developed cooperatively by WWM and the SWAC by considering the priorities of Thurston County's solid-waste system, as identified in Appendix A, the Solid Waste System Assessment (the System Assessment). The System Assessment describes current solid-waste practices (covering disposal, collection, recycling, composting, reuse, education, and administration), estimates future demands on the system, and describes ways in which WWM can address those demands.

This Action Plan is intended to be the primary document guiding the future management of solid waste in Thurston County, and the SWAC has tried to make the Plan easily accessible and understandable to the public. In addition, WWM emphasizes that the Action Plan should contain specific measureable goals that are achievable in the near future so progress toward these goals can be readily evaluated.

The Action Plan offers a concise summary of the current solid waste management system, followed by a discussion of recommended objectives and actions. Previous solid-waste management plans (SWMPs) have portrayed individual solid-waste system components in great detail, with recommendations for improvement provided at the end of each discussion. The previous plans often resulted in a segmented understanding of the system in contrast to the more comprehensive, integrated portrait undertaken in this plan that shows how the system elements are interconnected and impact one another.

- 1.1 Planning Period
- 1.2 Cooperation with State and Local Plans
- 2 The Solid Waste Management System**
- 2.1 Waste Material Management in Thurston County
  - 2.1.1 Solid Waste Management
  - 2.1.2 Material Recycling
- 2.2 Waste Stream Description
- 2.3 Administration and Management
- 2.4 Solid Waste Facilities
- 2.5 General Diversion
  - Waste-reduction programs
  - Waste-reuse programs
  - Waste Recycling
    - 2.5.1 Organics Recycling
    - 2.5.2 Construction and Demolition Waste Recycling
    - 2.5.3 Paper/Plastic/Metal/Glass Recycling
- 3 Action Plan**
- 3.1 Goals
  - Table 3.1 Objectives & Actions
  - Table 3.2 Implementation Schedule
- 4 Support of Local and Regional Plans**
- 4.1 State of Washington Beyond Waste
- 4.2 City of Olympia Waste Resources Plan

Neil said the Action Plan is approximately 95% complete, but there is still time for editing before it is finalized. The latest version will be sent out to the Committee this week and Neil and Terri asked that the Committee get their comments in to them by September 19.

There is also a set of metrics, every action item has a metric as a way of measuring progress. It may be as simple as stating whether or not an action was accomplished or not. The metric that was focused on quite a bit was what are we going to look at to gauge the success of a program, such as encouraging recycling or reducing waste. The best way of gauging how the county is doing in general is whether we managed to decrease the waste going into the landfill, based on population at a particular time.

Neil said the objectives and actions were categorized into three main areas, administration/data management, solid waste and recycling facilities, and general waste reduction. There are sub-

categories for organics and construction and demolition (C&D) waste. Organics and C&D are the two largest waste categories from the most recent waste sort study that Thurston County did. Organics and C&D made up 26% of the waste brought in. There is also a category of material that ordinarily would be recycled but ended up in the waste stream, such as a pizza box contaminated by food waste and couldn't be recycled as cardboard, but now can be accepted as organics food waste. The two tables (3.1 and 3.2) show objectives and individual actions.

Neil said that solid waste and recycling facility expansion is only addressed in the plan as the last resort after efforts to encourage recycling, reuse and diversion as much as possible, reducing the waste stream. If there is population growth and/or a spike in the economy ends up causing the rate of disposal to go up, the needed facilities will be in place. On the recycling side, there may be some recycling facilities that the County determines they need (such as C&D). There are areas in the "Goals" section that address putting together new facilities. However, most of the goals address improving what is in place to obtain better recycling rates, such as "increase diversion at WARC by operator" by providing incentives to take out more material; and add yard waste acceptance and bulk recycling (appliances, electronics, etc.) at the Rochester and Rainier sites. Neil said that when the consultants worked on a model of where waste is generated in the county and where it will be generated in the next two years, the trend shows a push towards the south end of the county. In the System Assessment, there was a transportation cost analysis. Two pieces of that analysis are included in the draft Plan showing that it may be advantageous to consider locating a facility in south county. The question is whether to build and operate a facility and incur the related costs weighed against substantial future savings on transportation.

Under General Waste Reduction one of the things the sub-SWAC recommended was a series of actions if disposal goals are not met as a last resort.

## **8. NEW BUSINESS**

No new business.

The meeting adjourned at 12:45 p.m.

The next SWAC meeting is scheduled for Thursday, October 2, 2008 at 2404-A Heritage Court, Meeting Room A/B, Olympia, WA.