Yakima County Solid Waste and Moderate Risk Waste Management Plan

DRAFT

YAKIMA COUNTY

September 2016

YAKIMA COUNTY SOLID WASTE AND MODERATE RISK WASTE MANAGEMENT PLAN

September 2016

Prepared for:

Yakima County Department of Public Services
Solid Waste Division
Yakima, Washington

Prepared by:

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- Solid Waste Advisory Committee Members

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Francisco Guerrero	City of Sunnyside
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Keith Kovalenko	Yakima Waste Systems, Inc.
Maureen Adkison	Yakima Valley Conference of Governments
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Ryan Ibach / Ted Silvestri	Yakima County Health District

- Washington State Department of Ecology staff.

Yakima County residents and businesses also contributed to this Plan through comments provided during public meetings and through various other channels. The Board of County Commissioners and Yakima County Public Services Solid Waste Division gratefully acknowledge this input.

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Acronyms and Abbreviations

2003 Plan	Yakima County Solid Waste Management Plan, July 2003
2010 Plan	Yakima County Solid and Moderate Risk Waste Management Plan, June 2010
AUF	Airspace Utilization Factor
BDI	Basin Disposal of Yakima, LLC
BSE	Bovine Spongiform Encephalopathy
BWIWG	Beyond Waste Implementation Working Group
C&D	Construction and Demolition
CEMP	Comprehensive Emergency Management Program
CFCs	Chlorofluorocarbons
CLF	Cheyne Landfill
County	Yakima County
CTS	Cheyne Transfer Station
Consultants	HDR Engineering, Inc. and Cascadia Consulting Group
DDMP	Disaster Debris Management Plan
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
GCCS	Landfill Gas Collection and Control System
GHG	Greenhouse Gas
H	High
HHW	Household Hazardous Waste
Horizon 2040	Horizon 2040 Comprehensive Plan
HSBWCF	Household & Small Business Waste Collection Facility
L	Low
LFG	Landfill Gas
LVTS	Lower Valley Transfer Station
M	Medium
MRW	Moderate Risk Waste
MSW	Municipal Solid Waste
NA	Not Applicable
NMOC	Non-Methane Organic Compound
NSPS	New Source Performance Standards
OFM	Washington State Office of Financial Management
PCS	Petroleum Contaminated Soils
PFRP	Process to Further Reduce Pathogens
Plan	Solid and Moderate Risk Waste Management Plan
Plan 2015	Yakima County's Comprehensive Plan
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington

Acronyms and Abbreviations

SF	Square Feet
SQG	Small Quantity Generator
SVE	Soil Vapor Extraction
SWMP	Solid Waste Management Plan
SWAC	Solid Waste Advisory Committee
THLF	Terrace Heights Landfill
THTS	Terrace Heights Transfer Station
TPY	Tons Per Year
USDA	United States Department of Agriculture
VPH	Vehicles Per Hour
WAC	Washington Administrative Code
WCS	Waste Characterization Study
WSDA	Washington State Department of Agriculture
WSPWB	Washington State Public Works Board
WUTC	Washington Utilities and Transportation Commission
YRCAA	Yakima Regional Clean Air Agency
YWS	Yakima Waste Systems, Inc.

EXECUTIVE SUMMARY

INTRODUCTION

This Solid Waste and Moderate Risk Waste Management Plan (Plan) recommends strategies to manage solid waste and moderate risk waste generated in Yakima County, Washington, including the cities and towns of Naches, Tieton, Yakima, Moxee, Harrah, Wapato, Zillah, Toppenish, Granger, Sunnyside, Grandview, Selah, Union Gap, and Mabton. Solid waste handling includes management, storage collection, diversion, transportation, treatment, use, processing and final disposal. Recommendations are provided for municipal solid waste, other special waste, and moderate risk waste.

SUMMARY OF ADDITIONAL COSTS

A summary of recommended strategies is presented in Table ES.1. Over the next six years, implementation of recommended strategies is estimated to cost up to $310,000. This cost estimate reflects only the new services or programs to be implemented by Yakima County. It does not reflect costs associated with existing programs, nor does it reflect the significant costs incurred by private firms, public agencies, or residents who also have roles in managing solid waste in Yakima County.

Table ES.1 Summary of Plan Recommendations (Additional Costs, 2016 dollars)

Recommendation	Six-Year Cost Estimate
3. Promotion and Education	
PE1) Increase promotion and education in stakeholder cities	
PE2) Coordinate education efforts with new programs	
PE3) Continue to engage media	
4. Waste Reduction and Recycling	
WRR1) Adopt and maintain list of designated materials	
WRR2) Support recycling at public events	
WRR3) Adopt service-level ordinance to promote recycling and waste	
WRR4) Expand recycling drop off opportunities	
WRR5) Conduct mixed waste processing facility feasibility study	$85,000
WRR6) Support private sector programs	
WRR7) Increase promotion of existing reuse programs	
WRR8) Continue periodic waste characterization	$150,000
5. Organics	
O1) Continue program as is in 'pest free' area	
O2) Comply with WSDA apple maggot quarantine requirements	
O3) Consider options within apple maggot quarantine area	
O4) Explore other options if needed	
6. Solid Waste Collection	
SWC1) Require waste routed through Yakima County-owned facilities	
SWC2) Review collection contracts	
SWC3) Require space in new development	
7. Transfer System	
TS1) Purchase or option property	
TS2) Expand transfer station at THLF	
TS3) Evaluate LVTS Utilization	
TS4) Consider detailed study of LVTS	$25,000
8. Disposal	
D1) Maintain option to preserve capacity at THLF	
D2) Purchase or option property	
D3) Consider LFG to Energy in future	

Table ES.1 Summary of Plan Recommendations (Additional Costs, 2016 dollars)

Recommendation	Six-Year Cost Estimate
9. Construction, Demolition and Land Clearing Debris and Building Materials	
C&D1) Promote proper management of C&D waste	
C&D2) Partner with private organizations	
10. Special Wastes	
SW1) Cooperative effort for special wastes	
SW2) Update Solid Waste Policies and Procedures	
SW3) Monitor guidance regarding pharmaceutical waste	
11. Disaster Debris Management	
DD1) Coordinate with Office of Emergency Management and Emergency Management Office	
DD2) Develop a disaster debris plan	$50,000
DD3) Reserve landfill airspace	
12. Moderate Risk Waste	
MRW1) Continue promotion and education coordination	
MRW2) Technical assistance by Ecology	
MRW3) Update MRW plan with solid waste plan	
13. Administration and Enforcement	
AE1) Consider adopting minimum service levels	
AE2) Consider mechanisms to promote consistent service	
AE3) Consider additional funding strategies	
Total Estimated Six-Year Cost of Management Recommendations	**$310,000**

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Chapter 1.0 INTRODUCTION

1.1 INTRODUCTION

This Solid Waste and Moderate Risk Waste Management Plan (Plan) recommends strategies to manage solid waste and moderate risk waste generated in Yakima County, Washington. Solid waste handling includes management, storage, collection, diversion, transportation, treatment, use, processing, and final disposal. This Plan includes recommendations for municipal solid waste (MSW), moderate risk waste (MRW), diversion, construction and demolition (C&D) debris, organics, and special wastes.

1.2 PURPOSE

Washington State law assigns primary responsibility for managing MSW and MRW to local governments. Chapter 70.95 Revised Code of Washington (RCW) requires local government to maintain current solid waste management plans. Chapter 70.105 RCW requires local government to develop plans for managing hazardous waste which in this Plan is covered in Chapter 12.

The purpose of this Plan is to develop recommended waste management strategies for the period years 2017 through 2022. The Plan also looks forward to ensure that sufficient processing and disposal capacity will be available for at least the next twenty years, or through year 2037.

Local plans must be complete and in good standing to receive grant monies from the Department of Ecology Coordinated Prevention Grant program, which is an important source of funding for non- disposal-related programs and activities.

1.3 GOALS AND OBJECTIVES

The mission statement for this Plan is:

The overall goal of Yakima County and the participating jurisdictions is to provide Yakima County citizens with efficient, reliable and affordable solid waste collection, handling, recycling and disposal services in order to improve our quality of life while protecting and preserving human health, environmental quality and natural resources.

Specific objectives include the following:

- Ensure convenient and reliable services for managing solid waste and MRW materials;
- Promote the use of innovative and economical waste handling methods;
- Emphasize waste reduction as a fundamental management strategy;
- Support public-private partnerships for waste reduction and recycling programs;
- Encourage the recovery of marketable resources from the waste stream;

- Reduce environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping;
- Ensure compliance with State and local solid waste and MRW regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Washington State Department of Ecology's (Ecology) Moving Washington Beyond Waste and Toxics document.

1.4 PARTICIPANTS IN THE PLANNING PROCESS

This document was developed with the guidance of the Yakima County Solid Waste Advisory Committee (SWAC) whose participation is gratefully acknowledged. Yakima County Commissioners Resolution 102-2016 in the matter of re-establishing the SWAC and adopting committee bylaws and Resolution 103-2016 appointing members to the SWAC are included as Appendix A. Committee members and their affiliation are shown in Table 1.1.

Table 1.1 Yakima County Solid Waste Advisory Committee

Name	Affiliation/Title
Ryan Rodruck	Pacific Northwest University of Health Sciences (Business)
Bill Moore / Cus Arteaga	City of Grandview
Gary Clark	City of Zillah
Francisco Guerrero	City of Sunnyside
Mike Leita	Yakima County Board of Commissioners
Bob Groeneweg	Farm Bureau
Lance Hoyt / Art Kroes	City of Toppenish
Bill Lover	City of Yakima
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Keith Kovalenko	Yakima Waste Systems, Inc.
Maureen Adkison	Yakima Valley Conference of Governments
T.J. Valler	Pacific Steel & Recycling
Ryan Ibach / Ted Silvestri	Yakima Health District

1.5 PLANNING AREA

The planning area includes the incorporated and unincorporated areas of Yakima County. This includes the cities and towns of Naches, Tieton, Yakima, Moxee, Harrah, Wapato, Zillah, Toppenish, Granger, Sunnyside, Grandview, Selah, Union Gap, and Mabton.

Yakima County-owned and operated solid waste facilities also serve the members of the Yakama Nation. The Yakama Nation is a federally recognized tribe, and as such, its reservation and tribal government have a sovereign status. In the absence of an agreement stating otherwise, Washington State solid waste regulations do not generally apply on tribal lands, and the tribal government manages its solid waste.

One United States military installation, the Yakima Training Center, is located within Yakima County and receives solid waste management services from Yakima County and from private vendors, as well as taking the lead on managing their own wastes.

1.6 PLANNING AUTHORITY

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

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

- Prepare and deliver to the county auditor a city solid waste management plan for integration into the county solid waste plan;
- Enter into an agreement with the county to prepare a joint city-county plan; or
- Authorize the county to prepare a plan for the city for inclusion in the county plan.

The incorporated communities of Naches, Tieton, Yakima, Moxee, Harrah, Wapato, Zillah, Toppenish, Granger, Sunnyside, Grandview, Selah, Union Gap, and Mabton executed interlocal agreements with Yakima County regarding solid waste management in 2002. The agreements authorize Yakima County to prepare a countywide solid waste and MRW management plan that includes each of these cities and towns.

Participating cities and towns have both the opportunity and responsibility to participate in Plan development, review and comment on the draft Plan, and to adopt the final Plan.

An example of an executed Solid Waste Interlocal Agreement can be found in Appendix B. Resolutions of adoption for this Plan can be found in Appendix C.

1.7 PLAN DEVELOPMENT PROCESS

The Plan was developed over a period of approximately one year. The process began in August 2015 with the contract execution for HDR Engineering, Inc., and Cascadia Consulting Group (collectively "the Consultants") as the team that would lead development of the Plan. During the intervening months technical research, analysis, and recommendations were prepared by the Consultants and discussed with Yakima County staff, the Yakima Health District, the SWAC, the Yakima Valley Conference of Governments, Public Works Directors, City Managers, City Councils, the Board of County Commissioners, stakeholders, and interested members of the public, and interest groups. This participatory, interactive process was undertaken in order to prepare and build support for the Plan.

The public participation process was largely focused on the SWAC. The Board of County Commissioners appointed SWAC members. Members are selected to represent a balance of interests including citizens, public interest groups, business, the waste management industry and local elected public officials. The SWAC provides guidance to the Yakima County Public Services Solid Waste Division in the development of programs

and policies concerning solid waste handling and disposal. The SWAC reviews and comments on rules, policies, and ordinances before they are proposed for adoption. SWAC meetings are open to the public and meeting notices are published beforehand.

The anticipation is the Plan will be adopted by each participating city or town and by the Board of County Commissioners in meetings open to the public.

1.8 STATUS OF PREVIOUS PLANS

This Plan supersedes all previous solid waste and moderate risk waste management plans including the *Yakima County Solid and Moderate Risk Waste Management Plan, June 2010* (the 2010 Plan)*, Yakima County Solid Waste Management Plan*, July 2003 (the 2003 Plan), and *Yakima County Hazardous Waste Management Plan*, March 1991. Table 1.2 lists key recommendations from the 2003 Plan and their current implementation status.

Table 1.2 Status of Previous Solid Waste Management Recommendations

Recommendations	Status
Chapter 3: Promotion and Education	
Continue existing public education and promotion activities.	Ongoing
Provide additional public education for new or expanded waste diversion programs.	Ongoing
Provide additional public education to support the yard debris disposal ban and to inform people about alternative handling options.	Not applicable – yard debris disposal ban did not occur
Promote the collection system for e-waste.	Ongoing
Address illegal dumping through public education in addition to the development of a citizens' task force.	Ongoing. Limited implementation of Citizen's Task Force
Develop and implement a business recognition program to help promote recycling and waste reduction by the commercial sector.	Not implemented
Chapter 4: Waste Reduction, Recycling and Composting	
Assist Washington State in achieving the 50% recycling rate.	Ongoing
Adopt the list of designated materials and maintain it through periodic review and updates as appropriate.	Done; review and updates ongoing
Conduct a waste composition study to assess recycling program performance and potential.	Done
Make curbside recycling services available in every urban incorporated area and promote these services.	Ongoing
Provide recycling opportunities at all solid waste transfer and disposal facilities in Yakima.	Done
Encourage business recycling through a cooperative effort between the County, cities, private collectors, service groups, and the businesses.	Ongoing
Continue to provide support for recycling at public events.	Ongoing

Table 1.2 Status of Previous Solid Waste Management Recommendations

Recommendations	Status
Chapter 5: Organics Collection System	
Implement a disposal ban on yard debris effective January 1, 2012, for all public and private disposal facilities in Yakima County and for yard debris from all sources.	Not Implemented
Develop and issue an RFQ/RFP for composting services for the yard debris collected at County disposal facilities.	Done
Explore other options, including a County owned and operated facility, if Recommendation O2 cannot be implemented due to pricing, terms or other reasons.	Not applicable because above Recommendation was completed
Chapter 6: Collection	
Provide all areas of Yakima County with bulky waste collection services.	Done
Chapter 7: Transfer System	
Evaluate the feasibility of a self-haul unloading facility at the Cheyne Landfill.	Done
Expand Terrace Heights Transfer Station to accommodate commercial traffic when Terrace Heights Landfill closes.	Ongoing
Consider purchasing (or taking an option on) property suitable for a future transfer station as land becomes available and as funds allow.	Ongoing
Chapter 8: Disposal	
Maintain the option to preserve capacity at Terrace Heights Landfill	Ongoing
Consider purchasing (or taking an option on) property suitable for landfilling purposes as land becomes available and as funds allow.	Ongoing
Consider conversion technologies in the future, but only if these can be proven to be feasible and cost-effective.	Ongoing
Chapter 9: Construction, Demolition and Land Clearing Debris and Green Building Practices	
Promote green building where possible.	Ongoing
Develop and maintain a “Green House” to demonstrate green building techniques and products.	Done
Encourage proper reuse, recycling and/or disposal of construction and demolition debris.	Ongoing
Chapter 10: Special Wastes	
Support development and adoption by the State of Washington of a product stewardship program for tires.	Ongoing
Support new product stewardship programs as appropriate.	Ongoing
Continue to address special wastes through a cooperative effort with the Yakima Health District and Ecology, and according to the established Solid Waste Division’s Policy & Procedures. Update these Policy & Procedures as necessary to address new problems or special wastes.	Ongoing
Chapter 11: Disaster Debris Management	
Coordinate with the Office of Emergency Management to prepare for disaster debris response.	Ongoing
Develop an internal plan for handling disaster debris, in coordination with the Office of Emergency Management.	Ongoing

Table 1.2 Status of Previous Solid Waste Management Recommendations

Recommendations	Status
Chapter 12: Moderate Risk Waste	
Adopt the list shown in the 2010 Plan of targeted materials for household hazardous waste and small quantity generator waste collections, but excluding e-waste and the materials shown in Group 7.	Ongoing
Utilize technical assistance for small quantity generators provided by Ecology.	Ongoing
Utilize the same schedule and process for updating the MRW Plan as for updating the solid waste management plan.	Done
Chapter 13: Administration and Enforcement	
Address illegal dumping problems in Yakima County with a task force and the SWAC.	Ongoing
Consider adopting minimum service levels in the future.	Ongoing
Exercise flow control authority as needed to enforce the policy that all solid wastes generated in Yakima County is delivered to a County solid waste facility. Adopt a flow control ordinance or other steps if necessary.	Ongoing

1.9 RELATIONSHIP TO OTHER PLANS

1.9.1 The State Solid and Hazardous Waste Plan – Moving Washington Beyond Waste and Toxics

Ecology released a waste and toxics reduction plan in June 2015. Moving Washington Beyond Waste and Toxics focuses on reducing waste and toxics by adopting a sustainable materials management approach which is also used by the United States Environmental Protection Agency (EPA). This approach looks at the full life cycle of materials from the design and manufacturing, through use, to disposal or recycling. The EPA believes a sustainable materials management approach can help identify more sustainable ways to produce products that are less impactful to the environment.

Moving Washington Beyond Waste and Toxics' vision is as follows: "*We can 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 following four priorities are included in Moving Washington Beyond Waste and Toxics:

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

1.9.2 Plan 2015

Plan 2015 is the Yakima County Comprehensive Plan, a policy framework for development in the County prior to 2015. Volume 1 contains three chapters. Chapter I, the Policy Plan, covers demographics; goals and objectives for the natural setting,

economic development, and land use; housing; parks and open space; utilities; transportation; capital facilities; and intergovernmental coordination. Chapter II, Plan Development, covers the planning process including updating and citizen involvement. Chapter III, Environmental Analysis, addresses SEPA requirements, the Growth Management Act, and alternative growth scenarios.

The section on utilities in Chapter I indicates that residents rely on utilities as part of maintaining their health and well being. Utilities must conscientiously plan for future growth so that services are adequate. In addition, environmental issues associated with management of solid waste, siting new transfer stations, and biosolids need to be addressed. Plan 2015 includes the following purpose statements, policies, and goals specifically regarding solid waste:

- The cost of solid waste management is becoming increasingly expensive. Yakima County should encourage continued improvements in methods of reducing landfill waste and recognizes that planning for future land needs is an important cost-control method.
- Manage the solid waste system in a manner that cost effectively preserves the environment and protects the public health.
- Identify and adopt measures to improve the energy efficiency of recycling and trash collection, and implement feasible and effective measures.
- Review and revise the Solid and Moderate Risk Waste Management Plan at least every five years; continue to assess the need for solid waste transfer facilities, recycling centers, and materials recovery facilities, identifying potential locations and suggesting revisions to the zoning code as needed.
- Fees are held to reasonable levels and nuisance abatement laws are rigorously enforced, in order to protect rural and resource land owners from illegal dumping.
- Provide an environmentally safe bio-solids management program to provide for present and future bio-solids utilization needs.
- In order to reduce the amount of waste that ends up in landfills, encourage recycling and educational programs designed to reduce and minimize waste.
- Improve existing waste reduction/recycling programs.
- Strive to maximize the use of local markets, capabilities, and resources in developing and implementing waste reduction/recycling programs.
- Establish requirements for the use of recycled and used materials in construction activities undertaken by Yakima County or its contractors.
- Provide convenient recycling opportunities to the public to maximize participation in waste reduction/recycling programs.
- Encourage owners of new and existing multifamily, commercial and industrial buildings to provide space for separating and storing recyclable materials.
- Encourage recipients of construction and demolition permits to separate, recycle, and reuse demolition debris as well as use recycled and used materials, where practicable. To assist with this, Yakima County should provide information on how

and where to obtain used and recycled materials and assess the economic, legal, and technical feasibility of requiring the use of specific recycled or used materials in certain types of construction.

The Yakima County Planning Department is currently preparing an update to Plan 2015 called Horizon 2040 Comprehensive Plan (Horizon 2040). Horizon 2040 is anticipated to be a policy document that guides decisions related to growth and development in unincorporated Yakima County. Horizon 2040 will refresh policies and elements of Plan 2015 with an eye toward population and employment growth over the next 20 years. This growth is anticipated to increase demand for residential, commercial and industrial land, parks, schools, services, utility facilities, and roads. Horizon 2040 is currently in the plan development phase and plans to be in environmental review from July through December 2016. Horizon 2040 is anticipated to be adopted by July 2017.

1.10 SUSTAINABILITY AND PRODUCT STEWARDSHIP

A sustainable process or system is one that can be maintained at a certain level indefinitely. Before sustainability became a popular concept, waste management professionals were managing solid waste by balancing concerns about human health, environmental protection, and long-term conservation of materials, energy, and space (e.g., landfill volume), with limited financial and staff resources. Yakima County's previous solid waste management plans included waste reduction, reuse and recycling as means of conserving raw materials.

Product stewardship is a concept wherein manufacturers (as opposed to local government and its rate payers) take responsibility for minimizing the environmental impact of their products throughout their life cycle. Product stewardship can minimize waste during product design, manufacturing, distribution, and consumption. It also develops a private-sector infrastructure to recover products at the end of their useful life, removing from local governments a portion of the financial burden for a specific waste.

Product stewardship programs can be mandatory or voluntary, and often take the form of "take-back" programs. Product stewardship programs are funded in a variety of ways, including advanced disposal fees collected at time of product purchase, end of life disposal fees at time of disposal, or with charges incorporated in the purchase price of the product. Product stewardship can be coupled with incentives such as technical assistance, education for consumers, recognition programs, tax reductions; market development plans; grants; and government procurement policies. In Washington State, product stewardship programs are in place for electronic wastes (e-wastes) and limited other materials.

1.11 REQUIRED PLAN ELEMENTS

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

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

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

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

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

1.12 REGULATORY OVERVIEW

The statutes and regulations that govern solid waste handling are briefly summarized below.

1.12.1 Solid Waste Handling Standards

A rule governing solid waste facilities and handling practices, Chapter 173-350 of the Washington Administrative Code (WAC), also known as *Solid Waste Handling Standards* went into effect in 2003. This rule replaced Chapter 173-304 WAC. Chapter 173-350 WAC sets out standards of operation and permitting requirements for solid waste handling facilities for recycling, intermediate handling (i.e., transfer), composting, moderate risk waste, and tires (unless exempted by definition or due to beneficial use). The rule regulates landfill disposal of a new category of wastes called "inert" wastes. Chapter 173-350 WAC, except rules regarding organics, is currently under review by Ecology.

Chapter 173-350 WAC also places importance on local solid waste management plans (such as this document) by requiring solid waste handling facilities (whether exempt or

requiring a permit) to conform with local solid waste plans. Chapter 173-350 WAC also states a facility's exemption for handling only recyclable materials is contingent on meeting the definition of a recyclable material as designated in a local solid waste management plan.

Landfill disposal of solid waste is regulated under a separate rule, Chapter 173-351 WAC, *Criteria for Municipal Solid Waste Landfills.* This rule was last revised in October 2015. Yakima County operates its active landfills, Cheyne and Terrace Heights, in compliance with Chapter 173-351 WAC.

1.12.2 Hazardous Waste Management Act

In 1982, Ecology adopted rules that combined the state and federal regulation of hazardous wastes. These rules, as amended several times in the ensuing years, are contained in Chapter 173-303 WAC and are the main body of regulations for hazardous wastes in this State. In 1983, the State Legislature adopted a hierarchy of hazardous waste management methods in RCW 70.105.150. In descending order of priority for management, the hierarchy is waste reduction; waste recycling; physical, chemical, and biological treatment; incineration; solidification/ stabilization treatment; and landfill.

Amendments to Chapter 70.105 RCW in 1985 and 1986 defined MRW and required that local governments (counties) develop plans for the proper management of MRW. As stated in RCW 70.105.007(3), the legislature's intent was "to promote cooperation between state and local governments by assigning responsibilities for planning for hazardous waste to the state and planning for moderate-risk waste to local government." In 1987, the legislature appropriated funds for grants to counties to assist in their planning efforts and clarified the schedule.

The legislature enacted the Used Oil Recycling Act, Chapter 70.95I RCW in 1991. This statute requires local governments to manage used oil in conjunction with their MRW programs and to submit annual reports to Ecology. Local governments were required to adopt used oil recycling amendments to their MRW management plans by July 1, 1993.

New *Solid Waste Handling Standards* (Chapter 173-350 WAC) were developed by Ecology and became effective February 10, 2003. These standards address MRW facilities (including construction, record keeping and reports).

The *Dangerous Waste Regulations* (Chapter 173-303 WAC) have been amended several times to address new issues and to incorporate new provisions of state and federal regulations.

1.13 SUMMARY OF RECENT CHANGES IN SOLID WASTE REGULATION AND POLICY

Several new rules have been adopted since the 2010 Plan was developed. Important new rules and regulations for consideration in the Plan development are shown below (not in order of priority).

1.13.1 Mercury-Containing Lights Product Stewardship Program

Chapter 173-910 WAC requires establishment of a product stewardship program for mercury-containing lights throughout Washington State. Producers of mercury-containing lights sold for residential use must finance and participate in the product stewardship program by doing the following:

- Funding its producer share cost of the standard plan and program operated by the department-contracted stewardship organization or operating, either individually or jointly, an independent plan and program approved by Ecology.
- Pay administrative and operational costs associated with the standard program or the independent program in which they participate, except for the collection costs associated with curbside and mail-back collection programs. For curbside and mail-back programs, a stewardship organization must finance the costs of transporting and processing mercury-containing lights from the point of accumulation. For collection locations, including household hazardous waste facilities, charities, retailers, government recycling sites, or other suitable locations, a stewardship organization must finance the costs of collection, transportation, and processing of mercury-containing lights collected at the collection locations.
- Submit market share data to Ecology to determine market share in the event more than one approved product stewardship plan is operating.
- Meet its financial obligations to the plan, which includes Ecology's annual fee.
- Comply with producers' requirements.
- Participate in a fully implemented plan.
- Take actions required to correct violations.

Refer to Chapter 12 regarding Moderate Risk Waste for additional information.

1.13.2 Revenue-Sharing Agreements

An update to RCW 81.77.185 allows waste collection companies to retain up to fifty percent of the revenue paid to the companies for the material if the companies submit a plan to the Washington Utilities and Transportation Commission (WUTC) that is certified by the appropriate local government authority as being consistent with the local government solid waste plan and that demonstrates how the revenues will be used to increase recycling. The remaining revenue shall be passed to residential customers.

1.13.3 County Comprehensive Solid Waste Management Plan

In 2010, RCW 70.95.080 was updated to indicate that when updating a solid waste management plan, after June 10, 2010, each local comprehensive plan must, at a minimum, consider methods that will be used to address the following:

- Construction and demolition waste for recycling or reuse;
- Organic material including yard debris, food waste, and food contaminated paper products for composting or anaerobic digestion;

- Metals, glass, and plastics for recycling; and
- Waste reduction strategies.

1.13.4 Paper Conservation Program—Paper Recycling Program

A new state regulation, RCW 70.95.725, requires that by July 1, 2010, each state agency shall develop and implement the following:

- A paper conservation program. Each state agency shall endeavor to conserve paper by at least thirty percent of their current paper use.
- A paper recycling program to encourage recycling of all paper products with the goal of recycling one hundred percent of all copy and printing paper in all buildings with twenty-five employees or more.

1.13.5 Develop and Establish Objectives and Strategies for the Reuse and Recycling of Construction Aggregate and Recycled Concrete Materials

Effective January 1, 2016 RCW 70.95.805 requires that local governmental entities with a population of one hundred thousand residents or more must, as part of their contracting process, request and accept bids that include the use of construction aggregate and recycled concrete materials for each transportation, roadway, street, highway, or other transportation infrastructure project. Prior to awarding a contract for a transportation, roadway, street, highway, or other transportation infrastructure project, the local governmental entity must compare the lowest responsible bid proposing to use construction aggregate and recycled concrete materials with the lowest responsible bid not proposing to use construction aggregate and recycled concrete materials, and award the contract to the bidder proposing to use the highest percentage of construction aggregate and recycled concrete materials if that bid is the same as, or less than, a bidder not proposing to use construction aggregate and recycled concrete materials or proposing to use a lower percentage of construction aggregate and recycled concrete materials.

1.13.6 Quarantine – Agricultural Pests

The Washington State Department of Agriculture amended Chapter 16-470 WAC by adding municipal solid waste, yard debris, organic feedstocks, organic materials, and agricultural wastes to the list of commodities regulated under the apple maggot quarantine. Special permits are required for the following:

- Transportation and disposition of municipal solid waste from an area under quarantine for disposal at a solid waste landfill or disposal facility in the apple maggot and plum curculio pest-free area.
- Transportation and disposition of yard debris, organic feedstocks, organic materials, and agricultural wastes from the area under quarantine for disposal at a solid waste landfill or treatment at a composting facility in the apple maggot and plum curculio pest-free area.

Refer to Chapter 5 regarding Organics for additional information regarding how these rules affect solid waste in Yakima County.

1.13.7 Landfill Gas and Air Permitting

The following landfill gas / air permitting regulations are either being introduced or amended in 2016:

- Federal New Source Performance Standards (NSPS) and Emission Guidelines (EG): These rules are under revision to reduce the annual Non-Methane Organic Compound (NMOC) emission threshold/trigger for an active LFG collection and control system (GCCS) from 50 Mg/year down to 34 Mg/year. The EPA issued final updates to the NSPS (40 CFR Subpart XXX) and the EG (40 CFR Subpart Cf) on July 14, 2016. These subparts have been finalized but not yet published in the Federal Register (as of the date of this Plan). The updating of the EG will be applicable to the existing County landfills after the local Administrator (Yakima Regional Clean Air Agency) submits the required implementation plan to EPA within 9 months of publication in the Federal Register. The EPA will then review and approve the implementation plan in order for the rule to be promulgated and active.
- Ecology adopted a new Clean Air Rule (Chapter 173-442 WAC) in September 2016 described as a type of cap and trade program. The documentation published by Ecology indicated THLF may be affected by this proposed rule.

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Chapter 2.0 WASTE STREAM

2.1 INTRODUCTION

This chapter provides information on population and waste generation rates. This data is used in various ways in the following chapters, such as assessing the need for or determining the impact of a proposed new program.

2.2 WASTE STREAM AND POPULATION PROJECTIONS

2.2.1 Population and Waste Generation Rates

Population

Current population levels and future population growth are important factors to consider for solid waste management plans. People create solid waste and in general, the more people there are (now and in the future), the more waste is created.

Table 2.1 provides current and future estimates of the population in Yakima County. This table uses population figures produced by the Washington State Office of Financial Management (OFM), which OFM based on Census 2010 results and adjustments made through 2015. For future population projections, the OFM actually produces three different sets of forecasts for population growth: a low, medium, and high series. The medium series figures are used in Yakima County's Comprehensive Plan (Plan 2015) and in this Plan.

In addition to the population figures shown in Table 2.1, there are a large number of temporary residents who assist with farm work including general fieldwork, harvesting, and processing fruit. The number of these seasonal and migrant workers was estimated in a statewide study of this issue more than a decade ago, and no more recent study was found. For Yakima County, the number of seasonal and migrant workers, including family members who accompany them, was estimated to be 82,000 additional people per year (URS 2010).

According to the 2010 Census, Yakima County is the second most populated county in Eastern Washington and the eighth most populated county in the state.

Table 2.1 Current and Future Population Estimates

Area	2005[1]	2008[1]	2010[2]	2013[2]	2015[2]	2020[3]	2025[3]	2030[3]	2035[3]
Yakima County, Total	231,902	239,524	243,231	247,250	249,970	269,347	282,057	294,445	306,636
Unincorporated Areas	87,019	83,787	83,755	84,910	85,985	92,650	97,022	101,284	105,477
Incorporated Areas	144,883	155,737	159,476	162,340	163,985	176,697	185,035	193,161	201,159
Cities:									
Grandview	9,453	10,588	10,862	11,010	11,200	12,068	12,638	13,193	13,739
Granger	2,951	3,158	3,246	3,315	3,640	3,922	4,107	4,288	4,465
Harrah	629	636	630	645	650	700	733	766	797
Mabton	2,114	2,174	2,286	2,305	2,310	2,489	2,607	2,721	2,834
Moxee	1,464	2,825	3,308	3,655	3,810	4,105	4,299	4,488	4,674
Naches	755	756	795	805	830	894	937	978	1,018
Selah	6,726	7,063	7,147	7,340	7,495	8,076	8,457	8,829	9,194
Sunnyside	14,804	15,552	15,858	16,200	16,280	17,542	18,370	19,177	19,971
Tieton	1,191	1,188	1,191	1,235	1,255	1,352	1,416	1,478	1,539
Toppenish	8,959	9,055	8,949	8,950	8,965	9,660	10,116	10,560	10,997
Union Gap	5,809	5,931	6,047	6,110	6,150	6,627	6,939	7,244	7,544
Wapato	4,695	4,814	4,997	5,035	5,040	5,431	5,687	5,937	6,183
Yakima	82,649	89,138	91,196	92,620	93,220	100,446	105,186	109,806	114,352
Zillah	2,684	2,859	2,964	3,115	3,140	3,383	3,543	3,699	3,852

Notes:

1. Data for these years are from the Office of Financial Management's "Intercensal Estimates of April 1 Population and Housing, 2000-2010," http://www.ofm.wa.gov/pop/april1/hseries/default.asp. (OFM 2011).
2. Data for these years are from the Office of Financial Management's " April 1, 2015 Population of Cities, Towns and Counties, 2010-2015," http://www.ofm.wa.gov/pop/april1/default.asp. (OFM 2015).
3. Total population data for the years 2020 through 2030 is from the OFM's "Projections of the Total Resident Population for the Growth Management Act, Medium Series: 2010 to 2040 by five year intervals," http://www.ofm.wa.gov/pop/gma/projections12/projections12.asp. (OFM 2012). Population figures by area and city for the years 2020 through 2030 assume the same breakdown as 2015.
4. Population estimates for years used in later calculation but not included in OFM data were extrapolated from surrounding years and are as follows: 2014 population is 248,800, 2021 is 271,890, and 2035 is 306,640.

Waste Generation Rates

The residents generate a larger portion of the solid waste than businesses in Yakima County. According to the 2015 *Yakima County Waste Characterization Study* (Cascadia Consulting Group 2015), 59.8% of Yakima County's waste stream is from residential sources, including the waste collected through curbside service and the waste self-hauled by residents directly to County disposal facilities. Non-residential generators, including businesses that have their garbage collected by others and those businesses that self-haul their garbage to a County disposal facility, contribute the other 40.2%. Hence, where people live is a factor for collection, transfer and disposal services. Where people work is also a factor, although in general, employment is more centralized and therefore less of an issue for collection services.

Washington State defines solid waste as "all putrescible and nonputrescible solid and semisolid wastes including, but not limited to, garbage, rubbish, ashes, industrial wastes, swill, sewage sludge, demolition and construction wastes, abandoned vehicles or parts thereof, contaminated soils and contaminated dredged material, and recyclable materials" (WAC 173-350-100).

This Plan focuses primarily on MSW, consisting of those wastes generated by residential and commercial sources that are meant to be handled by Yakima County's solid waste disposal system. Wastes generated by industrial and agricultural sources are generally included to the extent that these are similar to what is disposed through Yakima County's system and they do not require special handling. Special wastes handled separately by these sources are only addressed briefly in this Plan.

Table 2.2 shows the solid waste disposed in Yakima County at County-owned transfer and disposal facilities. This table also shows the amount of materials recycled or diverted through various drop-off and collection programs in Yakima County as well as the amounts of C&D debris and other special wastes disposed of in Yakima County or taken to other facilities. It is important to account for all of these materials in developing a waste generation rate because tonnages may shift from one facility to another in the future due to new programs, changes in rates, or other factors. The recycled and diverted tonnages, as well as the C&D and special waste tonnages, are 2013 data because this is the most recent data currently available from the Washington State Department of Ecology's annual survey.

Table 2.2 Current Waste Generation Rate (2014)

Facility and Waste Stream	Annual Amount, Tons
MSW Garbage:	
Terrace Heights Landfill	166,135
Cheyne Landfill Total[1]	73,137
Lower Valley Transfer Station	34,271
Cheyne Landfill	38,866
Total[2]	**239,272**
MSW Recycling and Composting[3,4]	91,573
MSW Subtotal	**330,845**
C&D Materials to Other Landfills	118,119
Special Wastes to Other Landfills	6,645
Additional Diverted Materials[3]	92,655
Grand Total, All Solid Waste	**548,264**
Population (2014)	248,800
Waste Generation Rate, lb/person/year	4,407
Waste Generation Rate, lb/person/day	12.1

Notes: MSW tonnages are 2014 figures from Yakima County records. The recycling, C&D and special waste tonnages are 2013 figures from the annual survey conducted by the Department of Ecology.

1. The Cheyne Landfill accepts all the MSW from the Lower Valley Transfer Station and the Cheyne Transfer Station.
2. Due to differences in Yakima County's data records, this figure does not match the total quantity of waste provided by Yakima County for use in the Yakima County WCS.
3. See Section 2.2.2 for an explanation of recycled versus diverted materials. MSW recycling includes composting.
4. Yard waste self-hauled to Cheyne Landfill and Lower Valley Transfer Station is composted. Due to the apple maggot quarantine boundaries, starting in September 2015 yard waste delivered to the Terrace Heights Landfill was disposed of via beneficial reuse at the site as alternative daily cover or on roads for dust control as approved by the Yakima Health District, or disposed of at a facility in Moxee for use as a pad under biosolids.

In Table 2.3, waste quantities have been projected using the current (2014) per capita generation rate multiplied by population forecasts for Yakima County, consistent with the methodology used in the 2010 Plan. The current generation rate was calculated by combining the tons disposed in 2014 (239,272 tons) with the tons recycled, diverted, or sent to special landfills in 2013 (308,992 tons) and then dividing by the population in 2014. By applying the current per capita rate to future years, the projected figures for 2015 through 2035 assume no change in waste generation or disposal practices, or in the percentage of material recycled and reduced. This approach also assumes no change in the amount of waste migrating to out-of-county facilities and other factors (such as the ratio of annual tourists and migrant workers to the general county population).

Table 2.3 Projected Solid Waste Generation 2014-2035

	Total Population[1]	Waste Generated[2]	Waste Generation Rate	Amount Recycled[3]	Amount Diverted[3]	MSW Disposed[3]	Other Wastes[3,4]
Actual Amounts:							
2014	248,800	548,260	12.1	91,573 (17%)	92,655 (17%)	239,272 (44%)	124,764 (23%)
Projected Amounts[5]:							
2015	249,970	550,840	12.1	92,000	93,090	240,400	125,350
2020	269,350	593,540	12.1	99,140	100,310	259,030	135,070
2021	271,890	599,140	12.1	100,070	101,250	261,480	136,340
2025	282,060	621,550	12.1	103,810	105,040	271,260	141,440
2030	294,450	648,850	12.1	108,370	109,650	283,170	147,650
2035	306,640	675,710	12.1	112,860	114,190	294,890	153,770

Notes: All figures, except the year, population and generation rate, are shown as tons per year (TPY). The waste generation rate is shown as pounds per person per day. Population and annual tons are all rounded to the nearest ten.

1. Population figures are from Table 2-1.
2. Projected waste generation figures for 2015 through 2035 are based on the estimated waste generation rate for 2014 (12.1 pounds per person per day) and population forecasts.
3. The projected amounts of recycling, other diversion, disposed MSW and other wastes assume the same percentage of the total waste generated as in Table 2.2.
4. Other wastes include C&D wastes disposed at limited purpose landfills and special wastes.
5. Waste projections are all rounded to the nearest ten tons.

2.2.2 Recycling Data

The most recent recycling survey conducted by the Department of Ecology suggests that 28% of Yakima County's municipal solid waste was recycled or composted (see Table 2.4). This figure is generally called a *recycling* rate, although it sometimes includes composting and some reuse as well. The recycling rate is based on 91,573 tons reported as being recycled in 2013, versus 330,845 tons of waste disposed in 2014.

The Department of Ecology also defines a *diversion* rate, which includes several additional materials shown in Table 2.4 that are not included in the stricter recycling rate. These diverted materials include materials burned for energy recovery and other specific materials such as asphalt and concrete, which are still being put to a beneficial use but simply do not count as recycling as defined by Washington State. For instance, in 2013 a large amount of asphalt and concrete was crushed for reuse; there was also a significant amount of "compost furnish" (agricultural waste and manure captured in the "other organics" in Table 2-4) produced in Yakima County. Diverted materials also include wastes delivered to C&D landfills and special wastes sent to other facilities. Including these other wastes equates to an overall diversion rate of 34%.

There is little data available on the current levels of waste diverted by most forms of waste reduction, although a few categories of reuse (especially textiles and building materials) are at least partially tracked. If all waste reduction activities and the missing recycling tonnages could be accounted for, Yakima County's current diversion rate would be significantly greater.

Table 2.4 Recycled and Diverted Materials (2013)

Recycled Materials	Annual Tons	% of Total Tons of MSW	% of Total Tons Generated
Aluminum Cans	415	<1%	<1%
Cardboard	23,881	7%	4%
Electronics	669	<1%	<1%
Fluorescent Light Bulbs	26	<1%	<1%
Food Waste	6,479	2%	1%
Glass	541	<1%	<1%
Grease, Other Rendering	807	<1%	<1%
HDPE Plastics	560	<1%	<1%
LDPE Plastics	439	<1%	<1%
Metals/White Goods	33,803	10%	6%
Mixed Plastics	3,103	1%	1%
Mixed Waste Paper	5,738	2%	1%
Newspaper	1,055	<1%	<1%
PET Plastics	357	<1%	<1%
Textiles	323	<1%	<1%
Tin Cans	159	<1%	<1%
Tires	71	<1%	<1%
Used Motor Oil	1,637	<1%	<1%
Vehicle Batteries	1,091	<1%	<1%
Wood	918	<1%	<1%
Yard Debris	9,502	3%	2%
Tons Recycled/Composted	91,573		
Tons Disposed	239,272		
Total Tons of MSW	330,845		
Recycling Rate	28%		
Diverted Materials			
Antifreeze	128		<1%
Asphalt/Concrete	15,080		3%
Food Waste	24,387		4%
Household Items, Reuse	NA		NA
Tires (Energy Recovery, Baled, and Reuse)	1,133		<1%
Wood (Energy Recovery and Reuse)	7,172		1%
Other Organics	44,085		8%
Other	671		<1%
Tons Diverted	92,655		
Tons Diverted or Recycled/Composted	184,229		
Tons Disposed	239,272		
Other Wastes	124,764		
Total Tons Generated	548,264[1]		
Overall Diversion Rate	34%		

Notes: Data for recycled and diverted materials, and for the amount of "other wastes," are from the 2013 annual survey conducted by the Department of Ecology. The figure for tons disposed is from Yakima County 2014 records.

1. Due to rounding in the tables, sums may not exactly match subtotals and totals shown.

2.2.3 Composition of Disposed MSW

Composition data is useful for designing solid waste handling and disposal programs. A WCS was conducted for Yakima County in 2015. The WCS divided the waste stream into four generator groups based on the source of the waste. Waste was sorted into 71 categories of materials. This study was conducted at Yakima County's three primary waste handling and disposal facilities:

- Terrace Heights Landfill (THLF)
- Cheyne Landfill (CLF)
- Lower Valley Transfer Station (LVTS)

C&D and other special wastes are included in the results only to the extent that those materials were disposed at these facilities in 2015. A summary of the results of this study is shown in Table 2.5 and Figure 2.1. The data shown in Table 2.5 includes composition and quantity figures by material for Yakima County's entire waste stream, plus the percentage breakdown for specific sources (types of generators). The tonnages for each material are based on the waste tonnages received in 2014 (239,272 tons) at the three primary facilities (THLF, CLF, and LVTS). Diverted materials (recycled materials and yard waste) are not included in the waste tonnage figure because the study sampled only materials brought to the three facilities for disposal as garbage. Likewise, wastes disposed at limited purpose landfills and other special wastes are also not included in the waste tonnages.

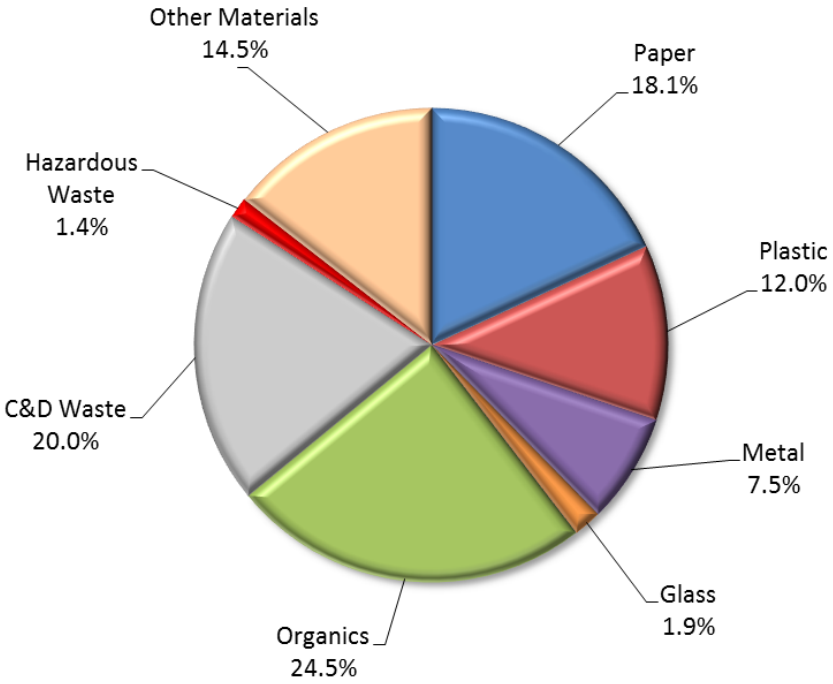

Figure 2.1 Yakima County Composition of Disposed MSW

The specific types of generators examined by the WCS were:

- **Residential:** Waste collected curbside by private waste haulers and municipalities, primarily from single-family homes. This also includes small multi-family homes (such as duplexes, triplexes, and quadplexes) when their waste is collected curbside along residential hauling routes.
- **Commercial:** Waste collected by private waste haulers from commercial, industrial, construction, and institutional sources, typically using packer trucks and roll-off containers. This sector also includes large multi-family complexes whose waste is collected along commercial hauling routes.
- **Self-haul:** Waste that is delivered by entities other than private waste haulers and municipal collection agencies to County disposal sites. This includes residents, landscapers, contractors, and others. This sector is further divided into two subsectors, residential self-haul and non-residential self-haul.
    - **Residential Self-haul:** Residential waste brought in by the homeowners and renters (or landlords) who generated the waste, typically delivered to the disposal site using cars and pick-up trucks.
    - **Non-residential Self-haul:** Waste from businesses or contractors brought in by an employee of that business, typically delivered to the disposal sites using pick-up trucks and larger trucks.

Waste composition can be expected to change in the future due to changes in consumption patterns, packaging methods, disposal habits, tourism and other factors. These changes are very difficult to predict in the long term. Furthermore, implementation of this Plan is expected to affect waste composition in Yakima County by changing purchasing and disposal habits.

Table 2.5 Solid Waste Composition in Yakima County

-	Entire Waste Stream		Residential		Residential Self-Haul		Commercial		Non-Res. Self-Haul	
Materials	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material
Paper	**18.1%**	**43,415**	23.9%	29,699	7.1%	1,354	14.2%	11,969	3.2%	387
Cardboard	4.9%	11,825	6.2%	7,740	3.0%	572	3.9%	3,265	2.0%	246
Newspaper	1.0%	2,473	1.8%	2,191	0.1%	26	0.3%	255	0.0%	0
Other Recyclable Paper	5.8%	13,825	8.1%	10,056	2.3%	430	3.8%	3,233	0.8%	103
Compostable Paper	4.1%	9,862	6.8%	8,473	1.1%	205	1.4%	1,180	0.0%	1
Non-Recoverable Paper	2.3%	5,431	1.0%	1,240	0.6%	121	4.8%	4,037	0.3%	36
Plastic	**12.0%**	**28,722**	13.2%	16,331	8.9%	1,697	10.3%	8,674	16.5%	2,020
PET Bottles	0.8%	1,904	1.4%	1,690	0.3%	48	0.2%	164	0.0%	1
HDPE Bottles	0.6%	1,381	0.8%	1,023	0.2%	47	0.4%	310	0.0%	1
Other Recyclable Plastic	4.3%	10,188	5.3%	6,551	4.8%	903	2.4%	2,054	5.6%	679
Recyclable Film	0.7%	1,654	0.6%	801	0.1%	18	1.0%	835	0.0%	-
Compostable Plastic	0.0%	28	0.0%	26	0.0%	-	0.0%	2	0.0%	-
Non-Recyclable Plastic	5.7%	13,567	5.0%	6,240	3.6%	681	6.3%	5,308	10.9%	1,339
Glass	**1.9%**	**4,557**	3.0%	3,689	1.2%	221	0.7%	560	0.7%	86
Clear Containers	0.8%	1,951	1.3%	1,624	0.6%	117	0.2%	208	0.0%	1
Brown Containers	0.5%	1,287	0.8%	1,027	0.3%	53	0.2%	206	0.0%	-
Green Containers	0.2%	491	0.3%	426	0.1%	15	0.1%	49	0.0%	1
Non-Recyclable Glass	0.3%	829	0.5%	612	0.2%	36	0.1%	97	0.7%	85
Metals	**7.5%**	**17,880**	6.6%	8,248	18.5%	3,510	6.2%	5,169	7.8%	952
Aluminum Cans	0.4%	999	0.7%	906	0.1%	19	0.1%	73	0.0%	0
Tin Cans	0.4%	947	0.7%	889	0.1%	22	0.0%	35	0.0%	1
Other Ferrous	1.7%	3,959	0.6%	708	7.8%	1,480	1.7%	1,440	2.7%	332
Other Non-Ferrous	0.1%	232	0.1%	160	0.0%	5	0.1%	67	0.0%	-
Computers, Electronics	2.3%	5,560	2.2%	2,675	6.5%	1,233	1.8%	1,484	1.4%	167
Non-Recyclable Metal	2.6%	6,183	2.3%	2,910	4.0%	751	2.5%	2,071	3.7%	452

Table 2.5 Solid Waste Composition in Yakima County

Materials	Entire Waste Stream		Residential		Residential Self-Haul		Commercial		Non-Res. Self-Haul	
	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material	Percent by Weight	Tons of Material
Organics	**29.4%**	**70,363**	38.2%	47,338	17.2%	3,268	22.6%	18,973	6.3%	773
Food Waste	14.5%	34,783	15.8%	19,654	4.8%	911	16.8%	14,085	1.1%	134
Yard Debris	10.0%	23,868	13.7%	17,038	10.8%	2,041	4.9%	4,144	5.2%	639
Non-Recoverable Organics	4.9%	11,711	8.6%	10,647	1.7%	315	0.9%	745	0.0%	-
Other Materials	**11.0%**	**26,377**	9.6%	11,956	15.1%	2,870	12.5%	10,523	8.4%	1,029
Textiles	3.9%	9,324	6.0%	7,396	2.9%	545	1.2%	1,046	2.7%	333
Carpeting	3.5%	8,490	1.0%	1,218	5.9%	1,123	7.0%	5,871	2.3%	282
Mattresses	0.4%	955	0.0%	-	2.4%	447	0.6%	508	0.0%	-
Tires, Rubber Products	0.3%	679	0.4%	526	0.0%	-	0.2%	153	0.0%	-
Recoverable Haz./Special Wastes[1]	0.0%	9	0.0%	5	0.0%	0	0.0%	4	0.0%	-
Other Haz./Special Wastes	0.3%	689	0.4%	497	0.0%	4	0.2%	146	0.3%	42
Other Non-Recoverable Materials	2.6%	6,232	1.9%	2,315	4.0%	750	3.3%	2,795	3.1%	373
Construction Debris	**20.0%**	**47,957**	5.5%	6,798	31.9%	6,057	33.5%	28,144	57.1%	6,979
Clean Wood	7.9%	18,918	2.1%	2,549	8.1%	1,536	15.1%	12,688	17.6%	2,155
Compostable Wood	7.6%	18,142	2.6%	3,174	10.2%	1,930	12.0%	10,052	24.5%	2,993
Recoverable C&D	4.1%	9,902	0.8%	1,011	13.1%	2,490	5.8%	4,841	12.8%	1,563
Non-Recoverable C&D	0.4%	996	0.1%	65	0.5%	100	0.7%	563	2.2%	269
Total Tons Disposed[2]		**239,272**		124,059		18,976		84,012		12,225
Total Recoverable Materials[3]	57.7%	138,144	67.2%	83,354	46.5%	8,825	48.6%	40,821	42.0%	5,132

Notes: From the Yakima County WCS (Cascadia Consulting Group 2015).

[1] Due to rounding in the tables, sums may not exactly match subtotals and totals shown.

2. Material category includes car batteries and fluorescent tubes.

3. Composition percentages were calculated based on tonnage data provided by Yakima County for the WCS, which was 239,149 tons. An additional 124 tons later reported by Yakima County were added to the commercial sector and non-residential self-haul sectors in this table; however, composition for the entire waste stream were not adjusted to reflect this change. As a result, tons of an individual material for each waste stream may not sum exactly to the tons of that material for the entire waste stream.

4. Recoverable materials only includes materials typically accepted by curbside programs, as described in Chapter 4 Waste Reduction and Recycling, and not other recoverable materials such as clean film, mattresses, or construction debris.

Chapter 3.0 PROMOTION AND EDUCATION

3.1 INTRODUCTION

This chapter discusses existing promotion and education programs related to solid waste management, identifies relevant planning issues, and develops/evaluates alternative promotion and education strategies.

3.2 BACKGROUND

Public education and promotion are important elements for solid waste management systems. Yakima County residents and businesses need to be informed as to the proper and available methods for waste reduction, disposal and recycling. Yakima County Public Services Solid Waste Division prioritizes this aspect of operations, and currently has two full-time staff members responsible for promotion and education activities. Promotional activities generally extend beyond education and help to support activities such as waste reduction and recycling, although rarely is there a strict line drawn between "promotion" and "education." The programs described in this chapter encourage residents and businesses to take the extra steps to recycle or compost appropriate waste streams, or to avoid generating waste in the first place.

3.2.1 Goals and Objectives for Promotion and Education

County goals and objectives specific to promotion and education (as addressed in Chapter 1 of this Plan) include the following:

- Promote the use of innovative and economical waste handling methods;
- Emphasize waste reduction as a fundamental management strategy;
- Support public-private partnerships for waste reduction and recycling programs;
- Encourage the recovery of marketable resources from the waste stream; and,
- Reduce the occurrence and environmental impacts associated with illegal dumping.

3.3 EXISTING PROMOTION AND EDUCATION PROGRAM ELEMENTS

The Yakima County Public Services Solid Waste Division manages and delivers an extensive array of outreach programs designed to educate residents, students, and businesses about how to recycle, compost, and produce less waste. These programs also provide information on how to reduce and/or properly dispose of moderate risk wastes. The Yakima County Public Services Solid Waste Division employs two full-time staff members tasked with promotion and education activities, materials and programs, as described below.

3.3.1 Public Outreach Promotional Resources and Activities

- **Website** – Yakima County continues to improve its website, www.yakimarecycles.com. This website features information about recycling resources, natural gardening, waste reduction, household hazardous waste and garbage rates. The "Yakima County Recycling Guide" brochure is also available on the County website
- **Landfill Tours/Education** – Yakima County staff provide landfill tours that are interactive and that engage students with presentations and interesting handouts.
- **Public Events Recycling** – Yakima County has established a program to loan beverage container recycling bins free of charge to any group with an event that is open to the public and that serves or sells beverages in aluminum or plastic containers. These recycle bins have been placed at events such as the Central Washington State Fair, Central Washington Home Show, Hot Shots Basketball Tournament, Softball and Soccer Tournaments, Yakima Folklife Festival, Case of the Blues, and numerous other public events.
- **Newspaper** – The "Yakima County Recycling Guide" is placed every other year in the *Yakima Herald-Republic* and the local Spanish-language *El Sol* summarizing recycling opportunities available in Yakima County.
- **Electronic Billboard** – Yakima County promotes environmental messages throughout the year on an electronic billboard on South First Street. This billboard has addressed recycling, household hazardous waste collection, curbside recycling, unsecured loads, electronic recycling, Earth Day, and other topics.
- **Movie Theater and Radio Advertisements** – Yakima County advertises at movie theaters and on radio stations to promote environmental messages and recycling. These ads change topics every few months, including messages regarding reusable shopping bags, recycling electronics, tire disposal and more.

3.3.2 Waste Reduction and Recycling Education

- **School Recycling** – Yakima County staff provide worm composting, backyard composting, and recycling presentations to school children in grades 2-12 in Yakima County to encourage recycling and waste reduction. Free presentations are also provided to school staff to encourage the establishment of school recycling programs. Yakima County provides two different types of recycle bins for use on school grounds and provides a demonstration of the recycle bin use (what can be recycled), as well as posters and classroom support materials.
- **Business Recycling** – Yakima County staff work with businesses and organizations to encourage recycling in the workplace. Yakima County also provides staff education and recycling bins for select non-profits to establish new programs and reinforce existing programs.
- **Public Event Recycling Education** – Yakima County provides recycling education and outreach with booths at several events throughout the year, including the Central Washington State Fair, Central Washington Home Show, Case of the Blues, Arboretum Arbor Festival, among others.

- **Organics Education** – Yakima County encourages residents to divert their organics from the waste stream through backyard composting or participating in curbside yard waste collection where available. Classes are hosted by Yakima County Public Services Solid Waste Division staff and local master gardeners to encourage composting and natural gardening practices. Ongoing education classes are also provided by Yakima County Public Services Solid Waste Division in partnership with the Yakima Area Arboretum on topics such as grass-cycling, worm composting, natural gardening, and xeriscaping (low water usage gardening).
- **Youth Environmental Summit** (http://www.yakimacounty.us/687/Youth-Environment-Summit) – The Yakima County Public Services Solid Waste Division has developed this free event for middle, junior and senior high students and staff. The goal of the summit is to empower students and staff to be environmental advocates and make a difference in their schools and communities. The one-day event occurs every other year and usually has an attendance in excess of 500 students. The event includes guest speakers, educational displays and opportunities to network with other students and educators about developing green practices in their schools. Fifteen plus environmental organizations exhibit at the summit.

3.3.3 Household/Small Quantity Generator Waste Education

Several of the public outreach activities, including the distribution of the "Yakima County Recycling Guide" brochure, address household hazardous waste disposal options and education. Yakima County has also sponsored free mercury collection events and free oil collection events.

Many of the activities conducted by Yakima County to educate residents about HHW also serve to educate businesses about SQG wastes. There are also specific activities that target businesses, such as a brochure called "Business Hazardous Waste Disposal" that describes options for proper handling and disposal of SQG wastes.

3.3.4 Product Stewardship Education

Yakima County is a steering committee member of the Northwest Product Stewardship Council and applies product stewardship practices within the county. Specifically, Yakima County has developed a network of computer recyclers to divert electronics from the waste stream, and this network is promoted on the County website at www.yakimarecycles.com and through the "Yakima County Recycling Guide" brochure.

3.3.5 Litter, Illegal Dumping and Secure Load Education

Several of the public outreach activities, including the distribution of the "Yakima County Recycling Guide" brochure, address the need to secure loads, higher landfill fees for unsecured loads, and potential fines for not properly securing loads. Yakima County also has in place an unsecured load ordinance to help prevent roadside litter and to encourage the safe transport of material on roadways. The Yakima County unsecured load fee can be $5 or $15 depending on vehicle capacity. Washington State also has an unsecured load fine which is $194 and an additional fine for littering which can range from $103 to $5,000 depending on the size of the item.

3.3.6 Private Company Outreach and Promotion Programs

Outreach and promotion efforts by the private sector are often conducted in support of their programs, and many also participate in spreading a broader message when possible. Examples of specific activities are described below.

- **Central Washington Recycling (**http://michelsenpackaging.com/recycling/) – This local business conducts outreach and education for their commercial accounts, and also provides technical assistance as needed to set up new programs. They also conduct tours of their operations for school groups and other organizations, and promote participation in the recycling drop-off sites to their clients.
- **Basin Disposal and Yakima Waste Systems** – The two main private garbage collection companies that operate in Yakima County, Basin Disposal and Yakima Waste Systems, collect recyclables from both commercial and residential accounts. These companies provide information to their customers on proper disposal and recycling practices, as well as other recycling opportunities. This information is provided in the form of brochures, bill inserts and labels on containers. In addition, Yakima Waste Systems has done joint mailings with the City of Yakima.

3.4 STATUS OF 2010 RECOMMENDATIONS

The 2010 Plan had one recommended action, PE1, which included multiple activities. The following table describes the status of the recommended activities outlined in the 2010 Plan.

Table 3.1. Status of 2010 Recommendations

Recommendations	Status
Continue existing public education and promotion activities.	Ongoing
Provide additional public education for new or expanded waste diversion programs.	Ongoing
Provide additional public education to support the yard debris disposal ban and to inform people about alternative handling options.	Not applicable – yard debris disposal ban did not occur
Promote the collection system for e-waste.	Ongoing
Address illegal dumping through public education in addition to the development of a citizens' task force.	Ongoing. Limited implementation of Citizen's Task Force
Develop and implement a business recognition program to help promote recycling and waste reduction by the commercial sector.	Not implemented

3.5 PLANNING ISSUES

Currently, Yakima County Public Services Solid Waste Division provides the majority of the promotion, education and outreach programs conducted county-wide. Designation and/or sharing of this continued responsibility will need to be determined. The subsections below address the planning issues associated with each of the existing program categories:

3.5.1 Public Outreach Promotional Resources and Activities

- **Website** – The website for solid waste and recycling information, www.yakimarecycles.com, is an excellent tool and should continue to be maintained and expanded as appropriate.
- **Landfill Tours/Education** – Landfill tours and related educational activities provide first-hand exposure to disposal issues and should be continued.
- **Public Education/Outreach Events** – Education and outreach at public events is an important tool for distributing information and should be continued.
- **Radio/Newspaper/Billboard/Movie Theater Advertising** – Mass media advertising is essential for reaching people who might otherwise miss the messages distributed through other means such as flyers in utility bills. These advertising activities should be continued.

3.5.2 Waste Reduction and Recycling Education

- **School/Business/Public Event Recycling** – Existing efforts for school recycling programs are working well and should be continued. There is the "Washington Green Schools" program, which provides online resources for environmental improvements (see www.wagreenschools.org/). This program provides schools with support and resources to help schools expand waste reduction, recycling, and other conservation education and practices. A significant amount of material is already being collected for recycling from the businesses in Yakima County, but more could be done to encourage waste reduction and other environmental programs. Current efforts to inform event organizers and support public event recycling appear to be working well and should be continued.
- **Organics Education** – Any new programs should be publicized and promoted in the first year or two of operation and continued throughout the life of the program.
- **Youth Environmental Summit** – This event is highly attended and is a showcase for waste and recycling education in Yakima County. Participation in this event should continue.

3.5.3 Small Quantity Generator Waste Education

Existing efforts do a good job of informing Small Quantity Generators (SQG) about proper handling and disposal practices for MRW, but more technical assistance could be provided to businesses, schools, and agricultural generators. See Chapter 12 of this Plan for more detailed discussion, planning issues, and recommendations

3.5.4 Product Stewardship Education

- **Pharmaceuticals** – Programs to address waste pharmaceuticals are currently under development by Washington State and it is unknown what role Yakima County or other local service-providers may play in any new programs to address this waste material. Yakima County's online resources currently provide guidance for disposal of medicines (see www.yakimacounty.us/734/Medicine-Disposal).

- **Paint** – Waste paint is currently handled at Yakima County's Household & Small Business Waste Collection Facility (HSBWCF) located at THLF, but a different approach may be necessary or desirable in the future if a new product stewardship program for paint is implemented by manufacturers. In this case, public education may be needed to inform waste generators of the new program.
- **Tires** – Product stewardship programs to address waste tires are currently in the planning stages and it is unknown what role Yakima County or other local service-providers (auto repair shops and tire dealers) may have in any new programs to address this waste material. This and other programs are being evaluated by the Northwest Product Stewardship Council (see www.productstewardship.net/).
- **Fluorescent Tubes** – The LightRecycle Washington program began on January 1, 2015 for the collection and recycling of mercury-containing lights. The program's website (www.LightRecycle.org) lists specific drop off collection sites in Yakima County where residents and businesses are able to recycle up to 10 mercury-containing lights per day free of charge. This collection option should be publicized. Additionally, any publicity promoting the use of fluorescent tubes or compact fluorescent light bulbs should also inform customers about disposal options.

3.5.5 Litter, Illegal Dumping and Secure Load Education

Litter and illegal dumping are chronic problems in Yakima County, and additional efforts in the schools could help educate children that these are undesirable activities. The Adopt-a-Road program is helping to address roadside litter and should be continued. The fines and education efforts being conducted for properly securing loads are effective and should be continued.

3.5.6 Private Company Outreach and Promotion Programs

No specific needs or service gaps have been identified for private programs.

3.6 ALTERNATIVE STRATEGIES

3.6.1 Alternatives

Alternative A – Public and Private Roles

The Yakima County Public Services Solid Waste Division has historically taken the lead in public education and promotion of waste management programs. This alternative proposes a larger role for the cities, through an active partnership with Yakima County. Existing staff could continue to take the lead in most areas and could provide technical assistance on an as needed basis. Other organizations, including service groups, schools, Yakima Waste Systems, Basin Disposal, and other private companies (as appropriate to the program or material being promoted), could also conduct education for their own specific programs.

Alternative B – Additional Education for New Programs

Efforts to inform residents and businesses about existing recycling and waste reduction options need to be conducted on an ongoing basis, and more education is generally better in terms of results for existing programs. As new programs are developed or existing programs expanded, increased education will also be needed on at least a

temporary basis to ensure that people are aware of the opportunity and participation guidelines. Examples of new programs that will need to be publicized are the fluorescent tubes and possible tire product stewardship programs.

Alternative C – Promotion for Green Building Activities

Efforts to promote green building practices could be increased with cooperation from private and non-profit activities. Because green building involves many disciplines, an effective approach to conveying the message is to partner with associations whose members have a particular interest in learning about green building methods. Additional support for these activities is further discussed in Chapter 9.

Alternative D – Technical Assistance for Small Quantity Generators

Existing efforts are doing a commendable job of informing SQG about proper handling and disposal practices for MRW, but more technical assistance could be provided to commercial small quantity generators (businesses, schools, or agricultural generators). Public education alternatives for these generators could include Yakima County Public Services Solid Waste Division staff, private consultants, or citizen-action groups offering assistance to business, organizations, and other waste generators. This education could utilize fact sheets, web resources, a telephone hot line, workshops, newsletters, and/or on-site consultations. This is discussed further in Chapter 12.

Alternative E – Illegal Dumping Education

Litter and illegal dumping are chronic problems in Yakima County, and these are a priority for future work. Public education could be increased to discourage this behavior, by publicizing the harmful aspects of this activity and also informing potential violators of the applicable fines and civil penalties. Additional efforts in the schools would help educate children that these are undesirable activities. A task force to address illegal dumping could also help by bringing together key people from the several organizations that are impacted by this problem.

Alternative F – Business Planning Program

More could be done to encourage businesses to participate in waste reduction and other environmental programs. Business assistance could be developed specifically for waste reduction and recycling planning. A planning approach could include informing them of options for reducing and recycling wastes specific to their waste stream, and also outlining steps for them to implement these activities. Local media could be encouraged to report on businesses that practice waste reduction.

3.6.2 Evaluation of Alternative Strategies

Alternative C is further evaluated in Chapter 9 and Alternative D is further evaluated in Chapter 12. The other alternatives are evaluated below.

Consistency with Planning Objectives

The alternative strategies support the objective of providing customers with information and education to promote recommended product stewardship, recycling, and waste management practices.

Waste Reduction / Diversion Potential

Alternative F, the business planning program, might provide the most immediate waste reduction result because this category produces the greatest amount of waste and relates to marketing of local businesses.

Customer Preferences

Waste reduction education and promotion programs typically enjoy strong customer support.

Implementation Costs

Alternative A might serve to distribute costs more evenly between the cities and the county. Alternatives B and E are the lowest cost, as they expand existing educational programs and so would be a desirable option under a cost criterion. The other alternatives fall into a low to medium range of costs.

3.6.3 Rating of Alternatives

The alternatives (with the exception of C and D, which are evaluated in other Plan Chapters) are compared with respect to the evaluation criteria in the table below. Based upon the comparison, the four alternatives are being recommended for further development and implementation.

Table 3-2. Summary Rating of the Alternative Promotion and Education Strategies

Alternative		Consistency with Planning Objectives	Waste Reduction/ Diversion Potential	Customer Preferences	Cost to Implement	Overall Rating
A	Public and Private Roles	H	H	H	L	H
B	Additional Education for New Programs	H	M	H	M	H
E	Illegal Dumping Education	H	L	M	M	M
F	Business Planning Program	H	H	M	M	H

H – High M - Medium L – Low

3.7 RECOMMENDED ACTIONS

In addition to continuing current existing public education and promotion activities, the following recommendations are made for additions or adjustments to promotion and education programs:

PE1) Continue to incorporate a larger promotion and educational role for the stakeholder cities, through an active partnership with Yakima County. Existing Yakima County Public Services Solid Waste Division staff should continue to take the lead in most areas and will provide technical assistance on an as-needed basis. Engage other organizations, including service groups, schools, Yakima Waste Systems, Basin Disposal, and other private companies (as appropriate to the program or material being promoted), to conduct education for their own specific program.

PE2) As new programs are developed, educational efforts will be coordinated.

PE3) Assist businesses in developing a waste reduction and recycling plan specific to their waste stream.

PE4) Continue to engage the media to promote waste reduction strategies.

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Chapter 4.0 Waste Reduction and Recycling

4.1 INTRODUCTION

This chapter discusses existing waste reduction and recycling programs, identifies relevant planning issues to meet local and state goals, and develops and evaluates alternative strategies.

4.2 BACKGROUND

This section discusses Yakima County's goals and describes the applicable Washington State laws and rules regarding waste reduction and recycling programs.

4.2.1 Goals and Objectives for Waste Reduction and Recycling

Yakima County goals and objectives specific to waste reduction and recycling include:

- Ensure convenient and reliable services for managing solid waste and MRW materials;
- Promote the use of innovative and economical waste handling methods;
- Emphasize waste reduction as a fundamental management strategy;
- Support public-private partnerships for waste reduction and recycling programs;
- Encourage the recovery of marketable resources from the waste stream;
- Reduce environmental impacts to air, water, and land that are associated with waste generation, transportation, handling, recycling, and disposal; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

4.2.2 State Legislation, Regulations, and Guidelines

Chapters 4 and 5 provide an update of Yakima County's methods to divert waste away from landfill disposal and to comply with Washington State requirements regarding waste reduction and recycling opportunities and programs. The State's requirements are based in the "Waste Not Washington Act" (ESHB 1671), which declared that waste reduction and recycling must become a fundamental strategy for solid waste management in Washington State. This law is reflected in various sections of the RCW and WAC. Chapter 70.95 RCW includes the following goals (among others) and requires that solid waste management plans demonstrate how these goals will be met:

- Washington State is to achieve a statewide recycling rate of 50%.
- Source separation of waste (at a minimum, separation into recyclable and non-recyclable fractions) must be a fundamental strategy of solid waste management.
- Steps should be taken to make recycling at least as affordable and convenient to the ratepayer as disposal of mixed solid waste. Such steps would require adoption of a

Yakima County service level ordinance or adoption by signatory cities of service standards that promote waste reduction and recycling, described in more detail in Section 4.5.7 and Section 4.5.8.

Other applicable State requirements are as follows:

- Develop clear criteria for designating areas as urban or rural for the purpose of providing solid waste and recycling services (RCW 70.95.092).
- Collect recyclables from homes and apartments in urban areas (RCW 70.95.097(7)(b)(i)).
- Monitor the collection of source-separated waste from non-residential sources when there is sufficient density to economically sustain a commercial collection program (RCW 70.95.090).

RCW 70.95.092 also requires that counties develop clear criteria for designating areas as urban or rural for the purpose of providing solid waste and recycling services. RCW 70.95.090(7)(b)(i) requires recyclables to be collected from homes and apartments in urban areas (with some exceptions), whereas drop-off centers and other methods can be used in rural areas.

RCW 70.95.090 requires a monitoring program for collection of source-separated waste from non-residential sources when there is sufficient density to economically sustain a commercial collection program. Yakima County achieves this by working cooperatively with Ecology and using the data Ecology collects through the annual Washington State Recycling Survey.

In summary, Yakima County's existing urban and rural collection programs and the non-residential monitoring program meet or exceed the recycling service requirements in Chapter 70.95 RCW.

4.3 EXISTING PROGRAM ELEMENTS

This section provides background information regarding waste reduction and discusses Yakima County's existing programs.

4.3.1 Status of 2010 Recommendations

The waste reduction and recycling recommendations made in the 2010 Plan and the current status of each are shown in Table 4.1.

Table 4.1 Status of 2010 Recommendations for Waste Reduction and Recycling

Recommendations	Status
WRR1) Assist Washington State in achieving the 50% recycling rate.	Ongoing
WRR2) Adopt the list of designated materials (Table 4-2, 2010 Plan) and maintain it through periodic review and updates as appropriate.	Done; review and updates ongoing
WRR3) Conduct a waste composition study to assess recycling program performance and potential.	Done
WRR4) Make curbside recycling services available in every urban incorporated area and promote these services.	Ongoing
WRR5) Provide recycling opportunities at all solid waste transfer and disposal facilities in Yakima County.	Done
WRR6) Encourage business recycling through a cooperative effort between Yakima County, cities, private collectors, service groups, and the businesses.	Ongoing
WRR7) Continue to provide support for recycling at public events.	Ongoing

Work related to a number of recommendations from the 2003 and 2010 Plans is also still ongoing and will be continued in this Plan. These efforts include the following:

- Continuing the current mix of voluntary curbside (where available) and drop-off recycling services for urban and rural residents.
- Continuing to rely on the private sector to provide recycling collection for commercial generators.
- Exploring public-sector incentives and funding for expanded curbside and drop-off recycling programs in both incorporated and unincorporated areas.
- Providing expanded and targeted education and assistance to businesses on recycling, waste reduction, and reducing toxicity of commercial waste.
- Targeting hard-to-recycle materials and newly designated recyclables collection among residents and businesses.
- Providing targeted market assistance for recyclable materials, such as through feasibility assessments, commercial technical assistance, and “buy recycled” campaigns.

In general, Yakima County has seen an increase in its diversion rate since 2007, from 23 to 34 percent. A total of 184,229 tons was reported as recycled, composted, or otherwise diverted in 2013, equal to about 1,490 pounds per person per year. Refer to Chapter 2 for data sources. This suggests that existing and ongoing programs are succeeding in increasing waste reduction and recycling in Yakima County, though more work is still needed to reach the State’s goal of a 50% recycling rate. More detail about existing waste reduction and recycling programs in Yakima County are provided in the sections that follow.

4.3.2 Waste Reduction and Reuse

Waste reduction is the highest priority for solid waste management according to Chapter 70.95 RCW and is preferred over recycling and composting because the social, environmental, and economic costs are typically lower for avoiding the creation of waste.

Waste collection fees can be used to encourage waste reduction (and recycling) through existing "pay as you throw" rates in which single-family households are charged according to the amount of garbage they discard. Avid recyclers or households that minimize waste can also choose a smaller cart, instead of 96-gallon cart, for a reduced collection cost where available in Yakima County (refer to Chapter 6 for additional information). Businesses and multifamily properties are generally already charged according to the amount of garbage disposed.

Onsite composting reduces the amount of yard debris disposed of as garbage or composted commercially. Yakima County provides educational materials for onsite composting, has distributed composting bins, and works with several groups (such as the Arboretum and Master Gardeners) to encourage these practices.

Other opportunities for reuse and waste reduction that are available in Yakima County include a non-profit Habitat for Humanity reuse store for building materials, Mail N More locations accepting reusable packing materials, and organizations such as the Salvation Army, Goodwill, and Union Gospel Mission accepting gently-used clothes, furniture, and home goods.

4.3.3 Urban Area Residential Recycling

Cities are responsible for curbside recycling and yard waste collection. Curbside recycling collection services are available in Moxee, Selah, Union Gap, and Yakima. These programs collect primarily Tier 1 materials (see Table 4.3). Curbside recycling services are also available in the urban growth area on a subscription basis. These services are provided by Yakima Waste Systems and Basin Disposal (both private firms) through a variety of contractual arrangements and State-issued certificates.

According to Yakima Waste Systems, approximately 10% of the eligible households in the City of Yakima have subscribed with the private hauler for curbside recycling service. Subscribed households reportedly have a set-out rate that approaches 100%. This set-out rate is higher than rates commonly observed in other areas and may be because households that have chosen to purchase the additional recycling service are therefore more motivated to use it.

Urban residents who do not have access to or who do not subscribe to curbside service can use drop-off sites and private buy-back centers located in some towns and cities.

4.3.4 Rural Area Residential Recycling

Curbside recycling service is not available in rural areas; instead, rural residents rely on drop-off sites and buy-back centers. Yakima County's Cheyne Landfill, Lower Valley Transfer Station, and Terrace Heights Landfill and Yakima Waste System's Granger Transfer Station provide drop-off recycling services to rural customers. Yakima County previously provided rural drop-off boxes in the towns of Harrah, Granger, and Zillah.

These rural drop-boxes were removed because the recyclables were routinely contaminated with non-recyclable materials.

4.3.5 Commercial Recycling

Commercial-sector recycling collection is handled exclusively by the private sector. Yakima County offers technical assistance services to businesses on request. Yakima Waste Systems and Basin Disposal provide recycling collection service to commercial customers. Businesses who do not subscribe to recycling collection services may also use public drop-off sites and private buy-back centers.

4.3.6 Public Event Recycling

To help events comply with Washington State law requiring public event recycling (RCW 70.93.093, adopted in 2007), Yakima County offers recycling bins at no charge for use at such events. The recyclables collected at these events can be sent to Yakima Waste Systems or to Yakima County.

4.3.7 Other Recycling Services

Household batteries are accepted at Yakima County transfer stations at no cost and at a number of business locations. Appliances and tires are also accepted for a fee at Yakima County transfer stations and at a few private locations.

E-Cycle Washington and LightRecycle Washington are two statewide programs that allow residents and some small businesses or agencies to recycle electronics and mercury-containing lights, respectively, for free at two collection sites in Yakima County.

A few private facilities specialize in metals recycling, such as Mayflower Metals and Pacific Steel & Recycling. They accept scrap metals, old automobiles, and appliances.

Michelson Packaging Company operates a recycling center in Yakima, known as Central Washington Recycling. Central Washington Recycling accepts source-separated cardboard, mixed paper, aluminum cans, #1 plastic bottles, and #2 plastic jugs from both the residential and commercial sector.

Both the Wesley United Methodist Church and Union Gospel Mission in Yakima operate volunteer-run recycling centers that accept source-separated paper, cardboard, plastic bottles, tin, and aluminum. A directory of other businesses and the materials that they will accept for recycling is available at Yakima County's website: http://www.yakimacounty.us/BusinessDirectoryII.aspx?lngBusinessCategoryID=30

4.3.8 Incentives for Recycling

Yakima County provides recycling bins at its three solid waste sites, Cheyne Landfill, Lower Valley Transfer Station, and Terrace Heights Landfill as an incentive to its self-haul customers by accepting source-separated recyclables at no cost in advance of weighing vehicles at the scale plazas. Moderate risk waste is also accepted at no cost at these three Yakima County owned sites.

Recycling can enable residents and businesses to reduce their garbage service volumes, lower the garbage bill, and for some recyclable materials such as aluminum or copper

even get paid if taken to a private recycling facility. Residents and businesses that subscribe to recycling collection services may be able to reduce their garbage service to a smaller size cart and lower their costs for garbage service.

4.3.9 Monitoring and Evaluation

Yakima County relies on Ecology for information on recycled quantities and an estimate of Yakima's countywide recycling rate. Annual figures for recycled tonnages are reported on a voluntary basis by both public- and private-sector entities.

4.3.10 Processing Facilities

The private sector handles the processing of the materials collected for recycling:

- Central Washington Recycling accepts and bales source-separated recyclables (old corrugated containers, aluminum cans, and plastic bottles) and also shreds newspaper and mixed waste paper for their own production process.
- Basin Disposal has the ability to hand-sort mixed recyclables from commercial sources.
- There are private facilities that process specific waste streams, such as Mayflower Metals and Pacific Steel & Recycling, both of which sort and process metals.

Yakima Waste Systems reported that it no longer operates a materials recovery facility in Yakima County; instead it sends commingled material to Western Washington for processing.

Overall, processing facilities are considered adequate for the supply of materials, and the access to markets is above average for an Eastern Washington county.

4.3.11 Markets

Washington State regulations (RCW 70.95.090.7.c) require "a description of markets for recyclables," which is provided below. This description is intended to be only a brief report of current conditions, and it should be noted that market conditions for recyclables can change drastically and rapidly.

4.3.12 Market Overview

In general, paper, #1 and #2 bottles, and recyclable metals are processed domestically in the Pacific Northwest while mixed plastics are sent to overseas markets. Markets for recyclable materials are currently weak. Reasons for market weakness include the drop in the price of oil since 2014, which makes it cheaper to purchase virgin plastic rather than use recycled materials; a strong United States dollar, which makes exports less price competitive; and reduced demand from foreign purchasers such as China, in large part due to a global economic slowdown.

An important factor for marketing of recyclable materials collected in Yakima County is the cost of transporting them to end-markets, many of which are outside of Washington State. Recyclers in Eastern Washington are farther from most markets than recyclers along the Interstate 5 corridor, reducing market access and creating a transportation cost barrier. The low market value of many recyclable materials limits the number of materials that can be cost-effectively moved to markets.

Primary markets for specific materials and comments on factors that affect them are shown in Table 4.2.

Table 4.2 Markets for Recyclables Materials

Material	Primary Market(s)	Comments
Paper:		
Cardboard	Regional paper markets, paper mills and export	The markets for cardboard (used in packaging) have been weak but prices may be stabilizing.
Mixed Waste Paper	Local (Michelsen Packaging)	Michelson Packaging continues to need more of these two materials than can be provided locally.
Newspaper	Local (Michelsen Packaging)	
Plastics:		
Bottles 1-7	Regional markets in Western Washington, Oregon, and export	The markets for PET and HDPE bottles are currently weak, and even weaker for bottles 3–7.
Other Plastics	Primarily export	Markets are volatile and sometimes unreliable.
Metals:		
Aluminum	Regional markets in Western Washington and Oregon; can manufacturing in St. Louis	Aluminum prices were down substantially in 2015.
Tin cans, white goods (appliances), and ferrous and non-ferrous scrap	Regional markets in Western Washington and Oregon	Steel has fluctuated heavily, and the market is currently weak.
Glass:		
Clear Glass	Regional markets in Western Washington and Oregon	Prices are poor for clear glass but are better than for brown and green glass.
Brown and Green Glass	Regional markets in Western Washington and Oregon	Prices for brown and green glass are low or negative (i.e., the glass is recycled for a charge).
Organics:		
Wood	Hog fuel, mulch (clean sources only)	More information is provided in Chapter 5 on the markets for organic materials.
Yard Debris	Daily cover, compost	More information is provided in Chapter 5 on the markets for organic materials.

Note: Information current as of early 2016 based on information provided by processors and collectors in Yakima County.

4.3.13 Designation of Recyclable Materials

Table 4.3 shows the list of "designated recyclable materials," required by Chapter 173-350 WAC, which should be used for guidance as to the materials to be recycled. This list is based on existing conditions (collection programs and markets), so future markets and technologies may warrant changes in this list. Because market conditions for recyclables

can change rapidly, the list of designated materials is accompanied by a description of the process for its revision, if needed before the next major Solid and Moderate Risk Waste Management Plan update.

This list is not intended to create a requirement that recycling programs in Yakima County collect every designated material. Instead, the intent is that through a combination of programs offered throughout Yakima County, residents and businesses should have an opportunity to recycle the designated materials listed through at least one program. In other words, if plastics are on the designated materials list, then at least one program in Yakima County must collect plastics. In this case, the list has been prioritized, meaning that residents and businesses should have better access to recycling high priority materials.

Table 4.3 List of Designated Recyclable Materials

Priority Level	Material
High Priority Materials: Materials that should be collected by curbside and drop-off programs throughout Yakima County.	1. Aluminum 2. Cardboard 3. High Grade Paper 4. Mixed Paper 5. Newspaper 6. Plastic Bottles, #1 and #2 7. Tin Cans
Medium Priority Materials: Materials that should be collected at select locations throughout Yakima County.	1. Electronics covered by E-Cycle Washington 2. Ferrous Metals 3. Mercury-Containing Lights covered by LightRecycle Washington 4. Motor Oil 5. Non-Ferrous Metals 6. Plastic Bags and Film 7. Textiles 8. Tires 9. Vehicle Batteries 10. Yard Debris 11. Clean Wood Waste
Low Priority Materials: Hard to recycle materials that can be recycled if markets are available.	1. Brown Glass 2. Clear Glass 3. Food Waste 4. Green Glass 5. Latex Paint 6. Plastics, #3 through #7 7. Plastic Containers (Non-Bottle) 8. Poly-Coated Paper

The following conditions are grounds for additions or deletions to the list of designated materials:

- The market price for an existing material becomes so low that it is no longer feasible to collect, process, or transport it to markets.
- Local markets or brokers expand their list of acceptable items based on new uses for

materials or technologies that increase demand.

- New local or regional processing or demand for a particular material develops.
- No market can be found for an existing recyclable material, causing the material to be stockpiled with no apparent solution in the near future.
- The potential for increased amounts of diversion.
- Legislative mandate.
- Other conditions not anticipated at this time.

Any proposed changes to the list of designated materials should be submitted to the SWAC for discussion. With the concurrence of the SWAC, followed by approval by the Yakima County Public Services Director, minor changes in the list can be adopted without formally amending the Plan. Thus, minor changes can be addressed in about 60 to 75 days, depending on the schedule of SWAC meetings at the time of the proposed change. Should the SWAC conclude the proposed change is a "major change" (what constitutes a "major change" is expected to be self-evident at the time, although criteria such as the length of the discussion by the SWAC or difficulty in achieving consensus could be used as indicators of a "major change"), then an amendment to the Plan would be necessary (a process that could take 120 days or longer to complete). In either case, Ecology should be notified of changes made to the list of designated materials or of the initiation of an amendment process.

4.4 PLANNING ISSUES

4.4.1 Climate Action Response

The Beyond Waste Implementation Working Group of the 2008 Climate Action Team developed specific recommendations to keep fibers and organics out of landfills and increase the number of product stewardship programs. These recommendations did not pass in the 2009 legislative session, but a number of groups continued to push for these actions.

In 2015, Ecology issued a proposed rule (Chapter 173-442 WAC) to establish emission standards for greenhouse gas (GHG) emissions from certain sources, including landfills in Washington State. Parties covered under this program will have an obligation to reduce their GHG emissions over time. Ecology's initial list of covered parties included Yakima County's Terrace Heights Landfill. Ecology adopted the new rule in September 2016 and it is unclear at this time when or how the new rule would affect the facility.

Washington State Public Works Board (WSPWB) administers the funding of local county public works projects, and as a state agency required to comply with the mandates in RCW 70.235.070 to meet the statewide GHG emission limits, opted to meet its obligations for taking action by requiring all jurisdictions receiving funding through the WSPWB to adopt their own GHG policies. Yakima County adopted Resolution 260-2012 supporting a reduction of GHG. Resolution 260-2012 includes multiple policies and the ones focused most on waste reduction and recycling are as follows:

- Implement a solid waste strategy which:

  - Reduces the solid waste stream by recycling and other means;
  - Investigates ways to convert non-recyclable solid waste to energy; and
  - Promotes the purchase of recycled and recyclable goods.
- Encourage jurisdiction-wide waste diversion services to include, for example, single stream curbside recycling, and curbside recycling of food and green waste.
- Reduce GHG emissions through improved management of waste handling and reductions in waste generation.
- Where and when allowed by the building code, encourage the use of building construction materials made from recycled and recyclable materials.

4.4.2 Glass Recycling

The growth of wineries and microbreweries in Yakima County has increased public interest in recycling glass. Additionally, new residents coming from places where glass is recycled have requested that Yakima County look at providing this service. Yakima County has conducted a study and found that there is no local market for glass recycling and the cost of transporting it to markets in Seattle and Portland is significant. More glass could potentially be recycled if a local market could be developed to process the glass into new wine bottles and other containers; however, current conditions make economical glass recycling a challenge.

4.4.3 Recycling Rates by Material

Overall, Yakima County's waste diversion rate is estimated to be 34 percent, an increase from the 23 percent rate achieved in 2007. In 2013, a total of 184,229 tons was reported as recycled, composted, or otherwise diverted. Refer to Chapter 2 for data sources.

Recovery rates in Yakima County appear to be highest for cardboard and metals. Businesses tend to generate and recycle large amounts of cardboard through onsite, source-separated collection. Ferrous metal, non-ferrous metal, and white goods recycling may include vehicles and heavy appliances, increasing the recycled tonnages. Note metal beverage cans are counted separately. Recovery rates were lower for newspaper, aluminum cans, and #1 and #2 plastics—and lower still for mixed waste paper and tin cans. As a result, current data support the finding from 2010 that recycling primarily using drop-off sites does not yield high recovery rates.

Table 4.4 uses data from the most recent Ecology survey (see Table 2-4) and the 2015 waste composition study (as applied to 2014 disposal tonnages, see Table 2-5) to calculate the recovery rates for specific materials. As seen in Table 4.4, recovery rates vary depending on the material. The recovery rates for cardboard and metals are the highest of the materials shown, consistent with the availability of several programs offering onsite collection of these materials, particularly from large commercial generators.

Table 4.4 Recovery Rates for Specific Recyclable Materials

Select Materials	Recycled Tonnages[1]	Disposed Tonnages[2]	Recovery Rate[3]
Other Metals and White Goods	33,803	10,374	76.5%
Cardboard	23,881	11,825	66.9%
Newspaper	1,055	2,473	29.9%
Aluminum Cans	415	999	29.3%
#1 and #2 Plastics	917	3,285	21.8%
Mixed Waste Paper	5,738	29,118	16.5%
Tin Cans	159	947	14.4%
Electronics	669	5,560	10.7%

[1]See Table 2-4 for recycling data. These are figures for 2013.
[2]See Table 2-5 for disposed tonnages. These figures were calculated using Yakima County's 2014 total disposed tonnage (239,272 tons) and the percentage breakdown from the 2015 waste composition study.
[3]Recovery rates are calculated by dividing the recycled tonnages by the sum of the recycled and disposed tonnages.

4.4.4 Curbside Recycling in Urban Areas

There is some demand for increased curbside recycling in urban areas of Yakima County. In Moxee, Selah, and Union Gap, residents can subscribe to curbside recycling from their garbage collector. In the City of Yakima, residents receive garbage collection from the City's Public Works Department and must subscribe with a separate private collector to receive curbside recycling service. The 2015 waste composition study results indicate that nearly a fifth (20% by weight) of residential waste disposed of as garbage is recyclable material designated as "high priority" in Table 4.3.

The City of Yakima's Public Works Department conducted a recycling pilot project in the City of Yakima during the summer of 2014 and published a detailed report on results.[1] Over 90% of households in the pilot program participated by setting out material for recycling. Most participants reported that they supported recycling by the pilot's end. Contamination rates observed during the pilot were found to be comparable to those from residential recycling in Clark County and suburban King County.

In mid-2015, the City of Yakima's Public Works Department offered its City Council the option of bundling curbside garbage with recycling to offer every-other-week single-stream curbside recycling services at a rate of $6.22/month per household (compared to $10.16/month, billed separately by Yakima Waste Systems).[2] However, the City Council chose to raise garbage collection rates to cover shortfalls without addressing curbside

[1] Green Solutions, *City of Yakima Pilot Curbside Recycling Project,* December 2014, available at https://fortress.wa.gov/ecy/swicdocs/docs/resources/20150112021356_1_YakimaPilotReportFinal.pdf.
[2] Mike Faulk, "Yakima City Council to Hear the Case for a Garbage, Yard Waste Rate Hike," Yakima Herald July 24, 2015, available at http://www.yakimaherald.com/news/local/yakima-city-council-to-hear-the-case-for-a-garbage/article_fe19c720-3296-11e5-8cad-97f6911676bf.html.

recycling or yard waste collection due to lack of public support to raise fees. As stated earlier, cities are responsible for providing curbside recycling and yard waste collection.

4.4.5 Recycling Program Costs and Affordability

An overriding goal of Yakima County's solid waste program is to keep costs and rates affordable for both residents and businesses. An increase in the tipping fee will be necessary to cover costs for maintaining services. Recycling and other services discussed in this Plan may add to program costs and increase the rates. The key issues related to costs, rates, and affordability that should be considered as part of developing this Plan are as follows:

- How to provide recycling services on a cost-effective basis.
- How expanded recycling services may result in disposal cost savings by extending the life of existing landfills.
- The potential for higher tip fees to provide a stronger incentive to recycle.

4.4.6 Needs and Opportunities Identified by the Previous SWAC

In the development of the 2003 and 2010 Plans, the SWAC noted several opportunities to expand and improve recycling services and identified a few key issues to be addressed. Several of these remain pertinent today:

- Increase use of residential curbside recycling service in urban areas.
- Collect more materials for recycling from the commercial sector.
- Collect new materials that now have recycling markets (such as plastic film and oriented strand board).
- Address the impacts of new regulations on solid waste and recycling services.

4.4.7 Urban/Rural Service Equity and Cost

As Yakima County establishes recycling goals and service levels for the next five to seven years, questions of equity and cost arise when considering what type of service to provide in urban versus rural communities. Issues considered included the following:

- Addressing how to provide equity between urban and rural residents in terms of opportunities for and convenience of recycling.
- Ensuring that rural residents have adequate service at a reasonable cost.
- Planning for whether these service levels will need to be adjusted in the future.
- Assessing whether minimum service levels should be established.

4.4.8 Sham Recycling

Some facilities may claim they are recycling a material without actually doing so. Others haul mixed garbage they claim constitutes recyclable materials to avoid flow control policies in areas with high transfer station or landfill tip fees. These practices can both be considered "sham recycling." Though Washington State's 2005 "Sham Recycling Bill" and the Recyclable Materials Transporter and Facility Requirements (Chapter 173-345 WAC) limit this practice by requiring recycling haulers to register with Washington State and prohibiting delivery of recyclable materials to transfer stations and landfills, sham

recycling may still occur. To date, no sham recycling has been documented in Yakima County.

Sham recycling may affect Yakima County through collectors or haulers who transport waste from Western Washington with the claim that they will process recyclables and instead landfill a substantial portion of the materials. Yakima County has an adopted policy of only accepting in-County solid waste at the facilities it owns.

4.5 OPTIONS FOR ALTERNATIVE STRATEGIES

The 2015 Waste Composition Study found that 14% of all materials listed in Table 4.3 (residential, commercial, and self-haul) disposed of as garbage could be diverted from landfill disposal via other Yakima County programs. **Table 4.5** details the key commodities that alternative strategies should focus on to increase the recycling rate and reduce financial impacts to residents and businesses from the future closure of Terrace Heights Landfill.

Table 4.5 Materials Disposed of as Garbage[1]

Select Materials	Residential (tons)	Residential Self-haul (tons)	Commercial (tons)	Non Res. Self-Haul (tons)	Total (tons)[2]	Total (percent)[5]
Clean Wood	2,549	1,536	12,688	2,155	**18,918**	**7.9%**
Yard Waste	13,223	1,532	3,704	381	**18,840**	**7.9%**
Newspaper and Other Recyclable Paper	12,247	456	3,448	103	**16,298**	**6.8%**
Cardboard	7,740	572	3,265	246	**11,825**	**4.9%**
Other Recyclable Plastic	6,551	903	2,054	679	**10,118**	**4.3%**
Textiles	7,396	545	1,046	333	**9,324**	**3.9%**
Computers and Electronics	2,675	1,233	1,484	167	**5,560**	**2.3%**
Curbside Recyclable Beverage Containers[3]	4,508	136	582	3	**5,231**	**2.2%**
Clear, Brown, and Green Glass Containers[4]	3,077	185	463	2	**3,729**	**1.5%**

Notes:
[1]Refer to Table 2.5 for full solid waste composition data in Yakima County.
[2]Due to rounding in the tables, sums may not exactly match subtotals and totals shown.
[3]Curbside recyclable beverage containers include aluminum cans, tin cans, PET bottles, and HDPE bottles. These materials, along with newspaper and other recyclable paper and cardboard, are the high priority materials designated in Table 4.3.
[4]Yakima County has conducted a study to evaluate the local market for glass recycling and cost of transport to other regional markets such as Portland or Seattle. Current conditions make economical glass recycling a challenge.
[5]Total percent is percent of total disposed MSW.

Options for waste reduction and recycling strategies are described below. A mix of voluntary and mandatory measures is provided. Increasing the recycling rate will require

full participation by signatories to the Plan, including signatory cities. Yakima County's primary role is to provide an integrated waste management system and to take the lead on waste reduction and recycling in unincorporated areas. Cities have primary responsibility for waste reduction and recycling of waste generated in their jurisdictions.

Alternatives to address food waste (14.5% or 34,800 tons), clean wood (7.9% of total waste, or 18,900 tons), and yard debris (10% of total waste, or 23,900 tons) disposed of in Yakima County landfills are addressed in Chapter 5. Alternatives to address recoverable C&D debris (4.1% of total waste, or 9,900 tons) are addressed in Chapter 9.

4.5.1 Establish a Waste Diversion Goal

Yakima County and signatory cities could set specific performance targets for waste reduction, recycling, and composting programs. Setting diversion goals provides a benchmark for measuring future performance.

4.5.2 Adopt Updated List of Designated Materials

Yakima County could adopt the updated list of designated recyclable materials (see Table 4.3) with the following changes since the 2010 Plan:

- **Moved covered electronics and mercury-containing lights from low to medium priority** because there are now mandated collection sites at select locations in Yakima County.
- **Moved clear glass from medium to low priority** because there is not a local market for it.
- **Added green glass as a new material with low priority** because of glass generated and used by wineries, while acknowledging that there is not currently a local market for it.
- **Add food waste as a new material with low priority** because it represents more than 14% of waste sent to landfills and creates GHG when decomposing while acknowledging there is not yet a local processor for it.

Yakima County could formally adopt the updated list of designated recyclables and create a formal process to review and revise (if necessary) by the SWAC, with revisions as needed based on available markets and materials in the waste stream.

4.5.3 Continue to Conduct Waste Composition Studies

As recommended by the previous plan, Yakima County conducted a waste composition study in 2015. Yakima County could repeat this study around 2020 to provide an updated assessment of recycling and MRW program performance and provide useful information on waste generation rates by source (residential and non-residential). With additional funding from signatory cities, a future study could also be designed to assess results separately for individual cities and unincorporated areas, which would be helpful for monitoring the performance of various programs. Such a study is recommended to be conducted over the course of a year to address seasonal variations. A waste characterization study is estimated to cost between $80,000 and $100,000, and so may be contingent on the availability of grant funds and/or an increase to the tipping fee.

4.5.4 Continue Support for Recycling at Public Events

Washington State law requires public events to provide recycling containers (RCW 70.93.093). To support this requirement, Yakima County Public Services Solid Waste Division operates a program that provides bins and other support for these events. This program is a low-cost public service with high visibility that provides a positive benefit for those involved. Signatory cities could partner with Yakima County to support and increase promotion of this program.

4.5.5 Establish Take-Back Programs for Hard-to-Recycle Materials

At present, household batteries are accepted at Yakima County transfer stations and at a number of other private locations. Appliances and tires are also accepted for a fee at Yakima County transfer stations and at a few private locations. Yakima County and signatory cities could work to expand and promote collection opportunities for these typically hard-to-recycle materials and also partner with recycling and reuse organizations to hold periodic collection events for hard-to-recycle materials, including mattresses, carpets, household hazardous wastes, and other targeted materials.

4.5.6 Implement Pay-As-You-Throw Pricing for Garbage

Signatory cities could require haulers to establish rate schedules that charge proportionately more to dispose of larger quantities of garbage. Signatory cities that contract for or directly provide collection services could increase the fee differential for different bin sizes (for both residential and commercial collection) to further incentivize waste reduction and recycling. Cities that contract with Basin Disposal and Yakima Waste Systems would need to negotiate a contract amendment or implement changes during contract renewals or bid processes.

4.5.7 Adopt a County Service-Level Ordinance that Promotes Residential Waste Reduction and Curbside Recycling

Yakima County could adopt service level minimums for unincorporated areas of Yakima County that promote waste reduction and curbside recycling. Options could vary between areas designated as urban and rural; these options include requiring Basin Disposal and Yakima Waste Systems to offer:

- Recycling service on a subscription basis for a rate equal to or less than garbage service (establishing a “right to recycle”).
- Recycling collection bundled with garbage service (potentially on a minimal once-per-month collection schedule).
- Subscription options for lower levels of garbage capacity (such as 20-gallon cart containers or once-per-month collection frequency).

4.5.8 Adopt City Service Standards that Promote Residential Waste Reduction and Curbside Recycling

Signatory cities that contract for or directly provide collection services could adopt service standards that promote waste reduction and curbside recycling. Options include offering or amending contracts to require garbage haulers to offer:

- Recycling service on a subscription basis for a rate equal to or less than garbage service (establishing a “right to recycle”).
- Recycling collection bundled with garbage service (potentially on a minimal once-per-month collection schedule).
- Subscription options for lower levels of garbage capacity (such as 20-gallon containers or once-per-month collection frequency).

4.5.9 Require Residents in Urban Areas to Subscribe to Curbside Recyclables Collection

Increasing participation in existing curbside and drop-off programs would increase the tonnages collected for recycling without requiring significant, if any, changes in existing infrastructure. Yakima County and signatory cities could adopt regulations that require residents in urban areas to subscribe to curbside recycling collection, where the service is available.

4.5.10 Require New Buildings to Provide Adequate Space and Facilities for Recycling Storage and Collection

Yakima County and signatory cities could develop clear guidelines to help developers and permit review staff comply with WAC 51-50-009, which mandates that local jurisdictions require new buildings to provide adequate space for recycling. Yakima County and signatory cities could also update building codes to require adequate space for recycling infrastructure with minimum specified capacity per residential unit or per square foot of building space and include an assessment of recycling capacity in the permit review process.

4.5.11 Ban Landfill Disposal of Readily Recyclable Materials

Yakima County could ban landfill disposal of readily recyclable materials, such as mixed paper, newspaper, cardboard, clean wood, electronics covered by E-Cycle Washington, plastic bottles, aluminum cans, and tin cans. To enforce the ban, Yakima County could assess a surcharge for loads that contain more than a minimal amount of prohibited materials (such as 5%). As an alternative, Yakima County could implement a surcharge on self-haul loads containing materials that can be recycled at drop-off sites without formally adopting a disposal ban.

Before implementing a ban or charging a surcharge, Yakima County would need to evaluate whether residents and businesses have the option to subscribe to a recycling service and have adequate access to drop-off recycling sites.

4.5.12 Adopt Mandatory Recycling for Readily Recyclable Materials

Signatory cities that contract for or directly provide garbage collection service could adopt a disposal ban requiring residential and commercial customers to recycle readily recyclable materials. Readily recyclable materials may include mixed paper, newspaper, cardboard, plastic bottles, aluminum cans, tin cans, electronics covered by E-Cycle Washington, and clean wood.

Before adopting mandatory recycling policies, signatory cities would need to ensure residents and businesses have the option to subscribe to a recycling service and have adequate access to drop-off recycling sites.

4.5.13 Require Businesses to Subscribe to Recycling Collection Service

Yakima County and signatory cities could adopt regulations that require commercial property owners and businesses with garbage collection service to subscribe to recycling collection service. Exceptions could be offered for properties and businesses that demonstrate they self-haul recyclables to drop-off sites or generate minimal amounts of recyclable materials.

4.5.14 Expand Recycling Drop-off Opportunities in Cities and at Private Sites

Recycling drop-off sites must be sufficiently available to meet minimum requirements set forth in RCW 70.95.090 (7)(b)(i). Since the 2010 Plan update, Yakima County provides recycling drop boxes at each of its transfer stations, making recycling just as convenient as drop-off garbage disposal for self-haul customers. Yakima County could continue to accept recycling for free to provide an incentive for self-haul customers to recycle. Yakima County could consider expanding the recycling drop-box program to take in a wider range of materials—such as plastic tubs, other plastics, and textiles—from both commercial and residential generators.

Signatory cities in Yakima County could provide drop-off recycling opportunities at city facilities to expand the network of available drop-off sites. They could also partner with reuse organizations, private stores, non-profit and community organizations, private waste facilities, or sites already participating in E-Cycle Washington and LightRecycle Washington for these private sites to host recyclables drop-off stations at their existing stores or staffed sites.

4.5.15 Build a Mixed Waste Processing Facility

Yakima County could build a mixed waste processing facility to sort recyclables disposed of as garbage from the waste stream before waste is sent to the landfill. A mixed waste processing facility would help recover a portion of recyclables not source-separated by residents and businesses.

4.5.16 Facilitate Business Material Exchanges

Yakima County and signatory cities could promote or financially support forums or other methods to facilitate regional business material exchanges (such as the IMEX program in King County available at www.hazwastehelp.org/imex). Such programs help businesses find and connect to markets for surplus materials and items that might otherwise become waste.

4.5.17 Promote Existing Reuse Programs

Yakima County and signatory cities could promote and support expansion of existing reuse and material exchange opportunities in Yakima County, such as the Yakima Habitat Store. Residential options include providing information on reuse organizations or supporting reuse events focused on specific products (such as bike swaps).

Promotion could involve maintaining and publishing a resource guide in local newspapers, a stand-alone guide with a map, or a web page listing organizations that promote waste reduction activities such as thrift shops, repair services, and tool rental businesses.

4.5.18 Provide Waste Reduction Grants

Yakima County and signatory cities could provide grants to organizations, institutions, or municipalities for various waste reduction programs. This alternative would allow partnerships with others that have similar interests, thus creating more cost-effective approaches. It would also allow Yakima County and signatory cities to capitalize on the energy or resources of other organizations. The cost of this option could vary widely depending on the amounts of the grants and activities targeted.

4.5.19 Implement a Ban or Fee on Disposable Plastic Bags

Yakima County and signatory cities could adopt regulations that ban the sale, purchase, and use of disposable plastic carryout bags. These regulations typically establish a fee (typically $0.05 to $0.10) on paper carryout bags that serve as an accepted alternative to plastic; retailers retain the fee to compensate for increased paper bag costs. In the 2015 Waste Composition Study, shopping bags, other plastic film, and other plastic packaging made up five percent of the overall waste stream by weight; such measures could help reduce this material in the waste stream.

4.5.20 Encourage Use of Small-Sized Garbage Carts

Use of small-sized garbage carts (e.g., 20-32 gallons in size) can signal the expectation that more materials should be recycled and composted than disposed. These smaller garbage carts are typically collected at lower rates than larger ones and are a good option for households that recycle significant amounts of waste. Encouraging subscribers to use smaller garbage carts will support increasing diversion.

4.6 EVALUATION OF ALTERNATIVE STRATEGIES

The following alternative strategies are for additional review:

A. Adopt Updated List of Designated Materials (4.5.2)
B. Continue to Conduct Waste Characterization Studies (4.5.3)
C. Continue Support for Recycling at Public Events (4.5.4)
D. Adopt a County Service-Level Ordinance that Promotes Residential Waste Reduction and Curbside Recycling (4.5.7)
E. Expand Recycling Drop-Off Opportunities in Cities and at Private Sites (4.5.14)
F. Build a Mixed Waste Processing Facility (4.5.15)
G. Facilitate Business Material Exchanges (4.5.16)
H. Promote Existing Reuse Programs (4.5.17)
I. Encourage Use of Small-Sized Garbage Carts (4.5.20)

The following parameters were used to evaluate the selected alternative strategies:

- Consistency with Planning Objectives
- Waste Reduction/Diversion Potential
- Customer Preferences
- Implementation Costs

Each alternative was assigned a rating of low (L), medium (M), or high (H) for each of the four parameters. The parameters for evaluation are described below, and scores for each of the selected alternatives are shown in Table **4.6**.

4.6.1 Consistency with Planning Objectives

The alternative strategies support the planning objectives of ensuring reliable services for managing solid waste materials and encouraging waste reduction and recycling programs.

4.6.2 Waste Reduction/Diversion Potential

The alternatives create or support increased diversion potential. Alternatives D and F have the potential to drive large increases in waste diversion, and Alternatives E and I have potential to moderately increase waste diversion. Alternatives A, C, G, and H are either continuations of existing programs or have a relatively small impact and have potential for only small increases in waste diversion. Finally, Alternative B (Conduct a waste characterization study) does not in itself directly increase waste reduction or diversion, but this strategy provides data that is used to assess waste diversion program performance and potential and can inform the design and implementation of other alternatives.

4.6.3 Customer Preferences

Customers tend to recycle if it is convenient, easy, and available at a low cost. Several of the alternatives are consistent with customer preferences by increasing the convenience of recycling, especially Alternatives C, E, and F. Alternatives A and B do not affect customers, and the remaining alternatives D, G, and H only moderately support customer preferences.

4.6.4 Implementation Costs

Alternatives A, D, G, H, and I have the lowest costs. Alternative C is already an ongoing activity in Yakima County (see Table 4.1). Alternative F (mixed waste processing) is by far the most expensive option. Alternatives B and E could also be at a significant cost, depending on the extent of the effort.

4.6.5 Rating of Alternatives

The alternatives are compared with respect to the evaluation criteria in Table 4.5 using a rating of high, medium, and low.

Table 4.6 Summary Rating of the Alternative Waste Reduction and Recycling Strategies

Alternative		Consistency with Objectives	Diversion Potential	Customer Preferences	Cost to Implement[1]	Overall Rating[2]
A	Adopt Updated List of Designated Materials	H	L	N/A	L	M
B	Continue to Conduct Waste Characterization Studies	H	L	N/A	H	L
C	Continue to Support Public Event Recycling	H	L	H	M	M
D	Adopt a County Service-Level Ordinance that Promotes Residential Waste Reduction and Recycling	H	H	M	L	H
E	Expand Recycling Drop-off Opportunities in Cities and at Private Sites	H	M	H	M	H
F	Build a Mixed Waste Processing Facility	H	H	H	H	H
G	Facilitate Business Material Exchanges	H	L	M	L	M
H	Promote Existing Reuse Programs	H	L	M	L	M
I	Encourage Use of Small-Sized Garbage Carts	H	M	M	L	H

H - High M – Medium L – Low

[1] For cost to implement, a low rating (L) is preferable to high (H). For all other evaluation parameters, the reverse holds true: the high (H) rating is preferable to the low (L) rating.

[2] To determine the overall rating, a score of 1 for low, 3 for medium, or 5 for high was given to each evaluated parameter. (For cost to implement, the point assignments were reversed – 5 for low and 1 for high.) These scores were averaged for each alternative strategy to obtain an overall score that was used to set the final rating. Alternatives were rated H if their overall average score was 4 or more, M if the overall average was between 3 and 4, and L if the overall average was 3 or less.

4.7 RECOMMENDED ACTIONS

The following recommendations are being made for waste reduction and recycling programs:

WRR1) Adopt the updated list of designated materials (Table 4.3) and maintain it through periodic review and updates.

WRR2) Continue to provide support for recycling at public events.

WRR3) Adopt a County service-level ordinance that promotes residential recycling and waste reduction.

WRR4) Expand recycling drop-off opportunities in signatory cities and at private sites.

WRR5) Conduct a feasibility study for a mixed waste processing facility in Yakima County.

WRR6) Support private sector programs, forums or other methods, such as a reusable materials exchange programs to facilitate business material exchanges.

WRR7) Increase promotion of existing reuse programs through newsletters, community reuse events, guidebooks, and community-based social marketing.

WRR8) Continue to conduct periodic waste characterization studies. Despite its relatively high cost and low direct impact on diversion in Yakima County, these efforts provide data to track progress of Yakima County's waste reduction and diversion program performance, refine existing programs, and identify new program opportunities.

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Chapter 5 ORGANICS

5.1 INTRODUCTION

This chapter discusses existing programs, identifies relevant planning issues, and develops/evaluates alternative strategies for organic materials, including yard debris, wood waste, food waste, and agricultural wastes.

5.2 BACKGROUND

This section provides background on Yakima County goals and objectives while summarizing Washington State rules and regulations affecting organics management.

5.2.1 Goals and Objectives for Organics

Goals and objectives specific to organics (as shown on page 1-2 of this Plan) include:

- Support public-private partnerships for waste reduction and recycling programs;
- Emphasize waste reduction as a fundamental management strategy;
- Encourage the recovery of marketable resources from the waste stream;
- Ensure compliance with State and local solid waste regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

5.2.2 State Legislation, Regulations, and Guidelines for Organics

This chapter and the previous chapter regarding waste reduction and recycling provide an update of Yakima County's waste diversion methods that comply with Washington State requirements regarding waste diversion programs. The requirements are based in "The Waste Not Washington Act" (ESHB 1671), which are in turn reflected in various sections of the RCW and the WAC. The Waste Not Washington Act declared that waste reduction and recycling must become a fundamental strategy of solid waste management. To that end, Chapter 70.95 RCW includes a statement encouraging yard debris to be eliminated from landfills by 2012 in those areas where alternatives exist.

Washington State Senate Bill 6605[1], 2015 seeks to ensure that waste management processes prevent the spread of disease, plant pathogens and pests. Hearings as of Wednesday February 24, 2016 indicate the state legislature is taking steps to restrict solid waste management facilities to protect the greater agricultural industry. The bill was signed by the Governor on March 31, 2016, and is effective as of July 9, 2016.

RCW 70.95.090 also requires that collection programs for yard debris be addressed in areas where there are adequate markets or capacity for composted yard debris within or near the service area.

[1] http://app.leg.wa.gov/billinfo/summary.aspx?year=2015&bill=6605

5.2.3 Washington State Department of Agriculture Apple Maggot Quarantine

The Washington State Department of Agriculture (WSDA) implemented emergency rules under their Pest Program that specifies methods to prevent the introduction, escape or spread of apple maggots beyond the quarantine area. Figure 5.1 indicates the quarantine area and the pest free area as they relate to the cities and solid waste facilities in Yakima County. The emergency rules prohibit the transportation of collected organics from THLF[2] to Yakima County's contracted compost facility, Natural Selection Farms. Under these emergency rules, 'municipal green waste' generated in the quarantine area is defined as a 'regulated commodity' and subject to strict controls. These controls are not imposed when the same municipal green waste is generated outside of the quarantine area, or in the 'pest free area.'

To comply with these requirements Natural Selection Farms is prohibited from importing green waste generated from within the quarantine area at its Sunnyside facility as of August 28, 2015.

Following the WSDA notice, Yakima County and Natural Selection Farms worked cooperatively to implement interim measures as approved by the Yakima County Health District to find beneficial uses of the material in lieu of disposing of the material in the THLF.

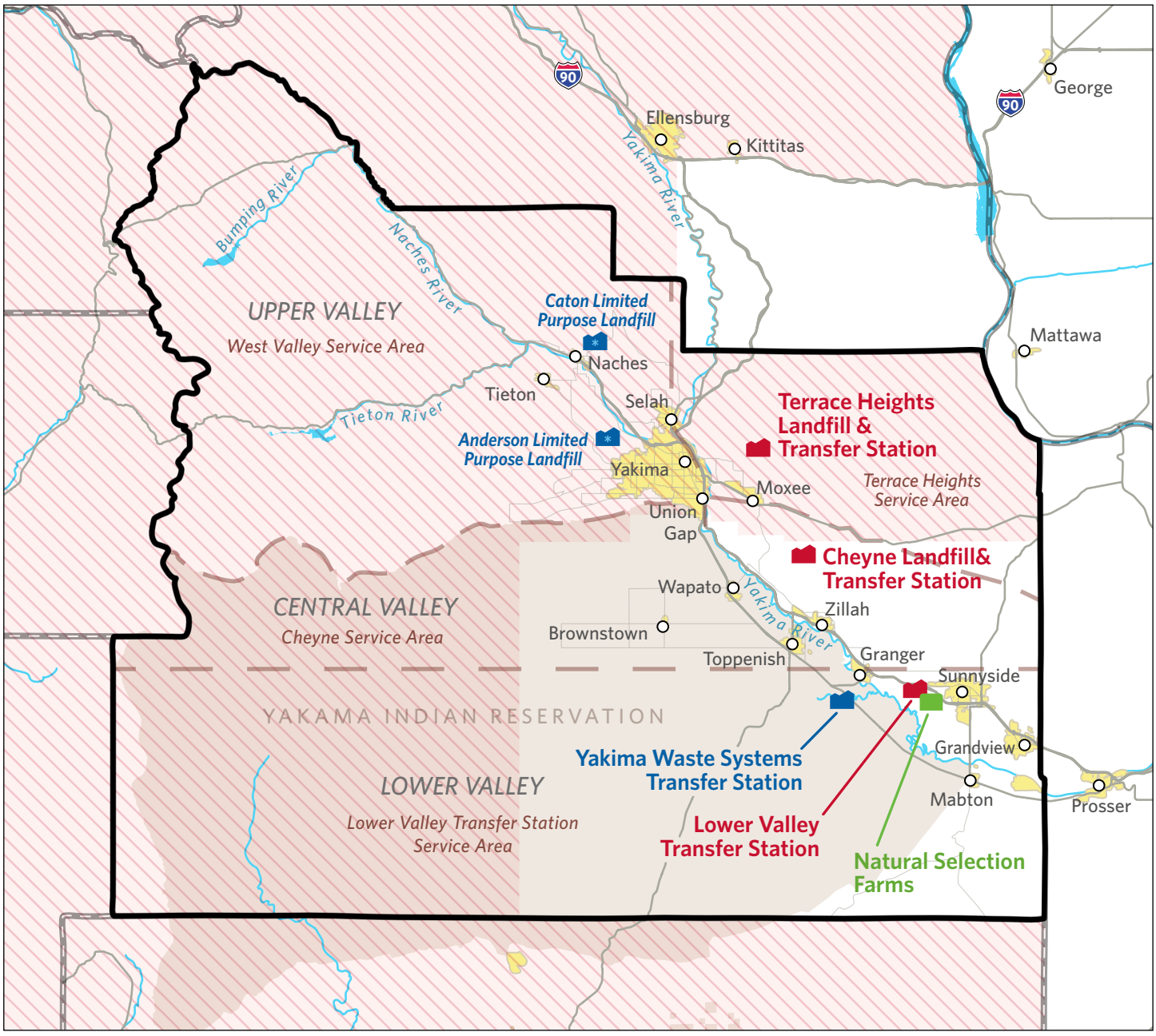
Yakima County and Natural Selection Farms worked cooperatively with the United States Department of Agriculture (USDA) to perform testing of apple maggot larvae in compost. Natural Selection Farms and Yakima County published their research in a document titled 'Request for Approval of Emergency Interim Mitigation Steps for Apple Maggot[3] dated September 15, 2015, to the WSDA. The document included a Yard Waste Composting Pathogen Reduction Plan that included procedures to be implemented that mirror the Process to Further Reduce Pathogens (PFRP) used by Waste Water Treatment Facility operators when managing biosolids. The PFRP included achieving temperatures of 131-150 degrees Fahrenheit for three consecutive days. As of the date of this Chapter the WSDA has not responded to the Natural Selection Farms request.

Yakima County has also retained the Yakima Agricultural Research Laboratory to perform research exploring physical testing of apple maggot larvae in compost. The research indicates complete kill rates based on the testing. Further testing has not been possible recently due to a lack of apple maggots.

Green waste collected at Cheyne Landfill and Lower Valley Transfer Station are transported to Natural Selection Farms for processing.

[2] WAC a6-470-101(3)

[3] Natural Selection Farms, Request for Approval of Emergency Interim Mitigation Steps for Apple Maggot, September 15, 2015



Legend

- Yakima County Existing Landfills/Transfer Stations
- Private Existing Landfills/Transfer Stations (* = Limited Purpose)
- Private Existing Composting Facility
- County Boundary
- Quarantine Area (2015)

Figure 5.1

Yakima County Solid Waste Sites and Apple Maggot Quarantine

Yakima County Solid Waste and Moderate Risk Waste Management Plan

5.3 EXISTING PROGRAM ELEMENTS

The sections below describe existing collection and processing activities for organic materials, followed by a discussion of the existing and potential market capacity for organics.

5.3.1 Yard Debris Composting

The Yakima County solid waste disposal facilities accept yard debris including grass clippings, leaves, garden and landscaping wastes, brush and other natural woods up to twelve inches in diameter, and Christmas trees. These materials are typically generated separately from other residential and commercial waste streams, and so are more easily diverted to composting and other programs. Hay, straw, sod, manure, treated wood, stumps, rocks and food waste are not accepted in Yakima County's yard debris program.

Existing options in Yakima County for yard debris include a variety of drop-off and curbside programs, as described below.

Yard Debris Drop-Off Programs

A reduced tip fee at the three Yakima County solid waste facilities provides an incentive for residents and businesses to recycle yard debris and clean wood. The 2016 fee for yard debris and clean wood at the solid waste facilities is $16.00 per ton compared with $32.00 per ton for solid waste. Yard debris collected at the facilities is periodically ground up.

The amount of yard debris collected at Yakima County facilities is shown in Table 5.1.

Table 5.1 Segregated Yard Debris Quantities at County Facilities (TPY)

Year	THLF (Quarantine Zone)	CFL (Pest Free Zone)	LVTS (Pest Free Zone)	Total (tons)
2008	12,624	929	824	14,376
2009	13,178	869	984	15,031
2010	13,280	694	893	14,868
2011	13,307	620	1179	15,105
2012	13,418	524	955	14,897
2013	14,326	514	831	15,670
2014	13,548	803	779	15,130
2015	13,624	661	963	15,247
Five-Year Averages	13.413	702	926	15,041

The City of Grandview allows the public to drop off yard debris (primarily brush) at their Public Works building in the form of a spring cleanup on the second and third week of April. This is strictly for the citizens of Grandview. The City of Grandview owns a wood

chipper and uses it to grind the brush. For the last few years, City of Grandview has spread the wood chips on the side roads at its wastewater treatment plant.

Yakima County Public Services Solid Waste Division and the City of Tieton have worked cooperatively to establish a demonstration compost facility at the City of Tieton, in response to the enforcement of burn ban regulations. This demonstration facility was funded in part by an Ecology grant, but ended operations due to a lack of material received at the facility.

Christmas Tree Recycling Program

Yakima County continues to partner with Camp Prime Time to provide an opportunity for residents to recycle their trees at community tree grinding events. The resulting chips are used for horse bedding or composting at Natural Selection Farms.

Yard Debris Curbside Collection Programs

Currently, curbside yard debris collection is available in the Cities of Toppenish, Yakima, Zillah, Selah, and Union Gap. These collection programs are summarized in Table 5.2 below. Yakima Waste Systems also provides yard debris collections every-other-week in their collection areas outside of the city limits, but only in the urban growth areas.

Table 5.2 Collection Programs

City/Town	Program	Cost per Month	Collection Entity	Notes
Toppenish	Weekly collection 90-gallon cart 300 gallon cart	$8.15 $26.68	City	Collection from March 15 to November 30
Yakima	Weekly collection 96 gallon cart	$14.91* $22.32*	City	Collection from March 1 to November 30
Naches	Every-other-week collection 96-gallon cart	$6.96	YWS	76 customers reported by YWS
Zillah	Every-other-week 96-gallon cart	$8.78 per cart	YWS	291 customers reported by YWS; one time tote delivery fee $21.40.
Selah	Every-other-week collection, up to 3 bags collected, not to exceed 40 pounds per bag	$1.62	BDI	Collection from April 18 to October 19
Union Gap	Every-other-week collection, up to 4 bags collected, not to exceed 40 pounds per bag	Cost paid by public works department	BDI	Only for fall leaves
Unincorporated area	Every-other-week, 96-gallon cart	$10.78	YWS	537 customers reported by YWS

* - City of Yakima charges customers $3.44 per week for collection of one cart and an additional $1.71 per week for a second 96 gallon cart. These were converted to a monthly cost for comparison with other cities.

Yakima County received an “Alternatives to Burning” grant from Ecology to purchase 50,000 “biobags” (biodegradable bags). These bags were used for the City of Yakima’s leaf collection program. The City of Yakima terminated the leaf program prior to fall

2015. The 2014 year documentation indicates the City of Yakima's leaf program collected 177 tons.

5.3.2 Clean Wood Wastes

According to the *2015 Yakima County Waste Composition Study* (Cascadia Consulting Group 2015), 7.9% of the waste stream is comprised of clean wood waste, or about 18,908 tons per year (see Table 2.5). Clean wood is handled the same as yard debris by Yakima County. As shown in Table 2.4, 918 tons of clean wood were recycled in 2013, so the current recycling rate for wood is about 2.5%. As shown in Table 2.4, 7,172 tons of wood was diverted to energy recovery and reuse in 2013.

As mentioned above, a reduced tip fee provides an incentive for residents and businesses to drop off clean wood at Yakima County disposal facilities.

5.3.3 Food Wastes

According to the *2015 Yakima County Waste Composition Study (*Cascadia Consulting Group 2015), 14.5% of the waste stream is comprised of food waste, or about 34,783 tons per year (based on 2014 disposal tonnages, see Table 2.5).

5.3.4 Agricultural Wastes

Although the 2010 Plan included agricultural waste in the organics chapter, there is little agricultural waste disposed of within Yakima County Public Services Solid Waste Division's programs. Hence, agricultural wastes are not under the purview of Yakima County's Plan. Agricultural wastes, whether crop residues or animal manures, can be returned to the land where these were generated.

5.3.5 Processing Facilities

Natural Selection Farms serves Yakima County's compost processing needs. This facility located in Sunnyside, WA had been processing all of Yakima County's collected yard waste until the apple maggot quarantine restrictions were enforced. Materials composted by Natural Selection Farms include hops, yard debris, food processing organics, clean wood waste, tree trimmings from both commercial and residential sources (residential yard debris only). Natural Selection Farms produces approximately 35,000 cubic yards of compost annually. Their products include compost and special blends of compost with soil and other materials.

In addition to Natural Selection Farms, there are other private companies in Yakima County currently involved in composting yard debris or other materials, or that blend soils using compost and other materials. There are additional companies and farms involved in composting animal manures, but onsite composting of agricultural wastes is exempt from Yakima County Health District permitting requirements. More details on the existing activities and markets for compost can be found in the *Compost Facility Feasibility Study, Appendix B of the 2010 Solid Waste Management Plan*[4] .

[4] http://www.yakimacounty.us/DocumentCenter/View/2475

5.3.6 Markets

Yard Debris

Local markets for land application of yard debris, or compost derived from yard debris, are hindered by a problem that occurred several years ago when a hops farm lost many plants after using composted yard debris. This problem was apparently caused by the presence of Clopyralid, a herbicide used to control weeds, in grass clippings used as compost feedstock. Due to the problems caused by Clopyralid[5], use of pesticides containing clopyralid is restricted when labeled for use on cereal grains, grass, used for hay, lawns and turf including golf courses. Pesticides containing clopyralid may be applied to lawns and turf including golf courses if, per WAC 16-228-12371, no grass clippings, leaves, or other vegetation are removed from the site and placed in composting facilities that provide product to the public. Since Clopyralid is still used in some products for the control of weeds in hay and grains, animal manures may still contain trace amounts of this chemical. However, to mitigate the risk of clopyriaid presence in their compost, Natural Selection Farms tests their products in grow labs with beans and peas to monitor how they grow. Natural Selection Farms reports that there are no issues with herbicides in their products.

Wood Waste

Markets for wood waste are currently good. However, demand is expected to reduce in the future since demand for hog fuel is expected to decline. This change is anticipated due to decreased logging and the fact that energy generated from biomass plants is not deemed as renewable energy. Decreased logging (due to less demand for lumber caused by reduced home building and other construction activity) has an impact on hog fuel prices because logging generates byproducts that are also used for hog fuel.

Food Waste

There are currently strong markets for cooking grease, which is the primary type of “food waste” collected currently for recycling in Yakima County. The market for grease is expected to stay strong for the foreseeable future, due largely to the ability to convert it into biodiesel.

Compost

Natural Selection Farms markets its compost to agricultural, wholesale and retail markets. The demand for compost appears strong as Natural Selection Farms reports it is able to sell all compost product produced.

5.4 STATUS OF 2010 RECOMMENDATIONS

The status of the recommendations made by the 2010 Plan is shown in Table 5.3.

[5] http://apps.leg.wa.gov/wac/default.aspx?cite=16-228

Table 5.3 Status of the 2010 Recommendations for Organics

Number	Recommendations	Status
O1	Implement a disposal ban on yard debris effective January 1, 2012, for all public and private disposal facilities in Yakima County and for yard debris from all sources.	Not implemented
O2	Develop and issue an RFQ/RFP for composting services for the yard debris collected at County disposal facilities	Done, resulting in contract award to Natural Selection Farms
O3	Explore other options, including a County owned and operated facility, if Recommendation O2 cannot be implemented due to pricing, terms or other reasons.	Not applicable because O2 was completed.

5.5 PLANNING ISSUES

Yard Debris Composting

The current plan for yard debris collected at Yakima County facilities to be composted at Natural Selection Farms is in compliance with Ecology's goals and definition for recycling in Washington State. However, since August 2015 yard debris collected at the THLF may not be transported to Natural Selection Farms due to Apple Maggot quarantine boundaries (refer to Section 5.2.3 for additional information).

Climate Action Response

The Beyond Waste Implementation Working Group (BWIWG) of the 2008 Climate Action Team has ceased to function. While they were functioning, BWIWG developed a recommendation that all organics be kept out of landfills, however these recommendations were developed prior to WSDA emergency rules prohibiting the transportation of collected organics across quarantine boundaries. Yakima County is working to support the recommendation to keep organics out of landfills by finding beneficial uses for yard debris collected at the THLF, other than transporting the materials to Natural Selection Farms.

Odors from Composting

Yakima County occasionally receives complaints about odors from its yard debris stockpile at THLF. The every-other-week collection of yard debris in some parts of Yakima County may contribute to the odor problem. Conversations with Yakima County[6] indicate the site is functioning with minimal odor complaints at this time.

Organics to Energy

Current research and technology development efforts in the solid waste industry may create future opportunities to convert biomass (plant material) to energy. In addition, the technology is currently available to process food waste, grocery waste, and animal manures in anaerobic digesters to create methane, which is then used to generate

[6] HDR telephone conversation with Yakima County staff.

electricity. Anaerobic digestion is a fairly well-proven technology that is already being used in Yakima County by DeRuyter Dairy. Due to the relatively small quantities combined with the potentially high costs of these facilities, anaerobic digestion is not considered a viable alternative at this time.

Landfill Ban

As mentioned previously in this Chapter (refer to Section 5.2.2 for additional information), Washington State law recommends eliminating yard debris from landfills in areas where alternative handling methods exist. Given the current apple maggot quarantine issues, Yakima County is not considering a yard waste disposal ban at this time.

5.6 ALTERNATIVE STRATEGIES

The sections below describe and evaluate alternatives for managing organics within the Yakima County solid waste system.

5.6.1 Alternatives

One of the alternatives considered in the 2010 Plan was implemented, Alternative A – Yard Debris Composting. Given the somewhat limited array of options available under the current apple maggot quarantine emergency rules, this Plan revisits some 2010 Plan alternatives for further evaluation and provides an update as to what alternatives could be implemented.

Alternative A – Yard Debris Composting

This program was implemented by Yakima County's contract with Natural Selection Farms. The program includes the following activities:

- Collection – collection programs are in place in urban areas and Yakima County Solid Waste Transfer Stations have drop-off facilities available in rural areas, so that yard waste may be collected separately and diverted from landfilling.
- Processing and marketing – the compost processing method Natural Selection Farms employs is to produce a viable compost product to fulfill needs of the local available markets. Natural Selection Farms is responsible for marketing its compost products to commercial agricultural and homeowner uses throughout the region.
- Yard waste management within the apple maggot quarantine area remains an unresolved issue. Yakima County continues to work with Natural Selection Farms and WSDA to identify and implement processes that comply with rules and regulations. As demonstrated in recent test results, it appears implementation of pathogen reduction measures similar to those for biosolids composting (501C3 regulations of the Federal Register) have demonstrated apple maggot pupae destruction.

Alternative B – Wood Waste for Biomass-to-Energy

The clean wood waste collected separately at facilities is being ground and sold as hog fuel. The expansion of this program was explored in the 2003 Plan and the 2003 study, *Review of Biomass Fuels and Technologies* (Yakima County 2003c). The study

concluded a large-scale biomass-to-energy project was not economically feasible in Yakima County.

We anticipate a decline in the viability of biomass to energy due to the competitive pricing of energy of Washington State. Biomass to energy does not classify as renewable energy so as power purchase agreements expire and new contracts are offered, the revenues from biomass facilities is lower than with prior power purchase agreements. Consequently, many biomass power plants have closed throughout the United States. To the extent biomass power plants are available, this alternative remains viable, however when these facilities cease to operate, this alternative will no longer be an option for management of clean wood waste.

Alternative C – Food Waste Diversion

Food waste constitutes a substantial portion of the waste stream (14.5% or 34,766 tons per year) that could be diverted to a composting or other processing system, provided compliance with the apple maggot quarantine requirements. The separate collection of food waste poses several problems, including issues with odors, container weight, liquids, vermin, and other health and sanitation potential issues. Collecting food waste with yard debris is being done in several Washington communities for residential customers. Success of these programs requires extensive public education to minimize contamination. In addition, composting food waste with yard debris requires robust measures to control odors.

Given the apple maggot quarantine issues currently facing Yakima County, it is not recommended to evaluate collection of food waste with yard waste further at this time.

Other alternatives for food waste include:

- food donations (for surplus edible food)
- the production of animal feed
- rendering
- worm bins and large-scale vermicomposting
- anaerobic digestion

In general, the options for food waste diversion are better for large commercial generators, several of which are already conducting their own local diversion programs. Increasing the amount of food waste diversion beyond those efforts will, however, hinge at least in part on the system developed for yard debris and will be contingent on the resolution of the apple maggot quarantine issue. Since these issues have not yet been resolved, any significant advancements in food waste diversion will need to wait.

Alternative D – Process Agricultural Wastes at Central Compost Facility

This alternative was evaluated in the 2010 Plan. For the most part, the cost of collecting and transporting agricultural waste from the farm to a central compost facility would be high and also is subject to the apple maggot quarantine rules. As described previously, handling these materials as part of a yard debris compost program raises concerns about pesticide residues and other contamination. Further, agricultural wastes are not typically handled in Yakima County solid waste management systems hence including

them for diversion purposes does not affect the goal of landfill diversion. For these reasons, this alternative will not be recommended at this time.

5.6.2 Evaluation of Alternative Strategies

Consistency with Planning Objectives

The alternatives are consistent with the objective of recovering materials from solid waste, although Alternatives A, and C are more in line with Ecology's goals.

Waste Reduction/Diversion Potential

Alternative A (composting) has the most practical diversion potential. Alternative C (food waste diversion) has a significant diversion potential, albeit at a significant cost.

Implementation Costs

Implementation costs have been found to be reasonable for Alternative A – Composting. The implementation cost for the others could be significant, with increased difficulty due to the apple maggot quarantine rules.

5.6.3 Rating of Alternatives

The alternatives are compared with respect to the evaluation criteria in the table below.

Table 5.4 Rating of Alternatives

Alternative	Consistency with Planning Objectives	Waste Reduction / Diversion Potential	Cost to Implement	Overall Rating
A - Yard Debris Composting (already implemented with the exception of yard waste currently collected within the apple maggot quarantine area)	H	H	L	H
B - Wood Waste to Energy (which relies on existing biomass power facilities, to the extent they remain operational)	M	M	L	M
C - Food Waste Diversion	H	H	H	L
D - Handling Agricultural Waste at Composting Facility	L	L	H	L

H – High, M – Medium, L – Low

5.7 RECOMMENDED ACTIONS

The following recommendations are being made for managing organics:

O1) Continue the yard debris composting program as is for material collected in the 'pest free' area.

O2) Comply with the WSDA apple maggot quarantine requirements, specifically the Notice of Correction[7] regarding the management of yard waste within the quarantine area separately from material in the 'pest free' area.

O3) Seek to clarify appropriate measures that could allow composting of yard wastes collected within the apple maggot quarantine area at Natural Selection Farms, such as implementing pathogen reduction compost measures, as appropriate.

O4) Explore other options, including a Yakima County owned and operated compost facility, if Recommendation O3 cannot be implemented due to terms or other reasons.

[7] State of Washington, Department of Agriculture, Notice of Correction, August 18, 2015

Chapter 6 SOLID WASTE COLLECTION

6.1 INTRODUCTION

This chapter discusses existing municipal solid waste collection services in Yakima County and in the fourteen participating cities and towns, identifies relevant planning issues, and develops and evaluates alternative collection strategies. The key variables that affect collection are population densities and land use types, and the resulting types and quantities of materials generated that require collection. Collection services vary throughout Yakima County, and include a mix of publicly and privately operated systems.

6.2 BACKGROUND

6.2.1 Goals and Objectives for Solid Waste Collection

Goals and objectives related specifically to solid waste collection include:

- Promote the use of innovative and economical waste handling methods;
- Support public-private partnerships for waste reduction and recycling programs;
- Emphasize waste reduction as a fundamental management strategy;
- Encourage the recovery of marketable resources from the waste stream;
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document;
- Reduce the environmental impacts to air, water, and land that are associated with waste generation, transportation, handling, recycling, and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping; and
- Ensure convenient and reliable services for managing solid waste materials.

6.2.2 Legal Authority

The Ecology, the WUTC, Yakima County, cities and towns, and the Yakama Nation share the legal authority for solid waste collection within Yakima County.

RCW 70.95.020 assigns primary responsibility for solid waste handling (management) to local government. Private industry's role in waste management is reflected in the legislative language: "It is the intent of the legislature that local governments are encouraged to use the expertise of private industry and to contract with the same to the fullest extent possible to carry out solid waste recovery and recycling programs" (RCW 70.95.020).

For information regarding establishment of collection and disposal districts as allowed by Chapter 36.58A RCW, refer to Chapter 13 Administration and Enforcement.

Refer to Chapter 9 Construction, Demolition and Land Clearing Debris for information on the "Sham Recycling Bill" and the Recyclable Materials Transporter and Facility Requirements (Chapter 173-345 WAC).

6.2.3 Incorporated Areas

Cities and towns have three alternatives for collecting solid waste within their boundaries:

1. Municipal collection: collect waste using municipal employees.
2. Contract collection: the municipality conducts a competitive procurement process and selects a private company to provide collection services.
3. Permitted Solid Waste Carriers: if a city does not wish to be involved in managing garbage collection within its boundaries, a WUTC certified hauler for the area can provide those services. The city may pass an ordinance requiring that certain services be provided. A city may also require a permitted hauler to secure a license from the city.

6.2.4 Unincorporated Areas

Waste collection companies are included as a regulated transportation industry. As such, the WUTC grants exclusive rights to specific haulers, referred to as "Solid Waste Carriers", in unincorporated areas. RCW 81.77.030 allows the WUTC to supervise and regulate waste collection companies by:

1. Fixing and altering its rates, charges, classifications, rules and regulations;
2. Regulating the accounts, service, and safety of operations;
3. Requiring the filing of annual and other reports and data;
4. Supervising and regulating such persons or companies in all other matters affecting the relationship between them and the public which they serve;
5. Requiring compliance with local solid waste management plans and related implementation ordinances; and
6. Requiring certificate holders under Chapter 81.77 RCW to use rate structures and billing systems consistent with the solid waste management priorities set forth under RCW 70.95.010 and the minimum levels of solid waste collection and recycling services pursuant to local comprehensive solid waste management plans.

Chapter 480-70 WAC implements Chapter 81.77 RCW by establishing standards for public safety; fair practices; just and reasonable charges; nondiscriminatory application of rates; adequate and dependable service; consumer protection; and compliance with statutes, rules and commission orders.

At the time of this writing, there are three companies that hold solid waste authority to operate in Yakima County, including Rabanco, LTD., Basin Disposal of Yakima, LLC (BDI), and Yakima Waste Systems, Inc. (YWS). The service area maps for each of the haulers are included as Appendix D. Note that while Rabanco, LTD. currently holds solid waste authority to operate in Yakima County, they do not currently provide any collection services in Yakima County.

6.3 EXISTING PROGRAM ELEMENTS

Residential curbside waste collection is mandatory in incorporated areas (cities and towns) of Yakima County. Residents in unincorporated areas may choose whether to subscribe to waste collection services; a high volume of residents self haul, rather than subscribing to curbside collection services. These services are provided primarily by YWS, which is authorized by the WUTC to collect waste within the boundaries of Yakima County. BDI is also authorized to collect waste in part of the unincorporated lower valley (east of Granger, surrounding Sunnyside and Grandview, and north of the Yakima River). Rabanco is also authorized to collect waste in the eastern part of the unincorporated area, though they currently do not have any collection service business in Yakima County. More detailed information about the haulers' service areas can be found at the WUTC's website: http://www.utc.wa.gov/regulatedIndustries/transportation/solidWaste/Pages/default.aspx.

6.3.1 Waste Collection Programs

Table 6.1 lists the waste haulers operating in Yakima County, the style of residential garbage collection, the approximate number of customers served, and the rates per household per month. As presented in Table 6.1, there are four municipal collection programs and two private haulers currently providing collection services in Yakima County. The four municipal collection programs are operated by Grandview (which has a population density 1,742.7 people per square mile according to 2010 Census), Granger (estimated population density of 2,023.3 people per square mile), Toppenish (population density of 4,279.8 people per square mile according to 2010 Census), and Yakima (population density of 3,350.5 people per square mile according to 2010 Census). Those programs operate within city boundaries, as adjusted periodically by annexations. The two private haulers operate in the unincorporated areas and in the remaining municipalities. The population density for the rest of Yakima County (excluding the four municipal collection programs) is 30.9 people per square mile.

Each of the cities within Yakima County is using automated (or semi-automated) cart collection. Four of those cities do not offer variable sized carts, while the remaining cities do offer variable sized carts. Monthly rates per household vary widely from a low of $7.23 in Mabton to a high of $22.33 for a 32-gallon in Granger, which is due to size container in some instances, and level of service included (e.g., recycling and/or yard waste collection included or excluded).

Table 6.1 Solid Waste Collection Data

City or Town	Population[1] -2015	Residential Customers	Residential Garbage Cart Size	Collection Entity	Mandatory Service	Rate per Household per Month
Grandview	11,200	3,000	96- or 300[2]-gallon	City (w/ limited BDI)	yes	$13.65; $45.00
Granger	3,640	600	96- or 300-gallon	City	yes	$22.33; $62.88 (tax included)
Harrah	650	210	32- or 96-gallon	YWS	yes	$7.25; $10.84[3]
Mabton	2,310	409	48- or 96-gallon	YWS	yes	$7.23; $17.86
Moxee	3,810	1,030	64- or 96-gallon	BDI	yes	$11.80; $14.55
Naches	830	309	48-, 64-, or 96-gallon	YWS	yes	$11.09; $11.82; $12.56
Selah	7,495	2,397	64- or 96-gallon	BDI	yes	$11.72; $14.28
Sunnyside	16,280	2,839	48- or 96-gallon	YWS	yes	$8.53; $11.25
Tieton	1255	368	96-gallon	YWS	yes	$13.16
Toppenish	8,965	2,400	96-gallon	City	yes	$16.28
Union Gap	6,150	1,526	96-gallon	BDI	yes	$11.90
Wapato	5,040	927	32-, 64-, or 96-gallon	BDI	yes	$10.80; $15.65; $17.64
Yakima	93,220	26,000	32- or 96-gallon	City, YWS[4]	yes	$15.99; $18.33[5]
Zillah	3,140	967	64- or 96-gallon	YWS	yes	$14.75; $15.82
Unincorporated area	85,985	1,797	32-, 64-, or 96-gallon	BDI	no	$7.25; $8.91; $10.84
		8,022	48-, 64-, or 96-gallon	YWS		$10.21, $10.72, $13.05
Total	249,970	51,801				

Notes: YWS = Yakima Waste Systems (WUTC rates available at this website http://www.utc.wa.gov/regulatedIndustries/transportation/TransportationDocuments/Yakima%20Waste%20Systems%20Inc%20G-89%20Tariff%2011.pdf), BDI = Basin Disposal Inc. (WUTC rates available at this website http://www.utc.wa.gov/regulatedIndustries/transportation/TransportationDocuments/Basin%20Disposal%20of%20Yakima%20LLC%20G-45%20Tariff%20No%205.pdf)

1. From Table 2.1. Data current as of April 2015.
2. 300-gallon containers are offered to commercial and multi-family residential customers.
3. WUTC rates are listed for the town of Harrah; current rates are unavailable.
4. YWS collects curbside recyclables in City of Yakima.
5. City of Yakima monthly rates were calculated from weekly rates of $3.69 per week and $4.23 per week for 32 or 96-gallon carts, respectively. The rate does not include any costs for yard waste collection.

The three private haulers that currently hold the right to operate in Yakima County are:

- BDI, which operates under the certificate #G-45. BDI of Yakima is located at 1405 W Ahtanum Road, Yakima, WA, 98903-1880, and can be contacted (509) 248-7533.
- Rabanco LTD, which may operate under certificate #G12. (No current business in Yakima County.)

- YWS, which is now owned by Waste Connections, operates under certificate #G-89. YWS is located at 2812 1/2 Terrace Heights Drive, Yakima, WA, 98901-1408, and can be contacted (509) 248-4213.

Current information on the service areas for these companies can be found on the WUTC web page and in Appendix D.

Recyclable materials are collected curbside from residential and commercial sources within the City of Yakima urban area by YWS or BDI on a voluntary (subscription) basis. Table 6.2 shows the number of residential customer accounts served, style of collection, collection entity, and whether participation has increased or decreased in the opinion of the respective hauler. More information relating to recycling in Yakima County can be found in Chapter 4 Waste Reduction and Recycling.

Table 6.2 Recycling Collection

City/Town	Residential Accounts	Residential Recycling Collection Style	Collection Entity	Has Participation increased or decreased since 2010?
Yakima urban area	2,556	64-gallon cart	YWS	Not reported
Moxee	510	96-gallon cart	BDI	Reported Increase
Selah	1,217	96-gallon cart	BDI	Reported Increase
Union Gap	1,526[1]	Two Bins	BDI	Reported Increase
Total Reported	4,283	Refer to note below regarding Union Gap		

Notes:
1. Garbage and recycling collection is bundled in Union Gap, and residents can opt in for recycling collection at no additional charge. The number of residential accounts for Union Gap recycling collection is listed as the total number of residential accounts for garbage collection. However all customers may not subscribe to recycling collection.

Yard debris is collected on a voluntary (subscription) basis in six of Yakima County's incorporated areas, and is available in the unincorporated areas. The jurisdictions that offer curbside collection of residential yard debris are shown in Table 5.2 in Chapter 5 Organics, which includes style and frequency of service, collection entity, and monthly rate. More information relating to yard debris in Yakima County can be found in Chapter 5 Organics.

6.3.2 Bulky Waste Collection Service

Bulky waste collection is available countywide through YWS. BDI also offers bulky waste collection in the City of Moxee twice per year and after Christmas for the collection of Christmas trees; and the City of Selah on a call-ahead basis.

6.3.3 Commercial Collection Service

Similar to residential garbage collection, commercial garbage collection is mandatory in all jurisdictions other than the unincorporated areas of Yakima County. Style and frequency of service as well as rates charged vary by commercial customer. Recyclables collection service is optional for commercial customers.

6.3.4 Disposition of Collected Waste

Waste collected within Yakima County is required to be delivered to one of the Yakima County facilities. This requirement is part of the interlocal agreement between Yakima County and the cities and towns, which have twenty (20) year terms that began in 2002. For the unincorporated areas, it is a matter of County policy that waste is delivered to one of Yakima County transfer stations or landfills. See Chapter 13 for more information about the interlocal agreements and flow control.

6.4 STATUS OF 2010 RECOMMENDATION

The only recommendation specific to waste collection that resulted from the 2010 Plan was to provide all areas of Yakima County with bulky waste collection services. Bulky waste collection service is now provided countywide by YWS. The rates for collection effective May 1, 2015, are $7.10 per cubic yard for one to four cubic yards, and $6.38 per cubic yard for additional cubic yards of bulky materials. Items requiring a special site for disposal may incur a “time rate” as well.

6.5 PLANNING ISSUES

With respect to collection, the primary consideration for Yakima County is the relatively small population living outside the City of Yakima urban area. The urban area covers approximately 90 square miles from Moxee to the West Valley and from Selah in the north to Union Gap in the south. Most municipalities are located on the I-82 corridor that runs parallel to the Yakima River. Because of the distances involved, providing collection services to residents and businesses in the remaining 4,200 square miles of Yakima County tends to be more expensive. Collection costs for services range from $7.23 for a 48-gallon cart for weekly garbage collection in Mabton to $22.33 for a 96-gallon cart for weekly garbage collection in Granger. All incorporated jurisdictions have mandatory collection of garbage, but not for recycling or yard debris collection.

Curbside collection of recyclables is limited to the areas near the City of Yakima because of the high concentration of residents who desire the program. For cities that have variable collection rates, residents may be able to reduce their garbage bills by separating out recyclables and then paying for a smaller can or cart for garbage. Recycling services are included in the monthly garbage fee for residents in Selah, Moxee, and Union Gap. Residents of the City of Yakima pay an additional fee for recycling service by paying YWS for this service.

The cost of providing curbside recycling to residents in the less populated incorporated areas and the rural areas is approximately the same as for providing garbage collection. There are a number of factors that increase the cost of curbside recycling in less-populated areas:

1. Less material spread over larger distances: Because curbside recycling is a service provided for an additional fee, there are fewer recycling customers than garbage customers. This means that the truck must travel farther between customers. Furthermore, because the average customer sets out fewer pounds of recyclables than garbage each week, the cost of transporting recyclables must be spread out over fewer pounds of material.

2. Similar equipment costs for varying tonnages: YWS and BDI currently utilize fully-automated trucks to collect both garbage and recyclable materials. Customers are typically provided with either a 64- or 96-gallon cart for garbage, and one for recycling (if this service is elected). Garbage is compacted (compressed) in the trucks to a greater degree than recyclables, due to the nature of the material. Further, garbage and recyclables have different compaction ratios by the nature of the material, meaning one cubic yard of recyclables weighs less than one cubic yard of garbage due to the composition of recyclables (e.g., empty plastic bottles weigh less than the same volume of garbage). A truck carrying garbage hauls, on average, approximately 25% to 30% more weight than a truck of the same size carrying recyclables. Thus, while the capital equipment costs are similar, there are fewer tons of recyclables over which to spread these costs.
3. Processing and transportation costs: Once garbage is in the truck, it requires no further processing and is transported directly to the landfill for disposal. In contrast, recyclables must be taken to a materials recovery facility for sorting and baling. Some of these materials are then shipped to a distant market, usually in the Seattle, Tacoma, or Portland metropolitan areas. Approximately ten years ago, commodity prices paid for recyclables such as cardboard, steel, aluminum, and paper reached historic highs, driven by strong international demand. In 2008, the global economic slowdown caused commodities prices to decline precipitously, which mostly recovered by 2013. In 2015, commodities markets declined again. Recent experience has shown that revenue from the sale of recyclable materials can rarely be relied upon to offset the higher costs per ton of collection, processing, and shipping materials to market.
4. Garbage policy changes that could adversely impact recycling: When communities adopt garbage collection policies that limit the size garbage cart available for customers to select and adjust rates accordingly with the limited options for cart sizes, the economic incentive to recycle can be diminished.

6.6 ALTERNATIVE STRATEGIES

Alternative collection strategies are discussed below. Strategies are presented for incorporated and unincorporated portions of the planning area.

6.6.1 Alternatives

Solid Waste Collection

Curbside garbage collection programs appear to be operating satisfactorily in urban and suburban areas.

Curbside Recycling

Both the participation rate (percentage of households setting out recyclable materials) and the quantity of materials recycled per household could be increased. Increased promotion and publicity by the haulers may help increase curbside recycling rates. The relationship of collection and recycling is addressed in greater detail in Chapter 4 Waste

Reduction and Recycling. Chapter 4 Waste Reduction and Recycling, includes certain collection system alternatives to be considered in order to promote recycling.

General Collection

Options to continue to support Yakima County's overall solid waste system, while promoting proper handling of materials, are described below.

Alternative A – Require Waste to be Routed through Yakima County-owned Facilities

As noted in Section 6.3.4, waste collected within Yakima County is required to be delivered to one of the Yakima County facilities through interlocal agreements with the cities and towns. The interlocal agreements began in 2002, and have twenty year terms. With the expiration of the interlocal agreements in 2022, Yakima County should consider renewing the interlocal agreements with each of the cities and towns, which may include beginning discussions with the cities and towns in advance of 2022.

Alternative B – Collection Contract Compliance with the Plan

In order to check that the collection contracts the cities within Yakima County have with private haulers comply with the Plan, the cities could implement a contract review process. Yakima County could provide a checklist of items that should be considered by the contract administrators in each city to review that the collection contracts are in compliance with the Plan. The review process could occur at the time of renewals and/or re-procuring.

Alternative C – Adequate Space for Garbage and Recycling Collection

In order to minimize the issue of lack of space for garbage and recycling collection, Yakima County could consider adopting a requirement for new developments to provide adequate space to accommodate effective garbage and recycling collection. This requirement could be incorporated in the land development code, likely Chapter 19.12 Urban Residential Districts.

Note that a Yakima County land development code would affect developments only in unincorporated areas. If cities were to incorporate a similar land development code, they would need to do so within their own jurisdictions.

6.6.2 Evaluation of Alternative Strategies

Consistency with Planning Objectives

The alternative strategies support the planning objectives of ensuring reliable services for managing solid waste materials and encouraging waste reduction and recycling programs.

Waste Reduction/Diversion Potential

Alternative A does not necessarily increase the potential for waste reduction or diversion, though it does ensure proper handling of waste. Alternative B would support waste reduction and diversion by ensuring the strategies included in the Plan are incorporated

in collection contracts, as appropriate. Alternative C would support waste reduction and diversion by ensuring adequate space for recycling collection at new developments.

Customer Preferences

Alternative A does not directly impact customers. Alternative B would only impact customers if a change in collection contract occurred in order to comply with the Plan. Alternative C would benefit customers of future developments by providing adequate space for garbage and recycling collection.

Implementation Costs

Alternative A implementation costs would only include minimal cost for administrative tasks for renewing interlocal agreements. Alternative B implementation costs would also be minimal, and may include Yakima County staff time to develop a checklist for use by contract administrators in each of the cities. Alternative C implementation costs would also be minimal, and may include Yakima County staff time to develop the proper language for modifying the land development code. Accommodating garbage and recycling collection is not expected to add any development costs for new developments, as it would be a design element prior to construction.

Rating of Alternatives

The alternatives are compared with respect to the evaluation criteria in Table 6.3 using a rating of high, medium, and low.

Table 6.3 Summary Rating of the Collection System Strategies

Alternative		Consistency with Planning Objectives	Waste Reduction/ Diversion Potential	Customer Preferences	Cost to Implement	Overall Rating
A	Require Waste to be Routed through Yakima County-Owned Facilities	H	L	H	L	M
B	Collection Contract Compliance with the Plan	H	M	M	L	M
C	Adequate Space for Garbage and Recycling Collection	H	H	H	L	M

H – High, M – Medium, L – Low

6.7 RECOMMENDED ACTIONS

The following recommendations are being made for collection programs:

SWC1) Continue to require waste to be routed through Yakima County-owned facilities in future interlocal agreements.

SWC2) Review collection contracts to confirm compliance with the Plan.

Consider requiring adequate space for garbage and recycling collection in new housing developments by modifying land development codes.

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Chapter 7 TRANSFER SYSTEM

7.1 INTRODUCTION

This chapter discusses existing transfer facilities and programs, identifies relevant planning issues, and develops/evaluates alternative strategies for transfer of solid waste to disposal sites.

7.2 BACKGROUND

The transfer system in Yakima County includes three public facilities and one private facility. The public facilities are Lower Valley Transfer Station (LVTS), Terrace Heights Transfer Station (THTS) and Cheyne Transfer Station (CTS). THTS and CTS are co-located at their respective landfills and currently serve self-haulers for wastes deposited at these disposal sites. LVTS serves both commercial and self-haul waste for final disposal at CLF. The private facility, owned and operated by YWS (a subsidiary of Waste Connections), is located near Granger and serves self-haulers primarily from the Yakama Nation and vicinity.

7.2.1 Goals and Objectives for Transfer

The objectives of this Plan related to waste transfer include:

- Ensure convenient and reliable services for managing solid waste materials;
- Promote the use of innovative and economical waste handling methods;
- Reduce the environmental impacts to air, water, and land that are associated with waste generation, transportation, handling, recycling, and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping;
- Ensure compliance with State and local solid and MRW regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

An efficient transfer system supports the overall Plan. For example, transfer stations help reduce illegal dumping by providing a convenient and economical waste disposal alternative for those who generate relatively little waste, generate larger quantities on an intermittent basis, or choose not to subscribe to curbside collection services. Transfer stations also present an opportunity to recycle materials that are not picked up at the curbside. They can also serve as an information source about various waste management programs and options that are available to citizens.

7.2.2 State Legislation, Regulations, and Guidelines for Waste Transfer

The siting, design, and operation of transfer facilities are addressed in WAC 173-350-310, which regulates intermediate solid waste handling facilities.

7.3 EXISTING PROGRAM ELEMENTS

Figure 7.1 provides a map of the existing Yakima County transfer stations and their locations relative to the delineated County service areas.

7.3.1 Lower Valley Transfer Station

LVTS opened in 1997 and serves both commercial and city garbage trucks and self-haulers (residents and businesses using cars, pickup trucks and other trucks). LVTS includes a single vehicle scale, scalehouse, transfer building, employee building, and areas to receive source- separated self-haul recyclables, self-haul and commercial yard debris, white goods (major appliances), tires and limited types and quantities of MRW.

Waste tipping and transfer takes place in a 5,000 square feet (SF) metal building with two bays for top- loading transfer trailers using a rubber tire bucket loader. A road tractor pulls loaded trailers to the working face at CLF for disposal.

7.3.2 Terrace Heights Transfer Station

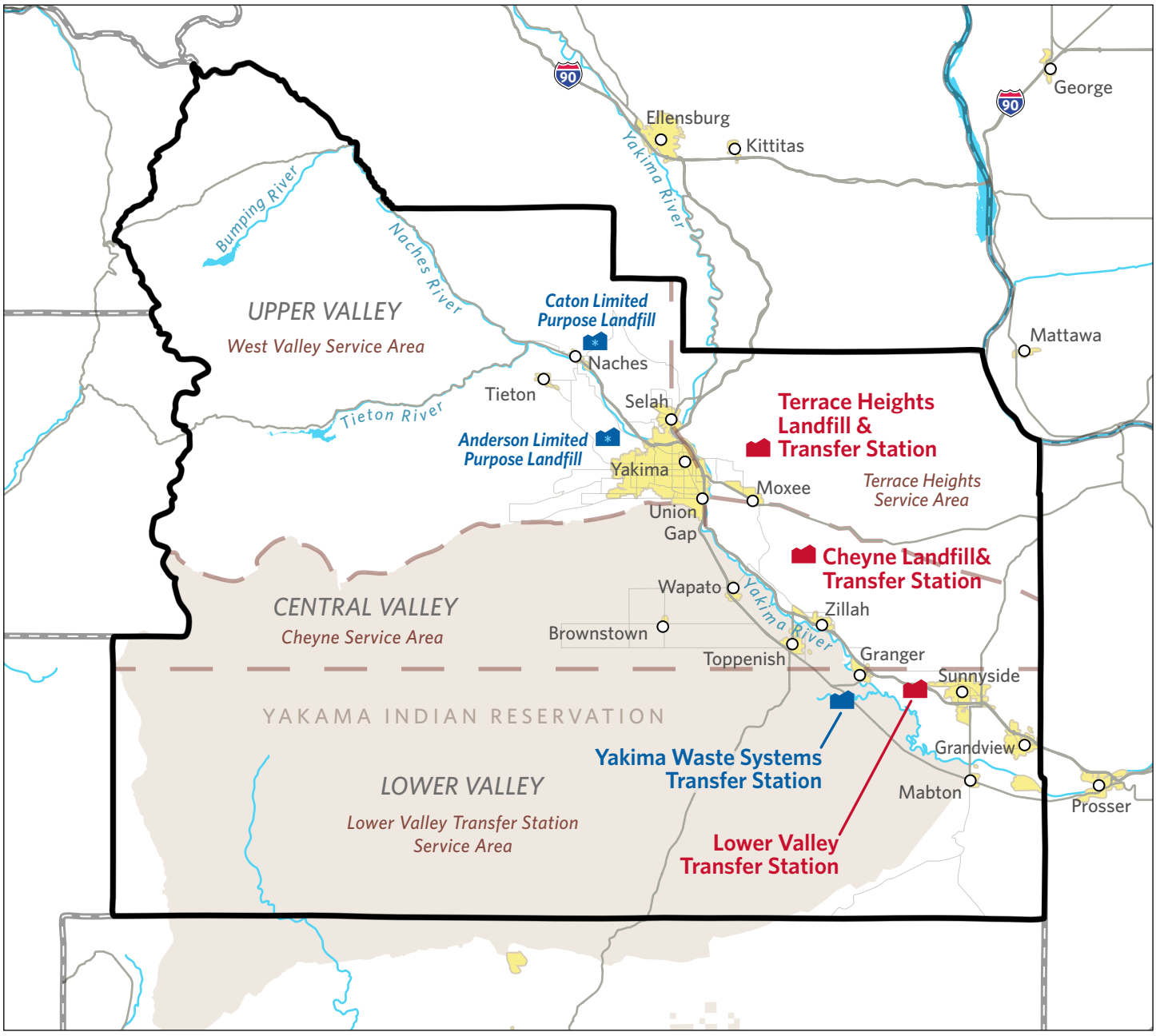
THTS was built in 2006 on the THLF site and serves self-haulers in cars and pickup trucks. Commercial and city garbage trucks unload directly at the working face of the landfill. THTS shares some of the facilities that are also used by the landfill operations, including three vehicle scales, two scalehouses, and an employee building. There is a MRW facility and shared areas for receiving source- separated self-haul recyclables, self-haul and commercial yard debris, white goods, and tires. The transfer building is a 20,000 SF metal building with two bays for top-loading transfer trailers using a rubber tire bucket loader. When full, the trailers are hauled to the THLF working face and unloaded.

7.3.3 Cheyne Transfer Station

CTS was built in 2013 on the CLF site and serves self-haulers in cars and pickup trucks. Commercial and city garbage trucks unload directly at the CLF working face. The CTS serves to remove self-haul customers from the landfill active face. The CTS has a covered solid waste transfer area, drop-off area for source- separated self-haul recyclables, a secured canopy for MRW collection, and yard waste, tire, and appliance collection areas. The transfer building is an approximately 10,000 SF metal building. When full, the trailers are hauled to the CLF working face and unloaded.

7.3.4 Granger Transfer Station

Yakima Waste Systems owns and operates a private transfer station in Granger. It is open to the public and primarily serves self-haulers in and around the Yakama Nation. Besides recyclables and white goods, it accepts some limited types of MRW, mostly latex and oil-based paints, which are then hauled to the HSBWCF at THTS.



Legend

- Yakima County Existing Landfills/Transfer Stations
- Private Existing Landfills/Transfer Stations *(* = Limited Purpose)*
- County Boundary

Figure 7.1

Yakima County Solid Waste Facilities

Yakima County Solid Waste and Moderate Risk Waste Management Plan

7.4 STATUS OF 2010 RECOMMENDATIONS

The status of the recommendations made by the 2010 Solid Waste Management Plan is shown in Table 7.1.

Table 7.1 Status of 2010 Recommendations for Transfer

Recommendations	Status
Evaluate the feasibility of a self-haul unloading facility at the Cheyne Landfill.	Done – CTS constructed in 2013
Expand the THTS to accommodate commercial traffic when Terrace Heights Landfill closes.	Ongoing for future planning – THLF Phase 1 capable of receiving waste until 2027.
Consider purchasing (or taking an option on) property suitable for a future transfer station as land becomes available and as funds allow.	Ongoing consideration

7.5 PLANNING ISSUES

7.5.1 Transfer Capacity

As stated, commercial and city garbage trucks unload directly at the working face of CLF and THLF. Therefore, only self-haulers utilize the CTS and THTS. The LVTS allows both commercial and self-hauler traffic. Commercial vehicles (garbage trucks, whether publicly or privately owned) generally use the LVTS during the week. Some self-haulers such as businesses and small construction or landscaping contractors are also weekday users. However, the majority of self-hauler traffic at Yakima County transfer stations are residents that typically use the stations on weekends, in lieu of subscribing to regular curbside garbage collection, or when they have accumulated larger quantities of waste (e.g., spring cleaning).

7.5.2 Future Station Demand

In April 2008, URS developed the *Solid Waste Level of Service Study & Infrastructure Needs Assessment* for the County. That study evaluated solid waste infrastructure needs over the next 20 years and suggested various alternatives to alleviate crowding at the transfer stations and to maintain service levels for waste transfer. The study estimated design capacities and future demand for transfer capacity for the LVTS and the THTS based on tonnage projections through 2030. Table 7.2 shows updated MSW tonnage projections through 2030, and provides estimates of peak vehicles per hour (VPH) rates for both commercial and self-haulers for each transfer station. The annual number of vehicles was calculated based on assumed average payloads for commercial and self-haul vehicles carrying MSW and yard debris. Peak hourly arrival rates in VPH were estimated at 20% of the total daily volume for commercial vehicles and 15% for self-haul vehicles.

Table 7.2 Transfer Station Demand

Transfer Station	Year	MSW (TPY)	Peak VPH (commercial MSW)[2]	Peak VPH (self- haul MSW)[3]
Lower Valley	2015	38,131[1]	8	22
	2020	40,455[1]	8	24
	2025	42,365[1]	8	25
	2030	44,225[1]	9	26
Cheyne	2015	39,222[1]	NA[5] – tip at landfill	23
	2020	41,612[1]	NA – tip at landfill	24
	2025	43,577[1]	NA – tip at landfill	25
	2030	45,490[1]	NA – tip at landfill	26
Terrace Heights	2015	170,905[4]	NA – tip at landfill	99
	2020	181,321[4]	NA – tip at landfill	105
	2025	189,882[4]	NA – tip at landfill	110
	2030	198,219[4]	39	115

1 Assume Cheyne Landfill will continue to receive 30% of County MSW disposal, and assume LVTS will receive approximately 50% of total waste disposed at Cheyne.
2 Assumes an average of 4 tons/vehicle, 260 days/year, peak hour = 20% of daily traffic.
3 Assumes an average of 1 ton/vehicle, 260 days/year, peak hour = 15% of daily traffic.
4 Assumes THLF will continue to receive 70% of County MSW disposal.
5 NA – Not Applicable

7.5.3 Lower Valley Transfer Station

The existing 100-foot-wide transfer building has space for between six and eight vehicles to unload simultaneously. It is common design practice to allow a 12-foot-wide stall for a self-haul vehicle and a 15-foot-wide stall for a commercial vehicle. In actual practice, however, the painted lines marking the stalls become eroded or covered with trash; hence, the actual number of stalls is approximate. Commercial garbage trucks are mechanically unloaded; it is common to assume that a single stall can handle six commercial VPH. Because self-haul vehicles take more time to unload manually; the typical assumption is four self-haul VPH.

In 2030, the peak commercial traffic (weekdays) is estimated to be 9 VPH, which would require only two of the six commercial-width stalls. The situation is more complex for self-haul vehicles: since non-professional drivers are generally less experienced at maneuvering in tight spaces, the number of potential unloading stalls could fluctuate between six and eight. Assuming that it takes 15 minutes to park and unload a self-haul vehicle, the capacity of the station on a weekend could range from 24 to 32 VPH based on six to eight stalls. Peak hourly self-haul traffic is estimated to increase to 26 VPH in 2030. Therefore, design capacity is within the expected traffic range, although self-haul customers may experience some delays and extended waiting times on peak weekends.

On weekends at LVTS (and at most transfer stations in general), the limiting factor for station capacity is the ability to handle the volume of self-haul vehicles. The challenge is to help self- haulers back up and unload quickly, thus minimizing the time that other customers must wait in a queue.

On weekdays at LVTS, when most of the waste tonnage is handled, the limiting factor is the need to stockpile waste on the floor. The County currently uses road tractors to pull transfer trailers to CLF for disposal. Based on a round trip of about one hour between LVTS and CLF and a payload of 20 tons, a trailer can make seven round trips and haul about 140 TPD to CLF each day. While a trailer is on the road, waste must be stored on the floor at LVTS. This restricts the ability to efficiently maneuver and unload vehicles and to swap-out trailers after they are loaded.

The LVTS, which was opened in 1996, has reached its design capacity. Continued use of LVTS needs to be analyzed to determine options to better serve customers effectively and efficiently.

7.5.4 Terrace Heights Transfer Station

The existing 165-foot-wide north wall of the transfer building is completely open and has room for approximately 11 self-haul vehicles to unload simultaneously. The west wall is also open and can accommodate up to 8 more vehicles. This allows 72 self-haul vehicles to unload per hour, assuming a turnover of 4 VPH per stall (15-minute assumed load-out time). In 2015, the peak arrival of self-haul vehicles is estimated to be about 99 VPH. As outlined on Table 7.2, this situation is expected to worsen as the population and waste stream grow. This means on some peak traffic days, the station's ability to quickly process self-haul vehicles is exceeded, and some drivers must wait in a queue for a stall to become available.

The THTS building has a modular design that allows it's capacity to be expanded by adding one or more building modules on the east side of the building. This would serve to increase the number of tipping stalls available.

THTS typically does not handle commercial trucks, as these usually go directly to the working face of THLF. When Phase 1 of THLF has reached its capacity, the County plans to provide transfer station capacity at this site for its commercial customers. The evaluation of alternative disposal strategies in Chapter 8 analyzes the possibility and conceptual level costs associated with expansion of the THTS to accept commercial traffic and the County's transfer of waste to CLF.

7.5.5 Cheyne Transfer Station

The existing 100-foot-wide transfer building currently houses eight, 12-foot wide unloading stalls. The design capacity of the CTS allows for a peak hourly rate of 27 self-haul vehicles to unload per hour. Peak hourly self-haul traffic is estimated to increase to 26 VPH in 2030. Therefore, design capacity is within the expected traffic range, although self-haul customers may experience some delays and extended waiting times during peak weekends. CTS currently does not typically handle commercial vehicles, as these usually go directly to the working face of CLF.

7.5.6 Potential New Transfer Station

To provide equitable levels of service to Yakima County residents, it is desirable for transfer facilities to be conveniently located to serve urban, suburban, and rural populations. This might include a new transfer station in the West Valley Service Area

and/or a new transfer station in the Lower Valley Service Area to replace the existing LVTS. Issues related to the location of solid waste transfer facilities are as follows:

- Increased travel distances for self-haulers as residential development expands to areas that are more remote from waste management facilities;
- The current and anticipated shift in the center of population and waste generation toward the West Valley Service Area;
- Traffic congestion for self-haulers from the West Valley Service Area traveling east to THTS; and,
- Suitable replacement location options in the Lower Valley Service Area for the LVTS to better serve users.

The *Solid Waste Level of Service Study & Infrastructure Needs Assessment* examined options for servicing the West Valley Service Area after THLF Phase 1 closes, including various combinations of expanding THTS or building a new transfer station. To optimize the overall transfer system, the study recommended the County:

- Work with haulers to review operations at LVTS and CLF.
- Reduce the number of self-haulers at County transfer facilities by using adjusting prices to encourage customers to either bring in heavier loads (make fewer trips) or subscribe to curbside collection.

7.6 ALTERNATIVE STRATEGIES

7.6.1 Alternatives

Alternative A – Property Search and Purchase for New Transfer Station in West Valley Service Area

To preserve the County's option to build a new transfer station at some time in the future, it is prudent to monitor the availability of suitable property. This is important in the West Valley Service Area where County population is growing at the quickest rate. Characteristics of potential sites include suitable land use/zoning, access to major roads and highways, reasonable topography, and environmental acceptability.

Alternative B – Transfer Options after THLF Closes

As discussed further in Chapter 8, Phase 1 of THLF is currently estimated to reach capacity in 2027. Current planning calls for Yakima County to cease disposal of waste in THLF at that time. When THLF no longer receives MSW for disposal, one of following options must be implemented so the West Valley Service Area waste that is currently disposed of in THLF will be delivered instead to CLF.

Each option assumes that THTS will continue to accept self-haul waste and that waste will be hauled to CLF.

- Option 1: Increase the capacity of THTS to serve commercial vehicles and support the hauling of waste to CLF;
- Option 2: Construct a new transfer station (at a different location) to serve commercial vehicles and support the hauling of waste to CLF;

- Option 3: Commercial vehicles haul directly to CLF.

The three options were examined in detail by the *Transfer Station Cost of Operations Analysis* (URS, 2009). The study determined that there is adequate space at THTS to construct the Option 1 expansion. Option 2 involves the risks and costs of finding and purchasing suitable property, successfully completing the permitting process, design and construction of an entirely new station. Option 3 involves increased transportation costs and the greatest increase in traffic in the vicinity of CLF. Option 1 was further studied by Yakima County and Chapter 8 includes information regarding an updated economic analysis of expansion of tipping capacity at THTS and hauling MSW to CLF.

Alternative C – Review LVTS Utilization by Haulers

Yakima County could work with waste haulers to review their use of LVTS and subsequent hauling of the waste to CLF. A number of non-capital adjustments such as shifting start and close times, diverting roll-off loads away from LVTS and directly to CLF, or changing the transfer trailer schedule or configuration may reduce congestion at LVTS and increase the efficiency of serving customers. Yakima County and haulers could jointly evaluate the options and implement those that meet system objectives and cost considerations. Continued use of LVTS could be analyzed to determine options to better serve customers effectively and efficiently.

Alternative D – Modification/Expansion of LVTS

Yakima County could analyze structural and site modifications to expand the capacity of LVTS to process and store more waste. Due to site restrictions and the presence of sub-surface waste, previous estimates to expand LVTS have been cost prohibitive. Yakima County could evaluate the options and implement those that meet system objectives and cost considerations.

Alternative E – Property Search and Purchase for New Transfer Station to Replace LVTS in the Lower Valley Service Area

To preserve Yakima County's option to build a replacement to the LVTS at some time in the future, it is prudent to monitor the availability of suitable property in the Lower Valley Service Area. Characteristics of potential sites include suitable land use/zoning, access to major roads and highways, reasonable topography, and environmental acceptability.

Alternative F – Permanent Closure of LVTS

The County has the option to permanently close the LVTS. This would require all waste haulers in the Lower Valley Service Area to travel to CLF. Implementation of this alternative would result in cost savings for the County, but could increase incidents of illegal dumping by customers in the Lower Valley Service Area. This would also require coordination with haulers and customers to plan for this closure and increased hauling distances.

7.6.2 Evaluation of Alternative Strategies

Consistency with Planning Objectives

The above alternatives are consistent with the objectives of convenient and reliable services; economical waste handling methods; reduction of environmental impacts

associated with waste generation, transportation, handling, recycling, and disposal; and compliance with state and local solid waste regulations.

Waste Reduction/Diversion Potential

The alternatives are neutral in that they will have little additional effect on waste reduction or diversion.

Customer Preferences

Alternatives A and E could have a favorable impact on customer convenience if new transfer station(s) were to be located in the West Valley Service Area and/or Lower Valley Service Area. Alternatives C and D have the potential to make it safer for self-haul customers to use LVTS by decreasing or managing the commercial traffic. Alternative F would likely have a negative impact on customer service, as it would require Lower Valley Service Area customers to travel to CLF for waste disposal.

Implementation Costs

Depending on selected parcel, Alternatives A and E are medium-cost methods of preserving the County's transfer options. Actual purchase of suitable parcel(s) will prevent the cost of the property from escalating in the future. Development of the property(ies) to accept MSW would have a high cost to implement. Additional benefits would include future reduction in illegal dumping if a convenient location is acquired and developed.

The cost of operation study determined implementation costs for the three options within Alternative B. Option 1, expansion of THTS, was selected because it provides the greatest benefit at the most reasonable cost. The updated economic analysis of this option in Chapter 8 supports this determination for future action (estimated to be required in 2027).

Since LVTS is currently the only transfer station where commercial and self-haulers are co-mingled, Alternatives C-E provide a range of alternatives to deal with service and handling capability at LVTS.

Table 7.3 Summary Rating of the Transfer System Strategies

Alternative	Consistency with Planning Objectives	Waste Reduction/ Diversion Potential	Customer Preferences	Cost to Implement	Overall Rating
A - Property Search and Purchase for New TS in West Valley Service Area	H	M	H	M	H
B - Expand THTS to serve commercial vehicles when THLF closes	H	L	M-H	H	H
C - Review LVTS Utilization by Haulers	H	L	M	L	MH
D – Modification/Expansion of LVTS	H	M	M-H	H	L
E - Property Search and Purchase for New Transfer Station to Replace LVTS in the Lower Valley Service Area	H	M	H	M	L
F – Permanent Closure of LVTS	M	M	L	L	L

H – High, M – Medium, L – Low

7.7 RECOMMENDED ACTIONS

The following recommendations are being made for the transfer system:

TS1) Consider purchasing (or taking an option on) property suitable for a future transfer station as land becomes available in the West Valley Service Area and as funds allow.

TS2) Expand tipping capacity at the THTS to accommodate commercial traffic when THLF Phase 1 reaches capacity (currently estimated for 2027).

TS3) Review LVTS utilization by commercial haulers to increase efficiency and convenience of operations for both commercial and self-haul customers.

TS4) Consider commissioning a more detailed study to evaluate Alternatives D, E, and F at the LVTS to determine the best course of action at that facility.

Chapter 8 DISPOSAL

8.1 INTRODUCTION

This chapter discusses existing programs and facilities, identifies relevant planning issues, and develops/evaluates alternative strategies for disposal of MSW.

8.2 BACKGROUND

8.2.1 Goals and Objectives for Disposal

Goals and objectives specific to disposal (as shown on page 1-2 of this Plan) include:

- Ensure convenient and reliable services for managing solid waste materials;
- Promote the use of innovative and economical waste handling methods;
- Reduce environmental impacts to air, water, and land that are associated with waste generation, transportation, handling, recycling and disposal; and
- Reduce the occurrence and environmental impacts associated with illegal dumping.

8.2.2 State Legislation, Regulations, and Guidelines for Disposal

This chapter provides an update of Yakima County's waste disposal system, which is regulated by Chapter 70.95 RCW Solid Waste Management, Chapter 173-350 WAC Solid Waste Handling Standards, and Chapter 173-351 WAC Criteria for Municipal Solid Waste Landfills

8.2.3 Waste Disposal Statistics

As population growth occurs in the towns, cities, and unincorporated areas of Yakima County, the total tonnage of solid waste also increases. Table 8.1 summarizes the quantities of solid waste (excluding yard debris and construction/demolition debris) received at the three Yakima County-operated facilities in the last ten years. MSW tonnage into Yakima County facilities has shown a modest increase since 2010. In 2010, 233,113 tons of MSW was accepted and disposed of through the Yakima County Public Services Solid Waste Division facilities. In 2016, tonnage is estimated to be 250,000 tons. This reflects a 7% increase in tonnage over a 7-year period.

When forecasting solid waste tonnages, it is sometimes preferable to estimate either higher or lower than the number predicted by population growth and historical waste generation patterns. When planning for the construction and operation of solid waste facilities such as transfer stations and landfills, it is prudent to project higher tonnages. This helps ensure that adequate waste- handling capacity is in place when it is needed. Conversely, when estimating revenues from tipping fees, it may be prudent to project lower tonnages, as this tends to underestimate revenues somewhat. If tonnages and revenues do in fact turn out to be low (by historical standards), this method helps reduce the size of rate increase that may be needed to meet revenue projections.

The impact of the economic slowdown is reflected in the actual 2008 tonnage and in subsequent years until 2011 (Table 8.1). Increase in tonnage following 2011 is likely due to both population increase and economic recovery. The recent tonnages (since 2011)

were used in the solid waste rate model (HDR Engineering, Inc. 2016) to project revenues from tipping fees.

Table 8.1 Solid Waste Received at County Facilities (TPY)

Year	Terrace Heights Landfill*	Cheyne Landfill			Total Landfilled***
		Received at Cheyne Landfill	Lower Valley Transfer Station**	Cheyne Landfill Total***	
2006	176,304	33,539	39,062	72,331	248,635
2007	173,885	36,867	37,049	74,686	248,571
2008	164,977	32,721	37,970	71,065	236,042
2009	161,330	32,532	38,571	71,104	232,434
2010	161,838	32,161	39,114	71,275	233,113
2011	153,918	30,764	38,990	69,755	223,390
2012	158,383	32,493	38,975	70,827	228,307
2013	162,639	34,889	38,668	73,018	235,657
2014	166,135	38,866	34,271	72,564	238,699
2015	170,905	39,222	38,131	76,629	247,534

*Tonnages include Asbestos landfilled.

**Lower Valley Transfer Station MSW is disposed of at Cheyne Landfill.

***Total Landfilled includes tonnage disposed at Terrace Heights and total tonnage disposed at Cheyne Landfill. Tonnage disposed at Lower Valley Transfer Station includes other waste that are not transferred to and disposed of at Cheyne Landfill, refer to Chapter 4 for additional information regarding wastes collected but diverted from landfill disposal. Therefore Total Landfilled does not exactly match the sum of tonnages received at Terrace Heights Landfill, Cheyne Landfill, and Lower Valley Transfer Station.

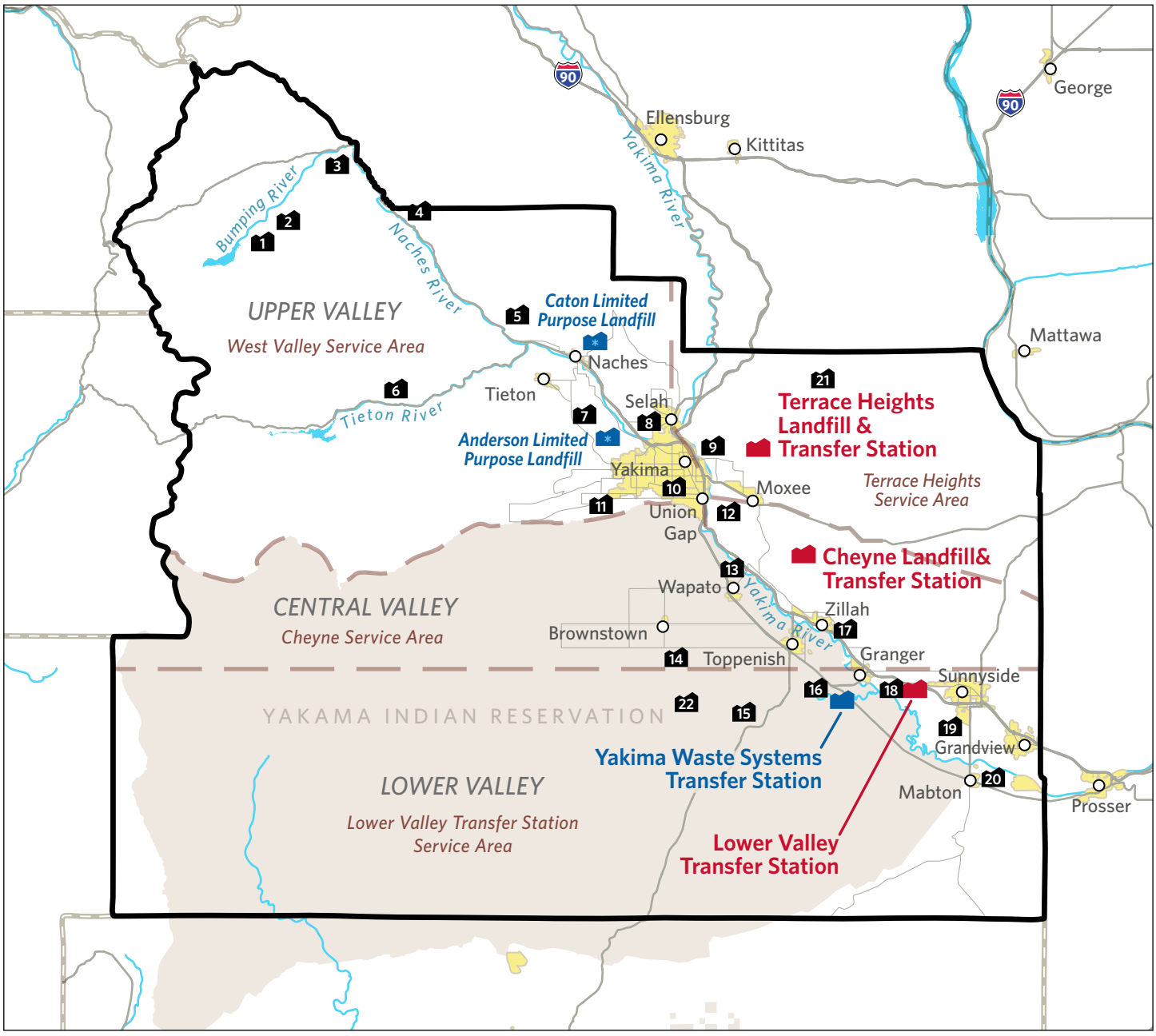
8.3 EXISTING PROGRAM ELEMENTS

Currently operating landfills in Yakima County are shown in Figure 8.1 on the following page.

8.3.1 Terrace Heights Landfill

Located about six miles east of the City of Yakima, the THLF began operations in 1972. Principal users include the cities of Selah, Moxee, Union Gap, and Yakima; the towns of Tieton and Naches; YWS; agricultural, construction, and food processing firms, self-haul businesses, and residential households. Commercial and municipal garbage trucks unload at the working face of the landfill. For safety reasons, self-haulers unload inside the onsite THTS building; the waste is then moved in transfer trailers to the working face.

Since 2001, THLF has disposed of approximately 70% of the total solid waste received at the three County facilities. Recent estimates indicate that Phase 1 of THLF will reach capacity in about 2027. Phase 2 is estimated to reach capacity in 2030, but Yakima County may choose to reserve this for emergency use (see Alternative B in subsection 8.6.1).The actual timing of closure will be affected by waste generation, recycling, and disposal rates, as well as landfill operations and design factors.



Legend

- Yakima County Existing Landfills/Transfer Stations
- Private Existing Landfills/Transfer Stations *(* = Limited Purpose)*
- Closed/Abandoned Disposal Sites

1	Bumping 1	6	Trout Lodge	11	Wiley	16	Tule	21	US Military
2	Bumping 2	7	Cowiche	12	Moxee	17	Zillah	22	Yakama Nation
3	Indian Flats	8	Selah	13	Wapato	18	Snipes Mountain		
4	Cottonwood	9	Yakima 1	14	Tecumseh	19	Sunnyside		
5	Horseshoe Bend	10	Yakima 2	15	Toppenish	20	Grandview		

Figure 8.1

Yakima County Solid Waste Sites

Yakima County Solid Waste and Moderate Risk Waste Management Plan

Yakima County has increased its airspace utilization factor (AUF), tonnage of waste disposed divided by airspace consumed, at the THLF over the past several years. The better AUF is likely due to successful operational practices and equipment upgrades such as the use of a larger mobile compactor since 2008 and switching from soil to an alternative daily cover, PosiShell, starting in 2012. Yakima County exceeded 1,200 pounds per cubic yard for the recent analysis period (2013-2015 analysis) which is commendable for a landfill in an arid climate. Maintaining these operational practices will continue to extend the remaining airspace at THLF.

8.3.2 Cheyne Landfill

Located about six miles north of the City of Zillah, the CLF began operations in 1972. Principal users include the cities of Zillah, Toppenish, Wapato, Granger, Sunnyside, Grandview, Harrah and Mabton; Yakima Waste Systems; agricultural, construction, and food processing firms, self-haul businesses, and residential households. In recent years, the CLF has accepted for disposal about 30 percent of MSW received at County facilities. Landfill Cell 1 is expected to reach capacity in 2016. In November 2008, Yakima County Public Services Solid Waste Division received a solid waste permit from the Yakima County Health District for development of a new cell. Cell 2 was permitted and developed so Yakima County can continue to provide long-term waste disposal at a landfill owned and operated by Yakima County.

Cell 2 excavation began in 2010 and future excavation depends on disposal needs. Cell 2 is anticipated to be full in 2053 and is expected to hold 13.2 million cubic yards of waste on about a 75-acre footprint. Construction of associated facilities including soil stockpiles, access roads, scales, scalehouse, and a residential self-haul drop-off area, was completed in 2013.

Similar to THLF, Yakima County has also increased the AUF at CLF over the past two years, and the composite AUF over the past eight years has steadily increased. These results are likely due to successful operational practices and equipment upgrades such as the use of a compactor starting in 2007 and a new, larger compactor in 2011. In addition, the settlement attributes of the filling configuration at this site (four-sided pyramid design with piggybacking of waste) allow for AUF values in excess of 1,200 pounds per cubic yard. This is commendable for a landfill in an arid climate. Maintaining these operational practices will continue to extend the remaining airspace at CLF.

8.3.3 Other Landfills

The Anderson Limited Purpose Landfill in Yakima and Caton Limited Purpose Landfill in Naches are privately owned and operated. These facilities are limited purpose, construction and demolition landfills that are open to the public. In addition, the Yakima Training Center Limited Purpose Landfill in Yakima operates a facility restricted to military use only. These landfills are discussed further in Chapter 9 – Construction, Demolition and Landclearing Debris and Green Building Practices.

8.3.4 Closed Landfills

There are twenty-two closed or abandoned disposal sites in Yakima County. The Selah Dump, sometimes called the Selah Landfill, is included on Ecology's Hazardous Sites List. The site originally had a ranking of 5, indicative of the lowest assessed risk, but Ecology revised its Hazardous Sites List and raised the Selah Dump's ranking to 3 in

July 2004, which reflects a higher assessed risk (URS 2010). According to the August 28, 2015, issue of Ecology's Hazardous Sites List, the site still has a ranking of 3 and is awaiting cleanup.

Snipes Mountain Landfill located in Sunnyside is also included on Ecology's Hazardous Sites List. As of August 28, 2015, the site has a ranking of 4, indicative of a lower assessed risk. Yakima County has an ongoing monitoring program for this site.

8.3.5 Waste Import

In accordance with Resolution 520-1994, disposal facilities operated by Yakima County (i.e., THLF and CLF) are not allowed to accept out-of-county solid waste. However, the two private landfills, Caton Limited Purpose Landfill and Anderson Limited Purpose Landfill, do accept out-of-county wastes.

8.3.6 Waste Export

Biomedical and pathological wastes are typically generated by hospitals, medical clinics, dental offices, and nursing homes and regulated under Chapter 70.95K RCW. Refer to Chapter 10 Special Wastes for detailed information.

8.4 STATUS OF PREVIOUS RECOMMENDATIONS

The status of the recommendations made by the previous Plan is shown in Table 8.2.

Table 8.2 Status of Previous Recommendations for Disposal

Recommendations	Status
Maintain the option to preserve capacity at THLF	Ongoing
Consider purchasing (or taking an option on) property suitable for landfilling purposes as land becomes available and as funds allow.	Ongoing
Consider conversion technologies in the future, but only if these can be proven to be feasible and cost-effective.	Ongoing

8.5 LANDFILL GAS PLANNING ISSUES

Landfill gas (LFG) generated by decomposing garbage contains approximately 50% methane, a GHG. If the methane is not captured and destroyed, it could eventually escape from the landfill into the atmosphere and contribute to global climate change.

8.5.1 Anticipated Upcoming Regulations

The following regulations are either being introduced or amended in 2016:

- Federal New Source Performance Standards (NSPS) and Emission Guidelines (EG): These rules are under revision to reduce the annual Non-Methane Organic Compound (NMOC) emission threshold/trigger for an active LFG collection and control system (GCCS) from 50 Mg/year down to 34 Mg/year. The EPA issued final updates to the NSPS (40 CFR Subpart XXX) and the EG (40 CFR Subpart Cf) on July 14, 2016. These subparts have been finalized but not yet published in the Federal Register (as of the date of this Plan). The updating of the EG will be applicable to the existing County landfills after the local Administrator (Yakima Regional Clean Air Agency) submits the required implementation plan to EPA within

9 months of publication in the Federal Register. The EPA will then review and approve the implementation plan in order for the rule to be promulgated and active.

- September 15, 2016 Ecology adopted a new Clean Air Rule (WAC 173-442) described as a type of cap and trade program that becomes effective on October 17, 2016. The documentation published by Ecology indicated THLF may be affected by this proposed rule. It is unclear at this time of publishing this Plan when or how the rule would affect the facility.
- WSDA revised Chapter 16-470 WAC, Quarantine – Agricultural Pests in May 2016. Due to restrictions on transfer of yard waste across apple maggot quarantine areas, some yard waste is disposed of in THLF. Refer to Chapter 5 Organics for additional information.

8.5.2 Terrace Heights Landfill Gas

In 2014, Yakima County commissioned the design of a Soil Vapor Extraction (SVE) system for the northern boundary of THLF, as an option to mitigate subsurface migration of LFG across the northern boundary of the landfill. The approach was approved by the Yakima County Health District, however due to the proposed changes and/or new regulations outlined in Section 8.5.1, a full GCCS may be required within the next few years. With this possibility, Yakima County has suspended plans for installation of the SVE system at the present time, and will comply with the upcoming regulatory changes as required. This current plan of action has been approved by the Yakima County Health District.

8.5.3 Cheyne Landfill Gas

Data collected at the western property boundary of the CLF indicate subsurface LFG migration across the western boundary. Elevated levels of methane were encountered in a monitoring probe near the property boundary in 2012. Therefore, evaluation of options for the offsite migration at the western boundary, are being considered within the context of upcoming regulations. Recent NSPS Tier 2 testing at the site performed in July 2016 indicated NMOC emission rate results less than 13 Mg/year for the next five years. This level is below both the current (50 Mg/year) and newly proposed (34 Mg/year) thresholds for installation of a GCCS as the CLF.

Notwithstanding, the recent LFG migration issues, coupled with the proposed tightening of regulations regarding NMOC and GHG at both the state and federal levels could result in a future requirement(s) for a GCCS at the CLF at some point. Evaluated options to address the LFG migration at the western property boundary currently include property purchase (with adjustment of property boundaries and probe locations) as well as the installation of SVE or GCCS infrastructure that could be installed to provide physical control of LFG migration.

8.6 ALTERNATIVE STRATEGIES

8.6.1 Alternatives

Alternative A – Preserve Landfill Capacity at Terrace Heights

Once Phase 1 of THLF reaches capacity, there is airspace available for room for an additional three years' worth of MSW disposal (Phase 2). Since THLF is conveniently

located near the major population center of Yakima County, it is prudent to maintain the option to fill Phase 2 of THLF under certain circumstances: for example, if emergency conditions caused temporary closure of CLF or if high fuel prices made hauling waste to CLF prohibitively expensive.

Alternative B – Provide for Future Landfilling Needs

Unused landfill capacity, also known as "airspace," is a valuable commodity that can be "banked" for use by future generations of Yakima citizens. As such, if property suitable for landfilling becomes available at an economically attractive price, it would be worthwhile for Yakima County to consider either taking an option on the property, or purchase it outright.

Characteristics of a suitable property include location either adjacent to an existing landfill or near a population center; appropriate size, shape, soils, and topography; suitable land use zoning; and absence of sensitive receptor neighbors.

Alternative C – Consider Conversion Technologies

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

There is limited experience in applying these conversion technologies to MSW in the United States. MSW is a highly variable mix of materials that is more difficult to process than more homogenous waste streams such as wood chips or certain industrial wastes. Technology vendors have proposed various projects and a few pilot projects are currently operating. To be considered seriously, waste conversion technologies will need a track record of successful full- scale projects that demonstrate economic feasibility through the sale of energy and/or byproducts. In addition, they must gain public acceptance, meet regulatory compliance and environmental protection standards, and demonstrate economic viability over the long-term. MSW conversion technologies continue to be considered for projects across the country. These bear watching, especially if the current volatility in oil prices continues.

Alternative D – Consider Long Haul to Roosevelt Regional Landfill

Yakima County could consider hauling MSW to a private landfill, such as Roosevelt Regional Landfill in Roosevelt, Washington, approximately 90 miles from City of Yakima. Roosevelt Regional Landfill operated by Allied Waste accepts waste from multiple jurisdictions. For Yakima County, this approach generally would require adding commercial transfer stations at both CLF and THLF, adding hauling capacity (both equipment and drivers), ceasing landfilling operations, closing the active landfills, starting landfill post-closure care, and hauling MSW to Roosevelt Regional Landfill.

Alternative E – Landfill Gas to Energy

As described in Section 8.5, anticipated upcoming regulatory changes may require the installation of a full GCCS at THL. In addition, installation of a full GCCS is one of the options Yakima County is considering in response to subsurface LFG migration CHL. If Yakima County decides to move forward with GCCS at either of its landfills, it may be

worthwhile to consider beneficially using the collected LFG to generate electricity or other energy uses rather than destruction in a flare.

8.6.2 Evaluation of Alternative Strategies

Consistency with Planning Objectives

All five alternatives are consistent with the objectives of this Plan.

Waste Reduction/Diversion Potential

Alternatives A and B will not divert material from landfill disposal, but could change which County-operated landfill would receive the waste. Alternative C could potentially divert a large amount of waste from landfill disposal. Alternative D will not divert material from landfill disposal, but a County operated landfill would not receive the waste. Alternative E will not divert material from landfill disposal.

Customer Preferences

Customer Preference is not impacted by any of the alternatives, therefore Customer Preference is not included in evaluation of alternatives.

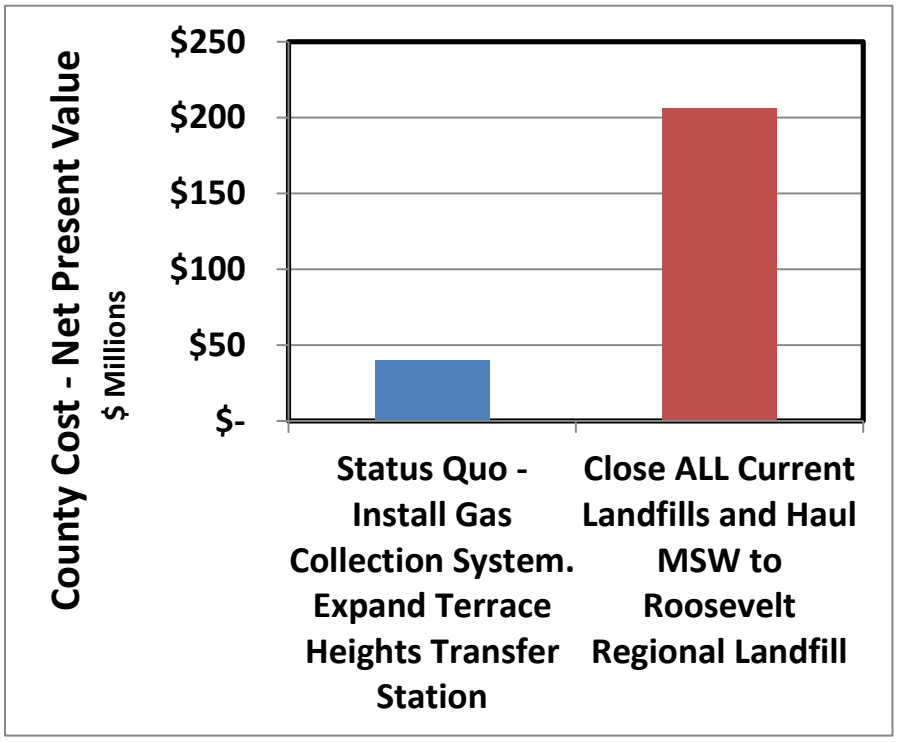
Implementation Costs

An economic analysis was prepared in 2015 to provide a comparison regarding keeping both CLF and THLF open (consistent with Alternative A) as the "status quo" option; versus Yakima County long hauling waste to Roosevelt Regional Landfill (consistent with Alternative D) and ceasing waste disposal in Yakima County landfills. The comparison of Alternatives A and D generally consisted of the following:

- Alternative A (Status Quo) - Maintain operations at THLF until Phase 1 airspace is utilized. Phase 1 is currently projected to be full in 2027. When Phase 1 is nearing capacity, additional transfer station tipping capacity would be added for commercial vehicles. THLF Phase 1 would be closed in 2027, which assumes a GCCS would be installed. MSW would then be hauled by Yakima County from THTS to CLF for disposal.
- Alternative D (Close all landfills and long-haul all waste) - In 2017, Yakima County would start the process of adding transfer station capacity at THTS and CTS facilities for commercial vehicles. This would require the design and subsequent construction of the new transfer station capacity to be completed by 2019. Long haul operations would begin in 2019. Also in 2019, both landfills would be closed and start post-closure care. MSW would be hauled from LVTS, CTS, and THTS to Roosevelt Regional Landfill for disposal.

The detailed analysis and relevant assumptions are included as Appendix E. The net present value comparison (analyzed through 2044) for the two alternatives is shown graphically in Figure 8.2. As shown in Figure 8.2, the economic evaluation found that the least cost alternative is to maintain the status quo waste disposal operations at CLF and THLF and forego disposal of Yakima County MSW at Roosevelt Regional Landfill.

Figure 8.2 Cost Comparison (Net Present Value) of Alternatives A and D



Costs for implementation of Alternative C, conversion technologies, and Alternative E, LFG to energy, varies significantly depending on the type of technology or system considered. A cost analysis for implementation of these alternatives has not been completed.

Table 8.3 Summary Rating of Disposal Strategies

	Alternative	Consistency with Planning Objectives	Waste Reduction / Diversion Potential	Cost to Implement	Overall Rating
A	Preserve landfill capacity at THLF	H	none	L	H
B	Provide for future landfilling needs	H	none	L	H
C	Consider conversion technologies	H	H	H	L
D	Long Haul to Roosevelt	L	none	H	L
E	Landfill Gas to Energy	H	none	M	M

H – High, M – Medium, L - Low

8.7 RECOMMENDED ACTIONS

The following recommendations are being made for disposal programs:

D1) Maintain the option to preserve capacity at THLF. Fill THLF Phase 1 to its permitted capacity, predicted to be 2027.

D2) Consider purchasing (or taking an option on) property adjacent to CLF suitable for landfilling purposes.

D3) Consider LFG to energy in the future, but only if this can be proven to be cost-effective.

Chapter 9.0 CONSTRUCTION, DEMOLITION, AND LAND CLEARING DEBRIS AND BUILDING MATERIALS

9.1 INTRODUCTION

This chapter discusses existing programs, identifies relevant planning issues, and evaluates alternative strategies for construction, C&D debris, and also addresses salvage and reuse of building materials.

9.2 BACKGROUND

C&D wastes contain those materials used in the construction process or that are present in the structure being demolished. Construction wastes include substantial amounts of wood scraps, drywall scraps, and excess concrete, as well as cardboard boxes and other packaging used to hold materials or products prior to installation. Demolition wastes typically contain substantial amounts of concrete, brick, wood, drywall and other materials. Land clearing debris (tree stumps, brush and soil) is often included with C&D wastes, but little of this is actually sent to disposal facilities.

Another component of C&D wastes are reusable building materials, which are salvaged materials from construction or demolition that would otherwise be landfilled.

9.2.1 Goals and Objectives for C&D Wastes

Overall goals and objectives that apply to construction, demolition and land clearing debris and building materials include:

- Ensure convenient and reliable services for managing solid waste materials;
- Promote the use of innovative and economical waste handling methods;
- Encourage the recovery of marketable resources from the waste stream;
- Ensure compliance with State and local solid waste regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

9.2.2 State Legislation, Regulations, and Guidelines for C&D Wastes and Building Materials

Construction, demolition and land clearing wastes are a solid waste resulting from the construction, renovation, and demolition of buildings, roads and other man-made structures. WAC 173-350-400 allows many types of construction and demolition wastes to be disposed in limited purpose landfills. In addition, State law prohibits the open or unregulated burning of "treated wood, metal and construction debris"

Ecology released an updated waste and toxics reduction plan in June 2015. Moving Washington Beyond Waste and Toxics focuses on reducing construction and demolition waste through design and recycling. Moving Washington Beyond Waste and Toxics Plan provides the following goals pertaining to construction and demolition waste:

- Waste generation will be reduced throughout the system by both businesses and residents (GOAL SWM 4)
    - Advance building salvage and building material reuse to reduce construction and demolition waste by promoting design for deconstruction principles, sharing model contract language that requires salvage, and other related efforts.

The State legislature passed the "Sham Recycling Bill" in 2005, requiring transporters of recyclable materials to register with Washington, and requiring certain recycling facilities to notify the state before commencing operation. A new state rule, the Recyclable Materials Transporter and Facility Requirements (Chapter 173-345 WAC), was developed in response to this legislation. Although originally directed at C&D recycling issues, the new rule covers all types of recyclable materials (all materials that are designated as recyclable in this Plan). The new rule prohibits delivery of recyclable materials to transfer stations and landfills. The rule does not apply to several entities, including self-haulers, cities and city contractors, and charities.

9.3 EXISTING PROGRAM ELEMENTS

9.3.1 C&D Programs

C&D wastes are generated by construction companies, homeowners and others. Large amounts of C&D wastes generated by construction companies and contractors are more likely to be collected separately from normal garbage and brought to special disposal sites. Homeowners are more likely to bring small, mixed loads containing both C&D wastes and garbage to County disposal facilities.

A few opportunities exist in Yakima County for recycling or reusing C&D wastes:

- Metals can be brought to one of the metal recycling businesses and Yakima County disposal facilities.
- Clean wood waste can be brought to separate collection areas at Yakima County disposal facilities.
- Household hazardous wastes related to C&D (oil-based paints, solvents, etc.) can be brought to the MRW facility at THLF. Depending on the material and condition, some of the hazardous wastes may be reused or recycled.
- The Habitat for Humanity ReStore Shop and other non-profits accept reusable construction materials.
- Excess but usable construction materials are passed along for reuse through informal networks.

The ReStore is a division of Yakima Valley Partners/Habitat for Humanity. The ReStore acts as a fund-raising activity for the Habitat for Humanity by reselling new and used building materials that are donated to them. The ReStore handles a variety of materials,

including doors, windows, hardware, cabinets, plumbing and electrical fixtures, lumber, and paint. The ReStore accepts building materials under an "80/20 Rule", whereby at least 80% of a donation must be recyclable or in a condition that can be resold, otherwise it is not accepted. Yakima Waste Systems collects material that cannot be resold or recycled on a weekly basis.

The Central Washington Built Green Association promotes green building to both their members and the general public. The web page for the Central Washington Built Green Association (www.builtgreencentral.org) provides information and online tools (such as checklists and buyers guides for homeowners and participation forms for members).

9.3.2 Wood Waste

According to the 2015 Waste Characterization Study, clean wood and treated, painted, or contaminated wood makes up more than three quarters of C&D waste received at Yakima County facilities. Treated, painted, or contaminated wood makes up approximately 7.6% of Yakima County's waste stream. Clean wood handling is discussed in Section 5.3 of Chapter 5 – Organics.

9.3.3 Processing Facilities

There are no operational C&D processing facilities in Yakima County at this time, although the ReStore does a small amount of sorting at its facility.

A facility "Drywall Recycling Services MRF" in Sunnyside is permitted by Yakima Health District as a material recovery facility. Under the permit conditions, the facility must take steps for approval and then the facility is required to do a "pre-opening" inspection before any waste is moved through the facility. To date, the facility has not taken any of the required steps aside from renewing their permit.

9.3.4 Disposal

Most of the area's C&D wastes are brought to one of two limited purpose landfills (Anderson Landfill or Caton Limited Purpose Landfill). These landfills currently charge $6 to $8 per cubic yard of waste. There was also a third limited purpose landfill (Asphalt and Gravel Products, located in the Lower Valley area), but this landfill closed in 2008. Another facility in the Lower Valley area, Alba Excavating in Grandview, is open to the public and accepts small amounts of concrete and asphalt for $6 to $10 per cubic yard depending on material. There is also a limited purpose landfill operated by the Yakima Training Center, but this is for military use only. The tonnages handled by these facilities in 2015 are shown in Table 9.1.

Table 9.1 C&D Disposal Facilities, 2015 Tons

Facility	Yakima County C&D Debris Disposed, 2015 Tons[1]	Non-Yakima County C&D Debris Disposed, 2015 Tons	Total C&D Debris Disposed, 2015 Tons[2]	Wood Waste Disposed, 2015 Tons	Status
Anderson Landfill, Yakima	113,202[3]	180,861[3]	287,140	6,923	Open to the public
Caton Limited Purpose Landfill, Naches	3,584	30,924	34,508	4,282	Open to the public
Yakima Training Center, Yakima	0	0	0	63[4]	Operated by the military, not open to the public
Total	**116,786 tons**	**211,785 tons**	**321,648 tons**	**11,268 tons**	

Source: Data from Ecology Annual Survey
1. For Anderson Landfill, Yakima County C&D Debris Disposed is calculated by subtracting Non-Yakima County C&D Disposed from Total C&D Disposed plus Wood Waste Disposed (see Note 3). For Caton Limited Purpose Landfill, Yakima County C&D Debris Disposed is calculated by subtracting Non-Yakima County C&D Disposed from Total C&D Disposed.
2. Total C&D Debris Disposed does not include Wood Waste.
3. For Anderson Landfill, Non-Yakima County C&D Debris Disposed was reported as both C&D and Wood Waste. Therefore the Yakima County C&D Debris Disposed also includes Wood Waste.
4. Yakima Training Center only disposed of Wood Waste in 2015 but can accept C&D Debris.

9.4 STATUS OF 2010 RECOMMENDATIONS

The status of the recommendations made by the 2010 Plan for C&D wastes is shown in Table 9.2.

Table 9.2 Status of 2010 Recommendations for C&D Wastes

Item	Recommendations	Status
C&D1	Promote green building where possible.	Ongoing
C&D2	Develop and maintain a “Green House” to demonstrate green building techniques and products.	Complete
C&D3	Encourage proper reuse, recycling and/or disposal of C&D.	Ongoing

9.5 PLANNING ISSUES

Recycling and reuse alternatives cannot easily compete with the inexpensive disposal options provided by local landfills (both limited purpose landfills and Yakima County facilities).

9.6 ALTERNATIVE STRATEGIES

9.6.1 Alternatives

Potential alternatives for C&D waste include increased recycling and reuse, new disposal options, and other alternatives.

Alternative A – Recycling of Mixed C&D Wastes

There are currently few opportunities in Yakima County for C&D recycling, although specific types of C&D materials (such as clean wood, cardboard, metals, and reusable building materials) can be diverted to various recovery operations. In general, reuse and recycling options for C&D wastes could include:

Salvage for onsite and off-site reuse: This option generally applies to demolition projects, although a small amount of reusable materials and products are also generated at construction sites. To be effective, salvaging requires pre-demolition removal of reusable materials and hence requires some additional time and steps in a project's schedule. Off-site reuse can be accomplished through a variety of means, including reuse stores and private efforts.

Onsite crushing and grinding for reuse and recycling: This generally applies to concrete and asphalt, which can be crushed to serve as road base or replace other basic materials, although in some cases wood and other materials can also be handled onsite.

Source-separation for off-site processing: Source separation at construction and demolition sites can allow recycling of wood, cardboard and other materials.

Mixed C&D processing off-site: This option would require a significant investment in one or more facilities that are properly equipped and operated to process and market C&D waste.

Central site for recycling and reuse: An ideal option could be a facility, or a series of local facilities, that combine reuse and recycling as appropriate for the material. These facilities could sell salvaged products (such as doors, windows, and cabinets), as well as crush or grind other materials (such as concrete and wood) for use as aggregate or hog fuel.

Collection depots at transfer and disposal facilities: Collection containers for reusable and/or recyclable C&D materials at solid waste facilities could allow these materials to be transferred to a central processing or salvage facility. Transportation costs can be a significant barrier, however, since the recovered materials typically have only a low monetary value.

Several of the above options are already occurring and could be simply promoted more and/or expanded.

Alternative B – Promote Recycling through Habitat for Humanity ReStore

Yakima County Public Services Solid Waste Division could partner with the Habitat for Humanity Restore to salvage and divert recyclable materials received at Yakima County facilities. Materials that could be recycled and resold through the Habitat for Humanity ReStore could be set aside for pickup or customers with more than 80% recyclable material could be redirected to the Habitat for Humanity restore.

Alternative C – Promote Proper Disposal of C&D Wastes

Promotion of proper disposal of C&D wastes, including disposal at private sites, could help reduce illegal dumping of these materials. The private sites offer a reasonable cost per cubic yard, making them a desirable disposal option for remodelers and businesses to use. Although they are privately run, it could be advantageous for Yakima County to

advertise the use of these sites through posters, mailers, inserts, phone messages or booths at fairs.

Alternative D – Increased Education about Dangerous Elements of C&D Wastes

Contractors and homeowners could benefit from more information about the potentially hazardous materials that can be uncovered during demolition activities. Information could include proper handling and disposal, as well as the potential health impacts. Disposers of C&D waste can most easily identify potential hazards if they separate their demolished waste. Others can learn about the hazards they are exposing themselves to with Yakima County-provided brochures. Contractors and homeowners could be given a brochure when they apply for a permit.

Additional information on potential hazards and proper handling could be displayed in the permitting area of Yakima County and signatory cities.

9.6.2 Evaluation of Alternative Strategies

Consistency with Planning Objectives

The above alternative strategies support the objectives of convenient and reliable services for managing solid waste materials as well as promoting the use of economical waste handling methods.

Waste Reduction / Diversion Potential

Alternative A, recycling of mixed C&D waste, would provide immediate diversion.

Customer Preferences

Waste generators prefer the least expensive option for C&D wastes. They will typically choose to dispose of C&D at approved sites when provided with adequate information about their options.

Implementation Costs

Alternatives B, C, and D are lowest cost alternatives. Alternative A is the most expensive option.

9.6.3 Rating of Alternatives

The alternatives are compared with respect to the evaluation criteria in Table 9.3.

Table 9.3 Summary Rating of the Alternative C&D and Green Building Strategies

Alternative		Consistency with Planning Objectives	Waste Reduction/ Diversion Potential	Customer Preferences	Cost to Implement	Overall Rating
A	Recycling of Mixed C&D Waste	H	H	M	H	M
B	Promote Habitat for Humanity ReStore	H	M	M	L	H
C	Promote Proper Disposal of C&D Wastes	H	M	M	L	M
D	Increased Education about Dangerous Element of C&D Waste	H	M	H	L	M

H - High M - Medium L – Low

9.7 RECOMMENDED ACTIONS

The following recommendations are being made for C&D programs:

C&D1) Promote proper reuse, recycling and disposal of C&D.

C&D2) Partner with private organizations such as the Habitat for Humanity ReStore to promote recycling and reuse of C&D wastes and building materials.

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Chapter 10 SPECIAL WASTES

10.1 INTRODUCTION

This chapter discusses existing programs, identifies relevant planning issues, and develops and evaluates alternative strategies for the management of special wastes.

10.2 BACKGROUND

Special wastes have some similarities to "normal" MSW and can be managed in a similar fashion with some additional precautions or special handling procedures. Each type of special waste is governed by slightly different regulations, based on its physical and chemical characteristics and the degree of environmental, health, or safety risk it poses. Yakima County has established a Solid Waste Policies & Procedures document (updated September 2010) to address the acceptance of special wastes for disposal at County-owned waste facilities. This Chapter is subdivided into the sections shown in the below table to describe regulations, current programs, and planning issues for each type of special waste.

Table 10.1 Special Wastes

Section	Special Waste
10.3	Agricultural waste
10.4	Animal carcasses
10.5	Appliances
10.6	Asbestos
10.7	Biomedical/infectious waste
10.8	Electronic waste
10.9	Junk vehicles
10.10	Petroleum contaminated soils
10.11	Pharmaceuticals
10.12	Street sweepings/vactor waste
10.13	Tires
10.14	Miscellaneous

10.2.1 Goals and Objectives for Special Wastes

The objectives of this Plan related to special wastes include:

- Ensure convenient and reliable services for managing solid waste materials;
- Promote the use of innovative and economical waste handling methods;
- Reduce environmental impacts to air, water, and land that are associated with waste

generation, transportation, handling, recycling, and disposal;

- Reduce the occurrence and environmental impacts associated with illegal dumping;
- Ensure compliance with state and local solid waste and MRW regulations.

10.3 AGRICULTURAL WASTE

10.3.1 Regulations and Guidelines

WAC 173-350-100 defines agricultural wastes as, “wastes on farms resulting from the raising or growing of plants and animals including, but not limited to, crop residue, manure from herbivores and nonherbivores, animal bedding, and carcasses of dead animals.” WAC 173-350-230 addresses land application, the beneficial use of solid waste applied to land for its agronomic value or soil-amending capability.

10.3.2 Current Practice

As defined above, little of the agricultural waste generated is disposed of within Yakima County’s Solid Waste Division’s programs. Hence, agricultural wastes are not under the purview of this Plan. Agricultural wastes, whether crop residues or animal manures, can be returned to the land where these were generated.

Exceptions to this are the disposal of animal carcasses which is addressed below in Section 10.4. Empty pesticide and herbicide containers disposed of in the landfill following triple rinsing. The loads containing these are certified at the scalehouse.

10.3.3 Planning Issues

Current agricultural waste management and disposal practices are generally adequate.

10.4 ANIMAL CARCASSES

This section addresses disposal of animal carcasses within Yakima County.

10.4.1 Regulations and Guidelines

Animal carcass disposal requirements generally differ according to cause of death, as follows:

1. Animals that die of natural causes (but not an infectious disease) can be buried on site (typically on a farm) in accordance with state and local regulations, taken to a rendering facility, or taken to THLF or CLF.
2. Animals killed by collision with motor vehicles (“road kill”) can be landfilled.
3. The carcasses of animals that die from an infectious disease must be treated to destroy the disease-causing agent to prevent it from infecting other animals or humans. This involves coordination with the Yakima Health District.

10.4.2 Current Practice

Yakima County's Policy and Procedures for disposal of animals can be summarized as follows:

- Animal carcasses are accepted at THLF and CLF. The LVTS accepts small animals, such as cats, dogs and goats, but the THTS and CTS currently do not accept animals.
- Yakima County facilities do not accept diseased animals or animals preserved in formaldehyde.
- Animal parts must be double-bagged.
- Customers disposing of more than five animals must complete a load certification and will be reported to the Yakima Health District.
- Customers are charged the same rate as for garbage disposal, as well as a special handling fee if carcasses need to be buried immediately.
- Customers wishing to dispose of infectious and/or diseased animals are directed to the Roosevelt Regional Landfill in Roosevelt, Washington.

10.4.3 Planning Issues

Because they can potentially infect humans, two of the most important animal diseases are Bovine Spongiform Encephalopathy (BSE) and avian flu.

BSE-infected cattle cannot be buried in an unlined landfill such as THLF or CLF because prions are not destroyed when the waste decomposes, they could eventually migrate to sources of drinking water. In addition, BSE-infected cattle cannot be disposed in a landfill whose leachate goes to a sewage treatment plant, because chlorination also does not deactivate prions. Incineration is an accepted method of BSE-cow disposal. Roosevelt Regional Landfill can accept BSE-infected cattle.

Avian flu is caused by bird influenza viruses. Since 1997, avian influenza H5N1 has infected and killed humans who had close contact with infected poultry. There is concern that the H5N1 virus could mutate and eventually acquire the ability to spread easily from one person to another, without birds as the carrier. Onsite composting has been proven to be an effective mass disposal method for dead poultry, as the avian influenza virus is deactivated after 10 days of composting at 60^{o} C (140^{o} F). Single birds are also accepted as municipal solid waste if they are double bagged. In larger quantities, the birds are required to be disposed at Roosevelt Regional Landfill.

10.5 APPLIANCES

This section addresses disposal of appliances generated within Yakima County.

10.5.1 Regulations and Guidelines

Major appliances, also known as white goods, are considered to be a special waste because their size makes it difficult to handle them in the "normal" garbage collection

system, and because some types of appliances contain chlorofluorocarbons (CFCs, or "Freon") that must be removed prior to disposal. On the federal level, the Clean Air Act prohibits the release of CFCs, and State law (RCW 70.94, the Washington Clean Air Act) also requires that CFCs be handled in a manner that prevents their release into the atmosphere. Furthermore, CFCs and hydrochlorofluorocarbons are designated as dangerous wastes under Chapter 173-303 WAC, although they are exempt from these rules if recycled properly.

10.5.2 Current Practice

White goods are composed mainly of steel, copper, plastic, and rubber, but are typically recycled as ferrous scrap metal. As a service to customers, some appliance dealers recycle the old appliance when a new one is delivered. Yakima Waste Systems, Basin Disposal, and the City of Yakima also pick up white goods and other bulky items through "call to haul" programs. White goods are accepted for a fee at Yakima County-owned solid waste facilities and Yakima Waste Systems' Granger transfer station. At its facilities, Yakima County staff removes the "Freon" refrigerants from refrigerators, freezers, air conditioners, and similar devices. Industrial-sized appliances must have Freon and oil removed prior to delivery at one of the disposal sites.

Yakima County contracts with Pacific Steel & Recycling to haul and recycle the white goods.

10.5.3 Planning Issues

Current appliance/white goods management and disposal practices are generally adequate.

10.6 ASBESTOS

This section addresses asbestos disposal within Yakima County.

10.6.1 Regulations and Guidelines

Asbestos is a naturally occurring crystalline material that breaks down into very small particles that float easily in air, and once inhaled these particles can become lodged in a person's lungs and cause cancer. Several federal laws address asbestos removal and disposal, including the Toxic Substances Control Act, the Occupational Safety and Health Act, the Clean Air Act, and the Clean Water Act. There are also several state laws that address asbestos through worker training and protection requirements as well as disposal rules under the Dangerous Waste Regulations (Chapter 173-303 WAC).

10.6.2 Current Practice

Asbestos waste is currently accepted only at THLF and requires 24 hours' advance notice for disposal. Asbestos disposal is between the hours of 9 a.m. and 4 p.m., Tuesday through Friday. Asbestos waste material must be adequately wet, sealed into a leak-tight container or double bagged in six millimeter minimum polyethylene, and properly labeled. After placed, the asbestos containing waste material is covered with six inches of compacted non-asbestos waste material within 24 hours.

10.6.3 Planning Issues

Current asbestos waste management and disposal practices are generally adequate.

10.7 BIOMEDICAL/INFECTIOUS WASTE

This section addresses disposal of biomedical waste generated within Yakima County.

10.7.1 Regulations and Guidelines

Washington State's definition of biomedical waste (RCW 70.95K.010) includes the following waste types:

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

Biosafety level 4 disease waste: contaminated with blood, excretions, exudates, or secretions from humans or animals who are isolated to protect others from highly communicable infectious diseases that are identified as pathogenic organisms assigned to biosafety level 4 by the Center for Disease Control.

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

Human blood and blood products: discarded waste human blood and blood components, and materials containing free flowing blood and blood products.

Pathological waste: human source biopsy materials, tissues, and anatomical parts that emanate from surgery, obstetrical procedures and autopsy. Does not include teeth, human corpses, remains and anatomical parts that are intended for interment or cremation.

Sharps waste: all hypodermic needles, syringes and intravenous tubing with needles attached, scalpel blades, and lancets that have been removed from the original sterile package.

The WUTC regulates transporters of biomedical wastes. Its regulations also allow regular solid waste haulers to refuse to haul wastes that they observe to contain infectious wastes as defined by the WUTC.

10.7.2 Current Practice

Stericycle, Inc., collects biomedical/infectious wastes in Yakima County. Due to privacy considerations, Stericycle does not provide detailed information about where these wastes are generated. THLF and CLF also currently accept red bag medical waste and sharps. Medical waste must be pre-approved prior to acceptance, and medical waste must be double or triple bagged and transported to the landfill by a commercial hauler

licensed to handle medical waste. Businesses are also permitted to haul their own waste to the landfills. Sharps must be placed in either a sharps container or in a plastic soda pop or milk jug with a lid and properly labeled.

10.7.3 Planning Issues

The list of potential generators of biomedical waste includes medical and dental practices, hospitals and clinics, veterinary clinics, farms and ranches, as well as individual residences. Some of these may not always dispose of biomedical wastes properly. There is no definitive estimate of the quantity of syringes and other biomedical wastes that are improperly disposed locally, but haulers in other areas often report seeing syringes sticking out of garbage bags. This problem is expected to increase due to an aging population and additional medications that have recently become available for home use (for human immunodeficiency virus, arthritis, osteoporosis, and psoriasis).

10.8 ELECTRONIC WASTE

This section addresses disposal of electronic and electronic equipment waste, commonly referred to as “e-waste,” generated within Yakima County.

10.8.1 Regulations and Guidelines

Electronic products contain heavy metals and other chemicals at hazardous levels that make them difficult to dispose of safely. The Electronic Product Recycling law (Chapter 70.95N RCW) requires manufacturers of computers, monitors, laptops and portable computers to provide recycling services throughout the state at no cost to households, small businesses, small local governments, charities and school districts. This law led to the E-Cycle Washington program developed by Ecology. Names and locations of collection sites can be obtained by calling 1-800-RECYCLE or going to www.ecyclewashington.org.

10.8.2 Current Practice

The E-Cycle Washington program allows for the collection and recycling of televisions, desktop computers, laptop computers, tablet computers, e-readers, portable video disc players, and computer monitors. However, peripherals such as keyboards, mice, and printers are not covered by the program. Over 330 collection sites (statewide) have been established since January 2009, providing 90 percent of Washington residents access to a recycling location within 10 miles of their home. In the first five years of its existence, E-Cycle Washington has collected more than 200 million pounds of discarded electronics.

Yakima County includes information regarding E-Cycle Washington online (see www.yakimacounty.us/658/Electronics-Cell-Phone-Recycling).

Yakima County-owned solid waste disposal sites accept up to five electronic units not accepted by the E-Cycle Washington program from households for disposal. Electronic wastes from businesses are not accepted due to State regulations prohibiting disposal in landfills.

10.8.3 Planning Issues

Based on the E-Cycle statistics, the statewide program is working well and Yakima County practices are generally adequate to handle additional electronic waste not covered by the program.

10.9 JUNK VEHICLES

This section addresses disposal of vehicles within Yakima County.

10.9.1 Regulations and Guidelines

RCW 70.93.060 prohibits the abandonment of junk vehicles upon any property located in an unincorporated area of a county. Abandoned vehicles are also regulated under RCW 46.55, which establishes rules for removal and disposal of junk vehicles. If a junk vehicle is abandoned in violation of RCW 70.93.060, RCW 46.55.230 governs the vehicle's removal, disposal, and sale, and penalties that may be imposed against the registered owner of the vehicle.

10.9.2 Current Practice

Several recycling facilities in Yakima County provide collection and processing services for auto bodies. After fluids are removed, the auto bodies are crushed and transported out of Yakima County for recycling as ferrous scrap metal.

10.9.3 Planning Issues

Current junk vehicle waste management and disposal practices are generally adequate.

10.10 PETROLEUM CONTAMINATED SOILS

This section addresses disposal of petroleum contaminated soils (PCS) within Yakima County.

10.10.1 Regulations and Guidelines

PCS can contain fuel oil, gasoline, diesel, or other volatile hydrocarbons in concentrations below dangerous waste levels, but greater than cleanup levels established by Ecology. Small amounts of PCS may be disposed of as a solid waste in an approved landfill. Depending on the contamination levels, large amounts may need to be treated by a process that removes or destroys the contamination. Treatment processes include aeration, bioremediation, thermal stripping, and incineration.

10.10.2 Current Practice

Anderson Rock and Demolition Pits, a private company, is permitted by the Yakima Health District to receive and treat PCS. PCS is only accepted at Yakima County disposal facilities with prior approval from the Solid Waste Manager. This may include testing of the PCS before acceptance.

10.10.3 Planning Issues

Current management and disposal practices are generally adequate to handle the volume of PCS generated within Yakima County.

10.11 PHARMACEUTICALS

This section addresses disposal of pharmaceuticals within Yakima County.

10.11.1 Regulations and Guidelines

Generally, two types of pharmaceuticals are of interest to Yakima County waste management: 1) controlled substances (prescription drugs and illegal drugs) and 2) over-the-counter, non-prescription substances (e.g., aspirin, vitamins, other health supplements, cold medicines, etc.). Controlled substances are covered by their own regulations, which do not address disposal other than to prevent their reuse. Over-the-counter substances are not specifically addressed by solid waste regulations.

10.11.2 Current Practice

Law enforcement officials occasionally need to dispose of quantities of controlled substances and illegal drugs. This is typically accomplished at landfills under conditions of increased security and secrecy at THLF and CLF.

Disposal of unused or outdated prescription and non-prescription substances occurs in an informal and inconsistent fashion. Historically, people have been told to flush unwanted prescription drugs and other medicines down the toilet. However, some of these compounds are only partially broken down (if at all) in wastewater treatment plants, and eventually show up as contaminants in ground and surface waters. Therefore, Washington State has established temporary drop-off locations while it develops a statewide take-back program. A list of temporary drop-off locations is available online (see www.takebackyourmeds.org).

If a collection program for unwanted medicines is not conveniently available to residents, people are currently being encouraged to dispose of these in their trash as solid waste after mixing the medicines with an undesirable substance, such as used cat litter or coffee grounds, and putting the mixture into a container with a lid.

If available, Yakima County encourages giving pharmaceutical waste to community drug take-back programs to provide proper disposal rather than mixing with trash.

10.11.3 Planning Issues

Currently, the EPA lists pharmaceuticals and personal care products as “contaminants of emerging concern.” For household pharmaceuticals, the EPA’s interim recommendation is to not flush medications to the sewer or septic tank. Rather, the EPA recommends that residents double bag medications and place them directly into exterior garbage cans to avoid children or pets accessing them.

Take Back Your Meds is a group of over 270 organizations in Washington State who support creation of a statewide program for the safe return and disposal of unwanted

medicines. Resources for this can be found at www.takebackyourmeds.org.

Current pharmaceutical waste management and disposal practices are generally adequate.

10.12 STREET SWEEPINGS/VACTOR WASTE

This section addresses disposal of wastes generated from maintaining paved areas within Yakima County.

10.12.1 Regulations and Guidelines

Street sweepings and vactor wastes may be contaminated with a variety of materials, depending on the locale, unauthorized or accidental discharges, and frequency of cleaning. Both street sweepings and vactor waste may contain small amounts of petroleum hydrocarbons from motor oil that leaks from vehicles traveling on public streets. Currently, vactor wastes can be classified as clean fill, solid waste, or dangerous wastes, depending upon the level of contamination.

10.12.2 Current Practice

Street sweepings consist of sand, gravel, rocks, leaves, and smaller amounts of litter (paper, plastic, metal and glass) that accumulate on streets and roads and are collected by street sweeping vehicles. Street sweepings are currently stockpiled by the municipalities and then disposed of as solid waste at THLF or Anderson Landfill.

Vactor waste is the solid material that accumulates in catch basins (storm drains) that collect stormwater from streets, parking lots, and other paved areas. Based on a 1993 study by Ecology called *Contaminants in Vactor Truck Wastes*, vactor waste has a low probability of designating as dangerous waste. Vactor waste is collected by vacuum suction (vactor) trucks and is similar to street sweeping except that it is generally wet. Vactor waste is typically stockpiled along with street sweepings and then disposed of as solid waste at THLF. Vactor waste within the City of Yakima is typically handled at the City of Yakima Wastewater Treatment Plant. Vactor waste goes to the Wastewater Treatment Plant drying bed and is then tested for contaminants such as Total petroleum hydrocarbons and metals. If possible, the vactor waste is recycled for use as clean fill.

10.12.3 Planning Issues

Current waste management and disposal practices for street sweepings and vactor waste are generally adequate.

10.13 TIRES

This section addresses tire disposal within Yakima County.

10.13.1 Regulations and Guidelines

WAC 173-350-100 defines waste tires as any tires that are no longer suitable for their original intended purpose because of wear, damage or defect. WAC 173-350-350

imposes restrictions on outdoor piles of more than 800 tires.

10.13.2 Current Practice

Many tire shops and auto repair shops recycle the tires they replace (typically for a fee). Waste tires are also accepted at Yakima County-owned solid waste facilities for a fee. Yakima County currently contracts with L&S Tires, which hauls tires to its facility in Lakewood, Washington for processing. Tires are then processed into Tire Derived Fuel, crumb rubber, or treads and rings for bumper applications, traffic barricades, and farm silage.

10.13.3 Planning Issues

Recycling and disposal practices for tires replaced by an automotive retail or repair facility are generally adequate. The areas of primary concern are large tire stockpiles, loads of tires that are illegally dumped on public or private property, and small quantities of tires stored by residents and businesses for disposal at some indeterminate future date.

10.14 MISCELLANEOUS

In addition to the items described in sections above, the Solid Waste Policies & Procedures document also addresses the following miscellaneous items:

- Barrels
- Confidential material
- Creosote treated material
- Drums
- Electrical transformers
- Fluorescent tubes – Note that the LightRecycle Washington program began on January 1, 2015 for the collection and recycling of mercury-containing lights sold at retail. The program's website (www.LightRecycle.org) lists specific drop off collection sites in the county where residents and businesses are able to recycle up to 10 mercury-containing lights per day free of charge.
- Liquid wastes, including septic tank and portable toilet waste
- Oil and grease from restaurants
- Pallets
- Underground storage tanks
- Vehicles and major vehicle components; camp trailers, campers, boats, motorcycles, snowmobiles, utility trailers, pickups; mobile homes

Yakima County's Solid Waste Policies & Procedures document requires the following wastes be handled as household hazardous waste/MRW:

- Paint (latex and oil-based)

- Pesticides and pesticide containers
- Propane containers and compressed gas cylinders
- Residential storage tanks
- Used motor oil

Some special wastes described in this Chapter are approved for acceptance on a case-by-case basis by the Solid Waste Manager. This promotes compliance with existing policies and procedures and knowledge of the waste received and disposed of at Yakima County facilities.

10.15 STATUS OF 2010 RECOMMENDATIONS

The current status of the recommendations made in the 2010 Solid Waste Management Plan is shown in Table 10.2.

Table 10.2 Status of 2010 Recommendations

Action	Recommendation	Status
SW1	Support development and adoption by the State of Washington of a product stewardship program for tires.	Ongoing
SW2	Support new product stewardship programs as appropriate.	Ongoing
SW3	Continue to address special wastes through a cooperative effort with the Yakima Health District and Ecology, and according to the established Solid Waste Policy & Procedures which should be updated as necessary to address new problems or special waste.	Ongoing – Solid Waste Policies & Procedures document will be updated following authorization of this Plan.

10.16 ALTERNATIVE STRATEGIES

Section 10.16 describes strategies to manage special wastes.

10.16.1 Alternatives

Collection programs may be required or desired in the future for materials that cannot be fully anticipated at this time. As these needs arise or are identified, options should be evaluated and feasible cost-effective solutions implemented as necessary. Possible steps that could be taken include the following:

- **Increased education**: additional education for generators who are the sources of the waste stream could be conducted to promote safe handling and disposal practices.
- **Cooperative response**: the current practice of cooperation between Yakima County, the Yakima Health District, and Ecology to address special waste issues as they arise should be continued.
- **Collection programs**: additional or new collection programs could be developed or existing ones expanded to include additional materials or sources.

- **Conduct a waste generator survey**: the Solid Waste Division or Yakima Health District could conduct waste generator surveys to gather more information about types and amounts of specific wastes, barriers to proper handling and disposal practices, and other factors. A survey may be a necessary first step to developing new programs.
- **Increase enforcement**: increased enforcement activities and larger penalties could be implemented.
- **Product stewardship**: new product stewardship programs could be considered or supported to address specific waste materials.

10.16.2 Evaluation of Alternative Strategies

For the most part, management practices for special wastes in Yakima County are adequate. A wait-and-see approach to the potential alternative strategies listed above seems reasonable at this time. Emerging regulations and guidance regarding pharmaceutical waste may require future action.

10.17 RECOMMENDED ACTIONS

The following recommendations are being made for special wastes:

SW1) Continue to dispose special wastes through a cooperative effort with the Yakima Health District and Ecology, and according to the established Solid Waste Policy & Procedures document.

SW2) Update the Solid Waste Policies & Procedures document as necessary to address new issues or special wastes.

SW3) Monitor EPA and Washington State guidance regarding pharmaceutical waste and implement changes as needed to comply with statewide medicine take-back program.

Chapter 11 DISASTER DEBRIS MANAGEMENT

11.1 INTRODUCTION

This chapter discusses programs for disaster debris management, identifies relevant planning issues, and develops and evaluates alternative strategies.

11.2 BACKGROUND

Natural and man-made disasters can result in a surge of unanticipated debris that can inhibit or obstruct emergency services and overwhelm normal Yakima County Public Services capabilities. It is critical to clear debris immediately after a disaster to allow emergency vehicles to respond to life-threatening situations. Once the debris is cleared from the right-of-way and vehicle access is achieved, the removal and disposal of debris are important for the community's recovery from a disaster.

Being prepared with a plan to address the increased quantity and potential types of disaster debris can help to protect the health and safety of the community. Successful implementation of that plan can positively affect speed and cost of recovery, and the ability to obtain financial assistance for the recovery efforts.

11.2.1 Goals and Objectives for Disaster Debris Management

The objectives of this Plan related to disaster debris management include:

- Ensure convenient and reliable services for managing solid waste and MRW materials;
- Promote the use of innovative and economical waste handling methods;
- Reduce environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping; and
- Ensure compliance with State and local solid waste and MRW regulations.

Because disaster debris can have characteristics that make it similar to both MSW and C&D debris, the management techniques used for these wastes are also applicable to disaster debris. A goal for this Plan is to provide guidance for developing a stand-alone disaster debris management plan.

11.2.2 Legislation, Regulations, and Guidelines for Disaster Debris Management

Numerous resources that provide guidance for the development of disaster debris management plans are available. The EPA in March 2008 developed *Planning for*

Natural Disaster Debris (EPA 2008) as a tool for local communities to create such a plan. Another guidance tool is the Federal Emergency Management Agency's (FEMA) *Public Assistance Program and Policy Guide, Appendix D: Debris Management Plan Job Aid* (FEMA 2016). Both of these documents are available online and provide guidance that could assist Yakima County in developing a disaster debris management plan (DDMP).

11.3 EXISTING PROGRAM ELEMENTS

The Yakima County Office of Emergency Management has a Comprehensive Emergency Management Program (CEMP) that addresses overall emergency response to disasters. The CEMP identifies the roles and responsibilities of governmental agencies including Yakima County Public Services, which is responsible for coordination of debris removal and for providing debris clearance.

A review of background information and the CEMP identified the following issues:

1. The CEMP does not specifically address the disposal of disaster debris but does note local public works agencies are responsible for providing debris clearance.
2. Following a disaster, it is crucial that the operation of Yakima County solid waste facilities be restored to normal. The ability to receive, process, and dispose of solid waste is critical to community recovery.
3. A plan to manage disaster debris in a manner that minimizes interference with operation of the municipal solid waste system has not yet been developed.
4. The existing solid waste system may need to be modified or augmented to handle the addition of large quantities of disaster debris.
5. Procedures for effective communication, debris tracking, cost control, and waste diversion or storage during a disaster have not yet been developed.
6. The recovery efforts following Hurricane Katrina indicate that the proper handling of household hazardous waste was an issue of concern.

In an emergency, timely response, saving lives, and minimizing property damage are the primary goals. Following the initial response, disaster debris management becomes important. A DDMP can be used to coordinate between emergency responders and Yakima County agencies that provide various services. Following the DDMP during and after an emergency is likely to allow for a speedier response and recovery and assist in reducing the financial impact. The DDMP is a supplement to the CEMP by elaborating on debris clearance and demolition activities. Following are issues the DDMP could address:

- Forecast of type and quantity of debris;
- Types of equipment required to manage debris;
- Description of critical local accessibility routes;
- Plan for public debris collection and removal and debris removal from private property;
- Plan for informing the public regarding debris handling;

- Health and safety requirements for emergency workers;
- List of environmental considerations and regulatory requirements;
- Temporary debris management sites and disposal locations, including any necessary permits or variances;
- Potential resources, such as contractors or Yakima County staff, and their responsibilities; and.
- Plan for monitoring debris removal and disposal operations.

Recently City of Yakima formed its own Emergency Management Office. A City of Yakima document similar to the CEMP is not yet available.

11.3.1 Disaster Debris (Flood, Fire, Earthquake)

From 1995 to 2016, seven federally declared disasters affected Yakima County (not including fire management assistance) according to FEMA's website.

- Storms, high winds, and floods in 1995.
- Severe storms and flooding 1996.
- Severe winter storm in 1997.
- Earthquake in 2001.
- Washington Severe Winter Storm, Landslides, Mudslides, and Flooding in January 2009.
- Severe Winter Storm and Record and Near Record Snow in March 2009 (Note that funds for this emergency were to cover Emergency Work rather than Permanent Work. The Emergency Work category indicates the work must be performed to reduce or eliminate an immediate threat to life, protect public health and safety, and to protect improved property that is significantly threatened due to disasters or emergencies rather than work which is required to restore damage to its pre-disaster design, function, and capacity.)
- Wildfires and Mudslides in 2015.

Yakima County is historically at risk primarily for storm, fire, flood and earthquake disasters. However, wind-borne ash from the 1980 volcanic eruption of Mt. St. Helens affected Yakima County. The following sections discuss the types of debris that could be generated by a disaster and the potential value of advance planning for such occurrences.

Table 11.1 summarizes the types of disasters most likely to occur in or near Yakima County and the types of debris likely to be generated. Evaluation of potential disasters and resultant debris can help prepare for disaster response and recovery.

Table 11.1 Potential Disasters and Resultant Debris

Debris	Biodisaster/ Epidemic	Earthquakes	High Winds / Tornadoes	Floods	Wildfires	Winter Storms	Volcanoes
C&D Material: concrete, asphalt, metals, wallboard, bricks, glass, wood		XX	XX	X	X	X	
Personal Property: white goods, e-waste, household hazardous waste, furniture, other personal belongings		XX	XX	X	X		
Vehicles and vessels		XX	X	X	X		
Vegetative Debris: trees, yard debris, woody debris			X	XX	X	XX	
Animal carcasses, bedding, manure, contaminated items	XX						
Displaced Sediments: sand, soil, rock, sediment		X		XX	X		X
Mixed other debris		X	X	X	X		X

X = smaller quantity XX = significant quantity

Planning for debris management enables Yakima County to consider and evaluate alternative debris management options before a natural disaster occurs. Adequate preparation will ensure that Yakima County's disaster debris management can be cost-effective and meet community concerns, which typically include:

- Public health and safety.
- Prioritizing response activities to target resources in an appropriate manner.
- Preserving property and the environment.
- Minimal impact or disruption of normal solid waste services.
- Cost.
- Compliance with regulations governing specific waste streams such as asbestos and hazardous waste.
- Availability of facilities permitted to accept specific waste streams.
- Ability to recycle portions of the waste stream.
- Eligibility for cost-recovery funds through FEMA or other government programs.

11.3.2 Bio-disaster Waste (Diseased Animals)

The first known case of BSE, commonly known as mad cow disease, in the United States was diagnosed in a Yakima County cow in December 2003. At the time, neither Yakima County nor the State had a written plan for handling, treatment, or disposal of

BSE-infected carcasses. Ecology and Yakima Health District officials quickly devised a method of disposal at Roosevelt Regional Landfill in Klickitat County. Roosevelt Regional Landfill was selected for disposal because its leachate recirculates back into the landfill cell and is evaporated rather than sent to a sewage treatment plant, thus preventing the spread of the BSE infectious particles known as prions, which are not deactivated by the normal sewage treatment process.

Yakima County has a large population of livestock. Public concerns about BSE, avian flu, West Nile virus and other potential animal-transmitted diseases can be appeased by having policies and plans for handling diseased animal carcasses and wastes. Animal carcass disposal is addressed further in Chapter 10 Special Wastes.

11.3.3 Radioactivity Release

Yakima County's proximity to the Hanford Nuclear Reservation exposes it to a potential release of radioactive materials. Since almost any material existing in Yakima County could conceivably become contaminated with radioactivity, the quantity and variety of materials that require disposal could be extensive. A Yakima County DDMP should consider methods for identifying, handling, stockpiling, and disposing of materials contaminated with radioactivity.

11.3.4 Funding Sources

To date, no sources of funding for developing a DDMP have been identified.

11.4 STATUS OF 2010 RECOMMENDATIONS

The status of the recommendations made by the 2010 Plan (Yakima County 2010) is shown in Table 11.2.

Table 11.2 Status of the 2010 Recommendations for Disaster Debris Management

Number	Recommendations	Status
DD1	Coordinate with the Office of Emergency Management to prepare for disaster debris response	Ongoing
DD2	Develop an internal plan for handling disaster debris, in coordination with the Office of Emergency Management.	Ongoing

11.5 ALTERNATIVE STRATEGIES

There are three potential alternatives for disaster debris management:

11.5.1 Alternative Strategies

Alternative A – No Action

This alternative requires no action. In the event of a disaster the CEMP would be used for guidance. Decisions would be made during a disaster concurrent with a determination of the extent of damage and possible options for addressing them.

Alternative B – Coordinate with Yakima County and City of Yakima

This alternative requires coordination with Yakima County Office of Emergency Management and City of Yakima Emergency Management Office. Greater detail regarding debris removal and disposal activities could provide better guidance for disaster debris management activities and preparedness along with describing critical lines of communication related to debris removal and disposal. This would facilitate a quicker response and reduce the number of decisions that need to be made during a disaster while the extent of damage and possible options for addressing them were being assessed. Any revisions to the CEMP would best be done on the normal schedule for updating this document, which is every four years. The next CEMP update is anticipated to be completed in 2018. A schedule for the City of Yakima's document is not yet known.

Alternative C – Develop a Disaster Debris Management Plan

This alternative would require Yakima County Public Services to develop a separate DDMP. In this case, both the CEMP and a DDMP together would be used for guidance in the event of a disaster. The DDMP could either be a separate plan or added as an appendix to the CEMP. The DDMP could provide the detail for critical lines of communication specific to debris management activities, identify disasters that would most likely impact the solid waste system, the type of debris that would be generated from each one, address the need for temporary staging areas including potential locations, contain forms and brochures that could be easily modified for use in such an event, and have identified reuse/recycle activities that would minimize disposal at landfills. The level of detail for this plan could range from simple plans consisting largely of checklists and an outline of procedures to more complex plans that would be reviewed and approved by FEMA.

Alternative D – Consider Reserving Airspace for Disaster Debris

This alternative would require Yakima County Public Services to maintain airspace in case of a disaster. This provides for disaster debris disposal closer to urban areas in Yakima County. If this alternative is not implemented, once Terrace Heights Landfill Phase 2 is full, predicted to be in 2030, all disaster debris would need to be hauled to Cheyne Landfill.

11.5.2 Evaluation of Alternatives

The alternatives are compared with respect to the following evaluation criteria. The criteria include consistency with planning objectives, waste reduction and diversion potential, customer's preferences, and implementation costs.

Consistency with Planning Objectives

Alternative A is not consistent with Yakima County's objectives, as it does not plan for convenient and reliable services for managing solid waste and MRW materials during a disaster.

Alternative B is consistent with Yakima County's objectives, as it would identify locations for potential temporary storage facilities and processes for establishing and closing them, which would reduce potential environmental impacts due to a disaster.

Alternative C can address many of Yakima County's objectives such as:

- Ensure convenient and reliable services for managing solid waste and MRW materials. A DDMP would assist Yakima County in meeting customer's unique needs that would result from a disaster.
- Promote the use of innovative and economical waste handling methods. This alternative provides the opportunity to consider cost-effective alternatives for handling and managing disaster debris.
- Reduce environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling, and disposal. In establishing a plan Yakima County can better prepare to implement methods that will minimize environmental impacts particularly by identifying locations for potential temporary storage facilities and being prepared for establishing and closing them. This alternative would also identify waste diversion and recycling opportunities.
- Ensure compliance with state and local solid waste and MRW regulations. This alternative would address federal, state and local regulations to assist with compliance during a disaster.

Alternative D can address many of Yakima County's objectives such as:

- Ensure convenient and reliable services for managing solid waste and MRW materials. Since Terrace Heights Landfill is likely more accessible to a majority of the population in Yakima County than Cheyne Landfill this is a more convenient disposal location.
- Promote the use of innovative and economical waste handling methods and reduce environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling, and disposal. This alternative provides the opportunity to shorten the haul distance for disaster debris which is likely more cost-effective.
- Ensure compliance with state and local solid waste and MRW regulations. This alternative would address federal, state and local regulations to assist with compliance during a disaster by providing a permitted location for disposal.

Waste Reduction/Diversion Potential

Alternative A is likely not consistent with Yakima County's objectives as it does not emphasize waste reduction as a fundamental management strategy and would likely force decisions to be made under tight time constraints.

Alternative B could allow for Yakima County to explore waste reduction and diversion potentials, but opportunities may be limited.

Alternative C would allow for Yakima County to explore several waste reduction and diversion potentials for debris generated during a disaster. This alternative would likely allow for the most opportunity for waste reduction and diversion.

Customer Preference

There are no customer preferences for disaster debris anticipated.

Implementation Costs

Alternative A would have no implementation costs. Alternative B would require an investment in staff time and additional costs for modifying the CEMP. The cost would be minimal if this could be conducted as part of a scheduled update of the CEMP, but the expense could be larger if conducted as a separate effort.

Alternative C would require the expense of preparing a DDMP for the Yakima County Public Services. The cost of Alternative C would be the greatest, and would vary depending on the level of detail desired and whether staff time was dedicated to it or a consulting firm was hired to write the DDMP.

11.5.3 Rating of Alternatives

The three alternatives are compared with respect to the evaluation criteria in the table below. Based upon the comparison, Alternatives B and C are recommended for further development or implementation.

Table 11.3 Summary Rating of the Disaster Debris Management Strategies

Alternative		Consistency with Planning Objectives	Waste Reduction/ Diversion Potential	Cost to Implement	Overall Rating
A	No Action	L	L	L	L
B	Coordinate with Yakima County and City of Yakima Office of Emergency Management	H	M	M	M
C	Develop DDMP	H	H	H	M
D	Reserve Airspace for Disaster Debris	H	M	L	H

H – High M – Medium L – Low

11.6 RECOMMENDED ACTIONS

The following recommendations are made for disaster debris programs:

DD1) Coordinate with the Yakima County Office of Emergency Management and City of Yakima Emergency Management Office to prepare for disaster debris response with detailed plans for debris removal and disposal activities.

DD2) Develop an internal plan for handling disaster debris, in coordination with the Yakima County Office of Emergency Management and City of Yakima Emergency Management Office.

DD3) Consider reserving landfill airspace for disaster debris disposal.

Chapter 12 MODERATE RISK WASTE

12.1 INTRODUCTION

This chapter discusses programs for MRW, identifies relevant planning issues, and develops and evaluates alternative strategies.

12.2 BACKGROUND

Section 12.2 provides MRW definitions, regulations and guidance, and Yakima County objectives for managing MRW.

12.2.1 Goals and Objectives for Moderate Risk Waste

Goals and objectives related to MRW include:

- Ensure convenient and reliable services for managing solid waste and MRW materials;
- Promote the use of innovative and economical waste handling methods;
- Reduce environmental impacts to air, water, and land that are associated with waste generation, transportation, handling, recycling, and disposal;
- Ensure compliance with State and local solid waste and MRW regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

12.2.2 Definitions

MRW refers to materials that have the characteristics of and pose the same risks as hazardous wastes – they are flammable, corrosive, toxic, and/or reactive. State and Federal law do not regulate these wastes as hazardous wastes due to their relatively small quantities. MRW is regulated by WAC 173-350-360 under the authority Chapter 70.105 RCW and Chapter 70.95 RCW. MRW is defined as solid waste that is limited to conditionally exempt SQG waste and household hazardous waste (HHW).

Household Hazardous Waste

The Hazardous Household Substances List developed by Ecology is shown in Table 12.1. When generated in a residence, these products become HHW when discarded.

Small Quantity Generator Waste

Many businesses and institutions produce small quantities of hazardous wastes; the list is the same as for HHW (see Table 12.1). SQGs produce hazardous waste at rates less than 220 pounds per month or per batch (or 2.2 pounds per month or per batch of extremely hazardous waste) and accumulate less than 2,200 pounds of hazardous waste

onsite (or 22 pounds of extremely hazardous waste). Extremely hazardous wastes include certain pesticides and other poisons that are more toxic and pose greater risks than other HHW. SQGs are conditionally exempt from State and Federal regulation, meaning they are exempt only as long as they properly manage and dispose of their wastes.

Table 12.1 Hazardous Household Substances List

Substance or Class of Substance	Flammable	Toxic	Corrosive	Reactive
Group 1: Repair and Remodeling				
Adhesives, Glues Cements	x	x		
Roof Coatings, Sealants		x		
Caulking and Sealants		x		
Epoxy Resins	x	x		x
Solvent Based Paints	x	x		
Solvents and Thinners	x	x	x	x
Paint Removers and Strippers		x	x	
Group 2: Cleaning Agents				
Oven Cleaners		x	x	
Degreasers and Spot Removers	x	x	x	
Toilet, Drain and Septic Cleaners		x	x	
Polishes, Waxes and Strippers	x	x	x	
Deck, Patio, and Chimney Cleaners	x	x	x	
Solvent Cleaning Fluid	x	x	x	x
Household Bleach (>8% solution)			x	
Group 3: Pesticides				
Insecticides	x	x		
Fungicides		x		
Rodenticides		x		
Molluscides		x		
Wood Preservatives		x		
Moss Retardants		x	x	
Herbicides		x		
Fertilizers		x	x	x
Group 4: Auto, Boat, and Equipment Maintenance				
Batteries		x	x	x
Waxes and Cleaners	x	x	x	
Paints, Solvents, and Cleaners	x	x	x	x
Additives	x	x	x	x
Gasoline	x	x	x	x
Flushes	x	x	x	x
Auto Repair Materials	x	x		
Motor Oil		x		
Diesel Oil	x	x		
Antifreeze		x		

Table 12.1 Hazardous Household Substances List

Substance or Class of Substance	Flammable	Toxic	Corrosive	Reactive
Group 5: Hobby and Recreation				
Paints, Thinners, and Solvents	x	x	x	x
Chemicals (including Photo and Pool)	x	x	x	x
Glues and Cements	x	x	x	
Inks and Dyes	x	x		
Glazes		x		
Chemistry Sets	x	x	x	x
Pressurized Bottled Gas	x	x		x
White Gas	x	x		x
Charcoal Lighter Fluid	x	x		
Batteries		x	x	x
Group 6: Persistent Bioaccumulative Toxins				
Mercury-Containing Products		x	x	
Lead-Containing Products		x		
E-Waste		x		
Polycyclic Aromatic Hydrocarbons		x		
Polychlorinated Biphenyl		x		
Group 7: Miscellaneous				
Ammunition	x	x	x	x
Asbestos		x		
Fireworks	x	x	x	x
Marine Aerial Flares	x	x		
Pharmaceuticals		x		
Non-Controlled Substances		x		
Sharps		x		
Personal Care Products	x	x	x	

Source: Guidelines for Developing and Updating Local Hazardous Waste Plans - Appendix F, Ecology, 2010. https://fortress.wa.gov/ecy/publications/documents/1007006.pdf

12.2.3 Regulations and Guidance

MRW is regulated primarily by State and Federal laws that govern proper handling and disposal of these wastes. A review of the recent regulatory changes affecting solid wastes and MRW is provided in Chapter 1, and the relevant details are reproduced below.

Moving Washington Beyond Waste and Toxics Plan

Ecology released a waste and toxics reduction plan in June 2015. Moving Washington Beyond Waste and Toxics focuses on reducing waste and toxics by adopting a sustainable materials management approach which is also used by EPA. This approach looks at the full life cycle of materials from the design and manufacturing, through use, to disposal or recycling. The EPA believes a sustainable materials management approach can help identify more sustainable ways to produce products that are less impactful to

the environment. Moving Washington Beyond Waste and Toxics' vision is as follows: "*We can 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.*"

One of the five sections of Moving Washington Beyond Waste and Toxics Plan is "Managing Hazardous Waste and Materials." The background information for this initiative explains that perhaps as little as 1% of SQG waste is properly managed on a statewide basis. For HHW, only about 16% (statewide) is estimated to be collected through local programs. Moving Washington Beyond Waste and Toxics Plan provides the following goals pertaining to MRW:

1. Until toxic substances are phased out of products, and use of hazardous materials declines, MRW collection will be maximized (GOAL HWM 11).
2. MRW locations and programs will provide increased services for residents, businesses, and underserved communities (GOAL HWM 12).
3. Facilities that collect MRW will be properly permitted (if required) and in compliance with applicable laws and rules (GOAL HWM 13).

Hazardous Waste Management Act (Chapter 70.105 RCW)

The Hazardous Waste Management Act establishes requirements for State and local hazardous waste management plans, rules for hazardous waste generation and handling, criteria for siting hazardous waste management facilities, and local zoning designations that permit hazardous waste management facilities. The Hazardous Waste Management Act also establishes waste management priorities for hazardous wastes. In order of decreasing priority, the management priorities are:

- waste reduction,
- waste recycling,
- physical, chemical, and biological treatment,
- incineration,
- solidification/stabilization/treatment, or
- landfill.

The waste hierarchy is a key element in determining compliance of this Plan with State requirements.

Rules implementing the Hazardous Waste Management Act are codified in the Dangerous Waste Regulations (Chapter 173-303 WAC). This regulation defines dangerous waste materials and establishes minimum handling requirements. State rules specifically exclude HHW and SQG wastes from dangerous waste regulation. The Dangerous Waste Regulations have been amended several times over the years, most recently in 2014. The 2014 amendments allow mercury-containing equipment to be managed as a universal waste, require recyclers and used oil processors to develop closure plans and meet financial responsibility requirements, and provide several other changes and updates.

Used Oil

Washington State law (Chapter 70.95I RCW) requires local governments to manage used oil in conjunction with their MRW programs and to submit annual reports to Ecology.

12.3 MODERATE RISK WASTE GENERATION

RCW 70.105.220(1)(a) requires local governments to prepare hazardous waste plans that contain an assessment of the quantities, types, generators and fate of hazardous waste in each jurisdiction. This Plan serves to compile that data for Yakima County and this Chapter focuses on the MRW associated with HHW and SQG aspects/quantities of hazardous waste. The quantities, types and fate of MRW in Yakima County are described in detail in Section 12.4. The following subsections focus on the generators of this waste in Yakima County.

12.3.1 Hazardous Waste Inventory

The following information helps provide an inventory of hazardous waste management in Yakima County by addressing dangerous waste generators (i.e., large-quantity generators), contaminated sites, transporters and processing facilities, and locations where hazardous waste facilities can be sited ("zone designations").

Dangerous Waste Generators

Ecology records (latest data as of June 2014) show that the following numbers of businesses and institutions in Yakima County are registered as hazardous waste generators:

- 13 large-quantity generators,
- 15 medium-quantity generators,
- 47 small-quantity generators, and
- 34 businesses and institutions with EPA or State identification numbers but that did not generate waste in the most recent year (2013).

Remedial Action Sites

Ecology's list of confirmed and suspected contaminated sites in Yakima County can be found at www.ecy.wa.gov/programs/tcp/sites/sitelists.htm. As of May 2016 there were 492 of these sites identified in Yakima County.

Hazardous Waste Services (Transporters and Facilities)

A large number of private companies provide transportation and disposal services for a wide range of materials. The current list of these companies can be found at http://www.esdwa.com/services/index.cfm, under the Hazardous Waste & Materials master category group.

12.3.2 Inventory of Moderate Risk Waste Generators

As stated above, MRW generators include HHW from local residents, as well as SQG

from local businesses and institutions. The 2015 population of Yakima County is 249,970 residents, currently residing in an estimated 87,982 housing units[1]. However, not all residents and/or businesses are generators of MRW. For residential sources in particular, products may be stored for several years before the resident determines that the material is no longer useful and is thus a MRW. In addition, although quantities and types of MRW collected and shipped are tracked, it is unknown how many residents are recycling oil or batteries through various drop-off programs, or disposing of wastes through drop-off programs and private collection services. Also unknown is the number of SQGs and large-quantity generators utilizing the services of private collection companies for their hazardous wastes in addition to, or in lieu of, the HSBWCF.

Therefore when analyzing the effectiveness of current programs for MRW, Section 12.4 estimates capture rates based on a comparison of the measured material quantities in both the MSW waste stream and the MRW waste stream (see Table 12.3).

12.4 EXISTING PROGRAM ELEMENTS

This section describes existing programs to manage MRW in Yakima County.

12.4.1 Current Moderate Risk Waste and Oil Programs

Collection

MRW in Yakima County is collected primarily through drop-off programs. There are a variety of drop-off programs active in Yakima County, including:

- The HSBWCF at the THLF which accepts hazardous wastes from households and SQGs. Wastes are accepted from both at no charge, but SQGs are required to make an appointment prior to bringing in wastes. Residents can bring in HHW any time that the facility is open (currently 9 a.m. through 5 p.m. Wednesday through Saturday).
- Yakima County also provides satellite HHW facilities at the LVTS and CLF. No SQG HHW is accepted at these facilities. Only small quantities of HHW are accepted at these locations, as in no containers with a volume of 5-gallons or greater are accepted.
- An HHW drop-off facility at the Granger Transfer Station is owned and operated by Yakima Waste Systems. This drop-off operation is required by the Yakima Health District through the permit for this facility, and the relatively small amounts of materials collected there are brought to the HSBWCF.
- The Yakima Training Center military facility collects MRW from their personnel as well as from their own operations.
- Approximately 20 locations throughout Yakima County accept used motor oil for recycling
- Approximately 20 locations in Yakima County currently accept household batteries (sizes AAA through D), 9 volt batteries, and smaller batteries used for hearing aids,

[1] 2015 estimate of total housing units (source: Washington State Office of Financial Management)

calculators and similar applications. Most of these locations are private companies such as hardware and grocery stores. Lead-acid vehicle batteries are taken back by auto parts stores and similar retail locations that sell new batteries, and are also accepted at Yakima County's HSBWCF.

- The WSDA conducts an agricultural chemical waste collection event in Yakima twice per year. WSDA collects fifty different chemicals at the Yakima County events. Participants must sign up in advance to bring in wastes, but there is no cost to participate.
- SQGs and large-quantity generators also use the services of private companies that collect specific types of wastes, but little information is available on the amounts collected in this manner.

Ready to Reuse Program

The HSBWCF includes a Ready to Reuse Program, which was implemented as a way to repurposed household products that are still usable to others (including automotive products, gardening chemicals, household cleaners, paint, stain, and primer). These products are free for individuals, businesses, or service groups that have a use for a specific product. There is a ten item limit per week, per customer, and all products must be used by the individual or group taking them; they cannot be sold or given to anyone else. The Ready to Reuse Program is open Wednesday through Saturday from 9 a.m. to 5 p.m.

Processing, Transport and Disposal

MRW to be shipped off-site for recycling or disposal is sorted at the HSBWCF according to its Washington State Department of Transportation hazard classification (flammable, toxic, acid, corrosive or reactive) and consolidated for shipment. The drums of waste are stored at HSBWCF until truckload quantities are available for transport. MRW is shipped to licensed hazardous waste treatment, storage and/or disposal facilities. The current oil and antifreeze contractor is Thermofluid. Other MRW is treated or disposed under contract with Stericycle. Table 12.2 provides the estimated quantities of MRW processed, transported and disposed of in 2015:

Table 12.2 MRW Quantities Shipped From the HSBWCF in 2015 (pounds)

Waste Type	HHW	SQG	Disposal Method
Batteries:			
Household	10,158	4,899	Treated/Landfilled
Automotive	29,121	0	Recycled
Ni-Cd	1,059	570	Recycled
Fluorescent Tubes and CFLs	26,366	14,197	Recycled
Paint:			
Latex	52,582	28,314	Recycled
Oil Based	60,325	32,483	Energy Recovery
Pesticide/Poisons	19,162	10,318	Energy Recovery
Waste Exchange	130,466	0	Reused
Other Hazardous Wastes:			
Corrosives	5,264	4,139	Treated
Flammables	18,956	10,207	Energy Recovery
Mercury Devices	150	97	Recycled
Reactives	2,380	15	Energy Recovery
Other	14,083	8,728	Varies
Totals	370,072 pounds, or 185.04 tons	113,967 pounds, or 56.98 tons	-
Waste Oil and Related Materials:			
Used Oil	462,563 pounds, or 231.3 tons		Recycled
Used Oil Filters	40,334 pounds, or 20.2 tons		Recycled
Antifreeze	60,435 pounds, or 30.2 tons		Recycled
Grand Total	**1,047,371 pounds or 523.69 tons**		

HHW Education

Yakima County conducts several activities to educate residents about proper handling and disposal of HHW. These include production and distribution of a series of brochures that address HHW in general along with oil, and batteries. More information about HHW education and related activities is found in Chapter 3.

SQG Education/Technical Assistance

Many of the activities conducted by Yakima County to educate residents about HHW also serve to educate businesses about SQG wastes. More information about SQG education and related activities is provided in Chapter 3.

Compliance and Enforcement

Compliance issues are handled by the Yakima Health District, who responds to complaints and other problems as these are identified. The Yakima Health District receives grant funds specifically for this purpose.

12.4.2 Evaluation of the Current Programs

One method to assess the effectiveness of current programs for MRW is to look at the results of those programs in terms of the capture rate for various materials. The results

of the most recent WCS performed in 2015 provide an indication of the amount of MRW that is being disposed with solid wastes. The figures do not include MRW that is being illegally dumped in sewers, burned, or being handled through means other than disposal with solid waste, but it is hoped that those amounts are insignificant.

The observed quantities of various types of MRW from the 2015 WCS were compared to current solid waste tonnages to calculate the estimated capture values shown in Table 12.3. The values in Table 12.3 tend to favor those materials where good data is available, such as motor oil and batteries. The table also necessarily focuses on materials that are directly comparable to data gathered from both 2015 HSBWCF records and the 2015 WCS.

Some materials MRW may have differing or better recovery rates than indicated on the table, such as those SQG wastes handled through private collection services. Additionally, note that MRW waste composition data is generally not as precise as the data for other solid wastes, due to the relatively small quantities and infrequent occurrence of MRW in the waste stream.

Table 12.3 Capture Rates for MRW 2015

Material	Disposed with Solid Waste, TPY[1]	Recycled or Treated, TPY			Total Disposed and Recycled / Treated	2015 Capture Rate[3]	2007 Capture Rate[5]
		HSBWCF [2]	SQG[2]	Total			
Vehicle Fluids[6]	358	261.5		261.5	619.5	42.2%	99.3%
Car Batteries	0	14.6	0.0	14.6	14.6	100%	100%
Household Batteries[4]	30	5.1	2.4	7.5	37.5	20.0%	49.9%
Pesticides, Herbicides	0	9.6	5.2	14.7	14.7	100%	22.5%
Latex Paint[4]	37	26.3	14.2	40.4	77.4	52.2%	23.0%
Oil-Based Paint	0	30.2	16.2	46.4	46.4	100%	47.1%
Fluorescent Tubes	9	13.2	7.1	20.3	29.3	69.3%	21.1%

Notes:
TPY = tons per year
1. Data from the 2015 WCS.
2. See Table 12.2 for more information about Yakima County's HSBWCF and SQG recycled and treated tonnages.
3. Capture Rate = (Tons Recycled or Treated) divided by (Tons Disposed with Solid Waste + Tons Recycled or Treated).
4. Household batteries and latex paint are not classified as MRW by Ecology.
5. 2007 Capture Rate information is from the 2010 Plan.
6. Vehicle Fluids include Motor Oil and Antifreeze.

12.5 STATUS OF 2010 RECOMMENDATIONS

Current status of the recommendations made in the 2010 Plan is shown in Table 12.4.

Table 12.4 Status of 2010 Recommendations

Item	RECOMMENDATION	STATUS
MRW1	Adopt the list shown in the 2010 Plan of targeted materials for household hazardous waste and small quantity generator waste collections, but excluding e-waste and the materials shown in Group 7.	Complete
MRW2	Utilize technical assistance for small quantity generators provided by Ecology.	Ongoing
MRW3	Utilize the same schedule and process for updating the MRW Plan as for updating the solid waste management plan.	Complete

12.6 PLANNING ISSUES

There are generally five components for local MRW management programs; two that address educational efforts and three that help fulfill the mandate to prepare a "program to manage moderate-risk waste" (RCW 70.105.220(1)(a)). These five elements are as follows:

- Public education program;
- Technical assistance program for businesses;
- Collection program for HHW and used oil;
- Collection program for business wastes; and
- A plan or program to ensure compliance by SQG and others.

The existing service gaps and other issues connected to these components are discussed below.

12.6.1 Public Education

Public education activities and planning issues are discussed in greater detail in Chapter 3 of this Plan. As concluded there, the current and ongoing efforts to inform the public about opportunities for proper disposal of oil and HHW are working well.

12.6.2 Business Technical Assistance

Many of the activities conducted by Yakima County to educate residents about HHW also serve to educate businesses about SQG wastes. There are also specific activities that target businesses, such as a brochure called "Business Hazardous Waste Disposal" that describes options for proper handling and disposal of SQG wastes. More information about SQG education and related activities is provided in Chapter 3. Although limited technical assistance could be provided by Yakima County staff in the future, the level of expertise required to effectively assist many businesses would require

significant amounts of training for specific types of businesses, and might be better handled at the State level.

12.6.3 Household Collection

Household collection is currently being provided through the HSBWCF and other opportunities. One potential service gap for household collection is the idea of on-call services for elderly and disabled residents that cannot easily access the HSBWCF or other drop-off programs.

12.6.4 Business Collection

Business collection is currently being provided through the HSBWCF and other opportunities, including private contractors. One idea that could be explored for handling business MRW is to charge SQGs to use the HSBWCF, as is done in most other Washington counties. This approach could generate revenue, but might have an adverse effect on capture rates.

12.6.5 Compliance and Enforcement

Compliance and enforcement is currently being conducted on an as-needed basis and there are no known problems with this approach.

12.7 ALTERNATIVE STRATEGIES

Section 12.7 describes additional potential strategies to manage MRW in Yakima County.

12.7.1 Alternatives

Alternative A – Public Education for HHW

HHW education programs focus on identifying household products that contain hazardous ingredients, promoting safer alternatives, and explaining how to dispose of unwanted products that contain hazardous substances. Rather than continue an independent education program for MRW, Alternative A attempts to incorporate the message into other programs that also benefit from proper HHW management. Other programs that have common objectives include programs that deal with storm water, groundwater, municipal wastewater treatment, and onsite sewage systems. By coordinating the message with other resource protection and waste management programs, the message will be repeated and attention will be focused on the multiple benefits of the higher-priority management practices. This coordination option could be handled by existing Yakima County staff in conjunction with current and future promotion and education activities (as described in Chapter 3).

Alternative B – Technical Assistance for Small Quantity Generators

Additional technical assistance could be provided to help SQGs find ways to reduce hazardous waste generation, switch to safer alternatives, or simply identify hazardous wastes and then improve the handling practices for those wastes. Specifically, this assistance could focus on business sectors, schools, agricultural generators, etc., to

provide industry-specific guidance. This level of assistance would require extensive knowledge of various manufacturing and other business practices and specific expertise that is not easily available to Yakima County staff. Instead, the technical assistance may need to be provided by Ecology staff who can address specific types of businesses statewide.

Alternative C – User Fees for Small Quantity Generators

SQG waste collection is currently being provided through Yakima County's HSBWCF at no charge. An alternative for handling business MRW is to charge SQGs to use Yakima County's HSBWCF, as is done in most other Washington counties. The imposition of fees may cause some of the SQGs to dispose of their MRW by mixing it in with their solid waste or disposing of it in other undesirable ways. Mixing SQG waste with solid waste can lead to accidental and dangerous exposure for garbage truck and landfill operators. Disposal of SQG waste in other ways can also create human safety issues or environmental damage problems.

12.7.2 Evaluation of Alternative Strategies

Consistency with Planning Objectives

The three alternatives support the planning objective of ensuring compliance with State and local MSW and MRW regulations and supporting Moving Washington Beyond Waste and Toxics Plan goals.

Consistency with Management Hierarchy

The three alternatives support the management hierarchy for hazardous wastes, although Alternatives A and B do this more directly.

Customer Preferences

Customers typically prefer choices rather than mandates and lower costs rather than higher costs. Education and promotion programs typically enjoy strong customer support. Alternative C is contrary to customer preferences.

Implementation Costs

The three alternatives are low cost to Yakima County if Ecology staff provides technical assistance to businesses statewide. Alternative C would result in additional revenue for Yakima County.

12.7.3 Rating of Alternatives

The alternatives are compared with respect to the evaluation criteria in Table 12.5.

Table 12.5 Summary Rating of the Alternative MRW Strategies

Alternative		Consistency with Planning Objectives	Consistency with Management Hierarchy	Customer Preferences	Cost to Implement	Overall Rating
A	Public Education for Household Hazardous Waste	H	H	M	L	H
B	Technical Assistance for Small Quantity Generators	H	H	M	L	H
C	User Fees for SQGs	M	M	L	L	L

H - High M - Medium L - Low

12.8 RECOMMENDED ACTIONS

The following recommendations are made for MRW programs:

MRW1) Continue with Yakima County staff promotion and education efforts regarding MRW, and enhance coordination with other departments and programs to find avenues for cross-sector education.

MRW2) Utilize additional technical assistance for SQGs provided by Ecology and distribute promotional and educational materials directed at specific business, institutional, or agricultural processes.

MRW3) Continue to coordinate the schedule and process for updating the MRW Plan with the solid waste management plan (as is the current practice).

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Chapter 13 ADMINISTRATION AND ENFORCEMENT

13.1 INTRODUCTION

This chapter addresses the administrative and enforcement activities related to solid and moderate risk wastes.

13.2 BACKGROUND

Yakima County, the cities, the Yakama Nation and several other organizations and agencies are responsible for providing enforcement of federal, state, and local laws and regulations that guide the planning, operation, and maintenance of the region's solid waste management system. This local enforcement authority ensures that Yakima County system meets all applicable standards for the protection of human health and environmental quality in the region.

13.2.1 Goals and Objectives for Administration and Enforcement

Goals and objectives specific to administration and enforcement include the following:

- Ensure convenient and reliable services for managing solid waste and MRW materials;
- Promote the use of innovative and economical waste handling methods;
- Emphasize waste reduction as a fundamental management strategy;
- Support public-private partnerships for waste reduction and recycling programs;
- Encourage the recovery of marketable resources from the waste stream;
- Reduce environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping;
- Ensure compliance with State and local solid waste and MRW regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

13.3 EXISTING PROGRAM ELEMENTS

Administrative responsibility for solid waste handling systems in Yakima County is currently divided among several agencies and jurisdictions in local, county, and state government. Each organization involved in the Yakima County solid waste management system is described below.

Yakima County Public Services Solid Waste Division

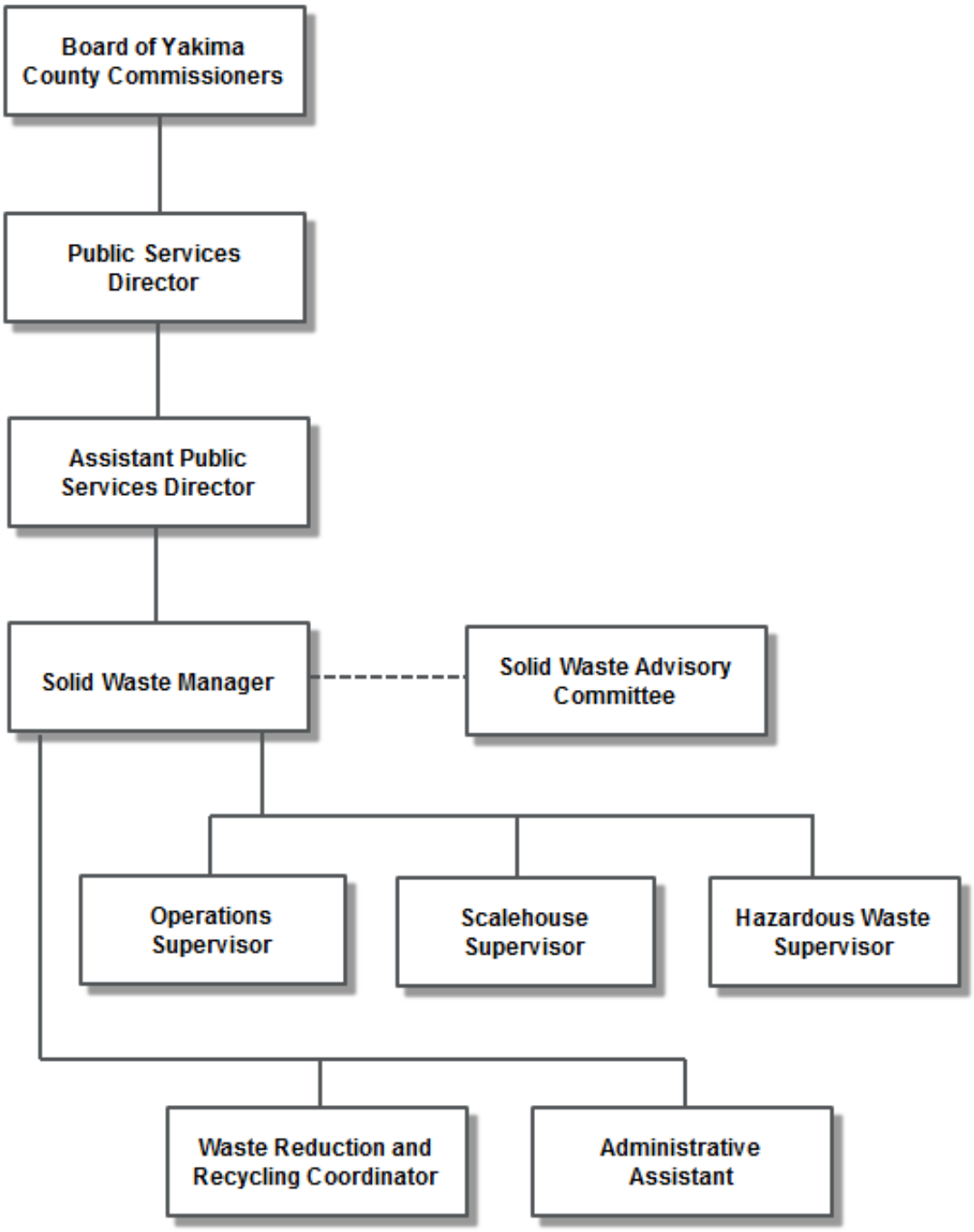
The Washington State Solid Waste Management Act, Chapter 70.95 RCW assigns local government the primary responsibility for managing solid waste. Solid waste handling, as defined in Chapter 70.95 RCW, includes the "management, storage, collection, transportation, treatment, utilization, processing, and final disposal of solid wastes, including the recovery and recycling of materials from solid wastes, the recovery of energy resources from solid wastes or the conversion of the energy in solid wastes to more useful forms or combinations thereof." Chapter 36.58 RCW authorizes Yakima County to develop, own, and operate solid waste handling facilities in unincorporated areas, or to accomplish these activities by contracting with private firms. Yakima County may regulate tipping fees, hours of operation, facility access, and waste acceptance policies at each of its facilities. Yakima County also has the authority and responsibility to prepare comprehensive solid waste management plans for unincorporated areas and for jurisdictions that agree to participate with Yakima County in the planning process. Yakima County has entered into interlocal agreements with the incorporated cities and towns within Yakima County. These agreements address the Plan participation and other aspects of solid and moderate risk waste. The interlocal agreements also require waste collected by or in the cities must go to a Yakima County disposal facility.

Yakima County exercises its solid waste responsibilities through the Public Services Solid Waste Division. The specific administrative functions performed include the following:

- Administering, staffing, and operating two landfills, three transfer stations, the HSBWCF plus satellite MRW collection facilities at LVTS and CTS, managing the closed Snipes Mountain Landfill, and various recycling and organics collection programs.
- Administering and staffing public education programs for waste reduction and recycling.
- Administering contracts.
- Maintaining the Solid and Moderate Risk Waste Management Plan as adopted relating to public health, safety, and sanitation, and providing regulations to govern the storage, collection, transfer, transportation, processing, use, and final disposal of solid waste by all persons in Yakima County.
- Providing staff support for the SWAC.

Figure 13-1 illustrates the Yakima County Public Services Solid Waste Division organizational structure. The Yakima County Public Services Solid Waste Division is staffed by about 40 employees, most of which are involved in the operation of transfer and disposal facilities.

Figure 13.1 Yakima County Public Services Solid Waste Division Organizational Structure



The Yakima County Public Services Solid Waste Division is funded by the fees collected at the three scale houses located at Lower Valley, Cheyne and Terrace Heights. Fees charged at Yakima County's solid waste facilities are set by resolution by the Board of County Commissioners. Yakima County also receives grant monies from Ecology for solid waste management planning activities and pilot projects. Table 13.1 shows the current budget (2016) for the Yakima County Public Services Solid Waste Division.

Table 13.1 Yakima County Solid Waste 2016 Budget

	2016[1] Budgeted
Revenues	
Solid Waste Fees	$8,943,500
Miscellaneous	$435,000
Total Revenues	**$9,378,500**
Expenses	
Total Operations & Maintenance	$8,273,956
Bond Debt Service	350,000
Closure/Post Closure Funding	878,304
Depreciation Amortization	600,000
Capital	4,050,000
Total Expenses	**$14,152,260**
Total Balance/(Deficiency)	**($4,773,760)**

Notes: All figures are in dollars.
1. The 2016 figures are the budgeted amounts.

Yakima County Solid Waste Advisory Committee

Per RCW 70.95.165, the Board of County Commissioners has appointed the SWAC to help develop solid waste handling programs and policies. The SWAC has adopted bylaws that can be amended by the SWAC at any time, subject to approval by the Board of County Commissioners. The term of the SWAC members is two years and members can be re-appointed by the Board of County Commissioners to serve consecutive terms. The SWAC consists of up to 13 members each with one vote and membership is outlined in the bylaws to include Yakima County, Cities, Yakima Valley Conference of Governments, Business and Industry, Waste Industry, Recycling Industry, Agricultural Industry, and an ex officio position for Public Health and Safety.

Incorporated Cities

RCW 35.21.152 empowers cities to develop, own, and operate solid waste handling systems and to provide for solid waste collection services within their jurisdictions. There are fourteen incorporated cities and towns in Yakima County.

Four municipalities operate their own collection programs and two private haulers currently operate in Yakima County. The four municipal collection programs are operated by Grandview, Granger, Toppenish, and Yakima. Those programs operate within city boundaries, as adjusted periodically by annexations. The two private haulers operate in the unincorporated areas and in the other municipalities.

Fees charged for the service cover the expenses of the system, although some cities also charge a “utility tax” that helps fund other city functions. Detailed information about collection in individual cities is included in Chapter 6 Collection. The cities coordinate

their activities for a number of issues through the Yakima Valley Conference of Governments.

Yakima Health District

The Yakima Health District is responsible for enforcing solid waste regulations and issuing permits for solid waste facilities. Permits are required for all solid waste facilities in accordance with Chapter 173-350 WAC and Chapter 173-351 WAC. Permitted solid waste facilities include, but are not limited to, landfills, transfer stations, recycling, processing, composting, and petroleum-contaminated soil remediation sites. Yakima Health District inspects solid waste facilities permitted by Yakima Health District at least once per year. Yakima Health District also reviews permit applications to ensure proposed facilities meet applicable laws and regulations, conforms to the approved Plan, and complies with zoning requirements.

Yakima County pays a fixed amount to Yakima Health District in lieu of facility permit fees. This fixed amount provides funding for Yakima Health District's assistance to Yakima County in the implementation of the Plan under RCW 70.95.160. Yakima Health District also receives grant funds from Ecology for enforcement and permit fees for non-County facilities.

Washington State Department of Ecology

Chapter 70.95 RCW provides for a comprehensive, statewide solid waste management program and assigns primary responsibility for solid waste handling to local governments. This regulation gives each county, in cooperation with its cities, the task of setting up a coordinated SWMP that places an emphasis on waste reduction and recycling programs. Enforcement and regulatory responsibilities are assigned to cities, counties, or jurisdictional health departments (like Yakima Health District), depending on the specific activity and local preferences, but Ecology issues permits for land application of bio-solids.

Ecology has promulgated Chapter 173-350 WAC, Solid Waste Handling Standards, which addresses the operational and other requirements for recycling and composting facilities as well as inert and special purpose landfills. Chapter 173-351 WAC, Criteria for Municipal Solid Waste Landfills, contains the current standards for municipal solid waste landfills.

The Model Litter Control and Recycling Act (RCW 70.93.060) prohibits depositing garbage on any property not properly designated as a disposal site. There is also a "litter fund" that has been created through a tax levied on wholesale and retail businesses, and the monies from this fund are being used for education, increased litter clean-up efforts, and contracts to eligible county entities for illegal dump clean-up activities.

Under the Model Toxics Control Act (RCW 70.105D), grants are available to local governments for solid waste management plans and programs, hazardous waste management plans and programs, and remedial actions to clean up existing hazardous waste sites. Solid and hazardous waste planning and programs are funded through the Coordinated Prevention Grants program administered by Ecology's Solid Waste and Financial Assurance Program. The state rule that governs this program is Chapter 173-

312 WAC – Coordinated Prevention Grants.

Washington Utilities and Transportation Commission

The WUTC regulates privately-owned utilities that provide public services such as electric power, telephone, natural gas, private water, transportation, and refuse collection. WUTC's authority over solid waste collection is established in Chapter 81.77 RCW. This authority does not extend to companies operating under contract with any city or town, or to any city or town that undertakes solid waste collection. WUTC regulates solid waste collection companies by granting "certificates of convenience and necessity" that permit collection companies to operate in specified service areas. WUTC also regulates solid waste collection, under authority of RCW 81.77.030, by performing the following functions:

- Fixing collection rates, charges, classifications, rules, and regulations.
- Regulating accounts, service, and safety of operations.
- Requiring annual reports and other reports and data.
- Supervising collection companies in matters affecting their relationship to their customers.
- Requiring collection companies to use rate structures consistent with Washington State waste management priorities.

The WUTC requires certificate holders to provide the minimum levels of solid waste collection and recycling services established by a local SWMP and enacted through an ordinance. Solid waste companies operating in the unincorporated areas of a county must comply with the SWMP (RCW 81.77.040).

At its option, Yakima County may notify the WUTC of its intention to have the G-certificate holder bid on the collection of source-separated recyclable materials from residences in unincorporated areas. Commercial recycling is also regulated by the WUTC, under laws that apply in general to motor freight carriers (Chapter 81.80 RCW), although their oversight is limited to requiring a permit (at $100 per year) and also to require companies to carry insurance, conduct drug testing of employees, and conduct a few other activities.

This Plan contains a cost assessment (see Appendix F) prepared according to the W*UTC Cost Assessment Guidelines for Local Solid Waste Management Planning* (WUTC 2001). RCW 70.95.096 grants the WUTC 45 days to review the plan's impact on solid waste collection rates charged by solid waste collection companies regulated under Chapter 81.77 RCW, and to advise Yakima County and Ecology of the probable effects of the Plan's recommendations on those rates.

Yakima Regional Clean Air Agency

Yakima Regional Clean Air Agency (YRCAA) is delegated to enforce certain Federal regulations, State regulations including the Washington Clean Air Act, and YRCAA regulations within the boundaries of Yakima County. This applies to all areas of Yakima County except for Yakama Nation Reservation lands, which are guided by the Federal Air Rules for Reservations regulations, and the Yakima Training Center.

Environmental Protection Agency

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

Yakama Nation

The Yakama Nation is a federally recognized Indian Nation and its reservation occupies 1.4 million acres located in south central Washington. This is the largest land area of the 29 Federally-recognized Indian Tribes in Washington State. The reservation encompasses the cities of Toppenish and Wapato and the town of Harrah, as well as unincorporated areas. The Tribe is governed by a Tribal Council made up of elected members. Tribal Council holds regular meetings and handles Yakama Nation business affairs. The Yakama Nation has inherent authority to govern all activities as they pertain to solid waste management within the boundaries of the Yakama Nation Reservation.

The Yakama Nation does not have an interlocal agreement with Yakima County and therefore is not a signatory to this Plan.

United States Army

The United States Army is responsible for the collection of solid waste on the Yakima Training Center. Yakima Waste Systems, Inc., is the current hauler for the training center. Most of the waste collected from the Training Center is brought to the Terrace Heights Landfill for disposal.

Yakima Training Center owns and operates a permitted limited purpose landfill on the property. Refer to Chapter 9 Construction, Demolition and Land Clearing Debris and Building Materials for additional information regarding this limited purpose landfill.

13.4 STATUS OF 2010 RECOMMENDATIONS

The status of the recommendations made by the 2010 Plan is shown in Table 13.2.

Table 13.2 Status of 2010 Recommendations

Item	Recommendation	Status
AR1	Address illegal dumping problems in Yakima County with a task force and the SWAC.	Ongoing. Limited implementation of Citizen's Task Force (See Chapter 3)
AR2	Consider adopting minimum service levels in the future.	Ongoing consideration
AR3	Exercise flow control authority as needed to enforce the policy that all solid wastes generated in Yakima County is delivered to a County solid waste facility. Adopt a flow control ordinance or other steps if necessary.	Ongoing consideration

13.5 PLANNING ISSUES

Existing service gaps and other issues connected to Administration and Enforcement components of solid waste management are discussed below.

13.5.1 Minimum Service Levels

Residents in the cities and incorporated areas currently receive more solid waste services than residents of the unincorporated areas in Yakima County; although in many cases this is because rural residents choose not to subscribe to certain services (see Chapter 6 for more details). A minimum service level standard would help address such inequities, and could also increase recycling and yard debris collections. Refer to Chapter 4 Waste Reduction and Recycling, specifically the alternative strategy discussed in paragraph 4.5.7 Adopt a County Service-Level Ordinance that Promotes Residential Waste Reduction and Curbside Recycling, for additional information.

13.5.2 Collection and Disposal Districts

A collection district would also allow Yakima County to set standards and implement services such as recycling, while a disposal district would allow Yakima County to collect fees and implement disposal and other programs.

13.5.3 Long-Term Funding Needs

Long term trends in recycling and composting rates show a continuing increase, therefore, the amount of solid waste disposed of in landfills continues to decrease. A recent rate study commissioned by Yakima County has recommended a tipping fee increase. However, Yakima County may need to find other sources of funding besides relying primarily on the refuse tipping fee as recycling and diversion increase.

13.5.4 Flow Control

Flow control for the wastes collected in the cities is currently achieved through the interlocal agreements. Yakima County has a policy that wastes collected in the

unincorporated areas also must be delivered to Yakima County's disposal facilities. Although the current system is working well, Yakima County's ability to make long-range plans and invest in future disposal facilities might be improved if a flow control ordinance were adopted, thus avoiding unforeseen changes in the future.

13.6 ALTERNATIVE STRATEGIES

Section 13.6 describes additional potential strategies related to Administration and Enforcement.

13.6.1 Alternatives

Alternative A – Establishment of Minimum Service Levels

One administration-level alternative to the current collection system in Yakima County is to adopt a minimum service level ordinance. This approach could be used to institute new programs or services in the unincorporated areas of Yakima County and also possibly in the cities. A minimum service level ordinance could be used to change the rates or billing practices, for instance by "embedding" the cost of recycling into garbage collection fees. Also called a "recycling discount," this approach helps to encourage recycling because it appears that people are receiving a discount from their garbage bill by agreeing to recycle. Implementing either the mandatory pay/voluntary participation approach or recycling discounts would require Yakima County to adopt a minimum service level ordinance that provides the foundation for this approach. The minimum service level ordinance could also address yard debris collection. Examples of minimum service level ordinances in other counties can be found at: http://www.ecy.wa.gov/programs/swfa/localplan.html .

Alternative B – Establishment of Collection and Disposal District(s)

Chapter 36.58 RCW, Solid Waste Disposal, establishes the counties' rights and responsibilities regarding solid waste management, including the authority to establish solid waste disposal districts. The authority to establish solid waste collection districts is provided in Chapter 36.58A. Either district can include the incorporated areas of a city or town only with the city's consent. A solid waste district (for collection or disposal) could centralize functions that are now handled by a variety of county and city agencies, but it may be difficult to develop a consensus on the formation and jurisdiction of either type of district. Either type of district may be able to alleviate illegal dumping and other problems through the institution of mandatory garbage collection (for a collection district only) and different financing structures.

The establishment of a solid waste collection district that can act in a similar capacity is allowed by RCW 36.58A. A collection district can be created following the adoption of a SWMP; however a collection district does not appear to possess taxing authority. According to RCW 36.58A.040, the revenue-generating authority of a collection district is limited.

A solid waste disposal district is a quasi-municipal corporation with taxing authority set up to provide and fund solid waste disposal services. A disposal district has the usual powers of a corporation for public purposes, but it does not have the power of eminent

domain. A county legislative authority (i.e., the Board of County Commissioners) would be the governing body of the solid waste disposal district.

RCW 36.58.130 allows the creation of a disposal district to provide for all aspects of solid waste disposal. This includes processing and converting waste into useful products, but specifically does not allow the collection of residential or commercial garbage. A disposal district may enter into contracts with private or public agencies for the operation of disposal facilities, and then levy taxes or issue bonds to cover the disposal costs. Thus, a disposal district established in Yakima County could assess each resident or business (in incorporated areas only with the city's approval) a pro rata share of the cost of disposal. This could help to discourage illegal dumping by covering at least part of the disposal cost through mandatory payments, so that the additional expense for proper disposal would be lower than it is currently. In other words, the assessment by the disposal district would be paid regardless of where the resident or business dumped the waste or whether it was self-hauled or transported by a commercial hauler, and the latter two options would be less expensive by the amount of disposal costs already paid.

RCW 36.58.140 states that a disposal district may "collect an excise tax on the privilege of living in or operating a business in the solid waste disposal taxing district, provided that any property which is producing commercial garbage shall be exempt if the owner is providing regular collection and disposal." The district has a powerful taxing authority, since it may attach a lien to each parcel of property in the district for delinquent taxes and penalties, and these liens are superior to all other liens and encumbrances except property taxes.

The funds obtained by a disposal district tax may be used "for all aspects of disposing of solid wastes...exclusively for district purposes" (RCW 36.58.130). Potential uses include:

- Cleanup of roadside litter and solid wastes illegally disposed of on unoccupied properties within the district.
- Public information and education about waste reduction and recycling.
- Defraying a portion of the cost of disposal.
- Subsidizing waste reduction/recycling activities.
- Subsidizing the HSBWCF and collection events.
- Closure and post-closure costs for the old landfill and for other solid waste facilities.
- Solid waste planning.

Alternative C – Additional Funding Options

Solid waste operations in Yakima County are financially self-supporting. Almost all revenue needed to achieve this goal is currently generated through tipping fees, but other options do exist, including the collection and disposal districts discussed in Alternative B. Additional funding options (grouped by category) and the associated implementation entity are provided on Table 13.3.

Table 13.3 Potential Funding Methods for Solid Waste Management

Possible Funding Methods	Potential Implementation Entity			
	City	County	State	Private Sector
User Fees, Rates, Surcharges				
1. Cost-of-Service-Based Rates	X	X		X
2. Other Volume-Based Rates	X			
3. Fixed Per-Customer Service Rates	X			X
4. Collection Rate Surcharges	X			
5. Planning Fees		X		
6. Weight or Volume-Based Disposal Fees	X	X		X
7. Fixed Per-Customer Disposal Fees	X	X		X
8. Disposal Surcharges	X	X		
Taxes				
9. MTCA Funds, Hazardous Substance Tax		(x)	X	
10. State Litter Tax		(x)	X	
11. Disposal District Excise Tax		X		
12. Mandatory Collection		X		
13. Franchise Fees	X		X	
Other				
16. Enforcement Fines/Penalties		X		
17. Sales of Recyclable Materials	X	X		X
18. Recycling Fees/Charges	X	X		X
19. Sales of Recovered Energy		X		X
20. Utility Tax	X			
21. General Fund Revenues	X	X		
22. Bond Financing		X		(x)
23. Public Works Assistance Account[1]	X	X		

Note: X = Implementing authority, (x) = potentially benefits from funding method but cannot implement it.
[1] Public Works Assistance Account, commonly known as the Publics Works Trust Fund, was established by C 43.155 to be used by the Public Works Board to finance local government infrastructure loans.

Alternative D – Consider Adoption of Flow Control Ordinance

Although the current system is working well, Yakima County's ability to make long-range plans and invest in future disposal facilities might be improved if a flow control ordinance were adopted, thus avoiding unforeseen changes in the future. This ordinance would be a mechanism to "guarantee" revenue streams into the future in a holistic way, rather than reliance on individual interlocal agreements.

13.6.2 Evaluation of Alternative Strategies

The alternatives are compared with respect to the evaluation criteria below.

Consistency with Planning Objectives

The alternatives are consistent with the objectives of this Plan. The alternatives are administrative and enforcement alternatives designed to achieve the Plan objectives.

Customer Preferences

Customers generally prefer flexibility and low-cost alternatives, and hence may not like Alternatives A and B. Customers may be neutral on Alternative C, depending on whether any new funding mechanisms may be perceived as an increase in costs or not. Alternative D may not have any significant change perceived by customers.

Implementation Costs

The implementation costs for Alternative C are not applicable, since these are methods for collecting additional funds. Alternatives A and B would not cost much to implement, although these alternatives could lead to higher costs for customers and citizens. Alternative D would not be expensive to implement, and would likely have no inherent increase in costs to customers, but would be a mechanism to guarantee revenue into the future for Yakima County.

13.6.3 Rating of Alternatives

The alternatives are compared with respect to the evaluation criteria in Table 13.4.

Table 13.4 Summary Rating of the Administration and Enforcement Strategies

Alternative		Consistency with Planning Objectives	Customer Preferences	Cost to Implement	Overall Rating
A	Minimum Service Levels	H	L-M	M-H	M
B	Collection or Disposal District	H	L-M	M	M
C	Funding Options	H	M	L-M	M
D	Flow Control Ordinance	H	M	L	M

H – High M – Medium L – Low

13.7 RECOMMENDED ACTIONS

The following recommendations are being made for administrative and enforcement programs:

AE1) Consider adopting minimum service levels in the future to promote consistency in service County-wide.

AE2) Consider either Alternative B (Collection or Disposal District) and/or Alternative D (Flow Control Ordinance) as mechanisms to promote consistent service and to diversify funding and revenue. These also incorporate some of the Surcharge

and Taxes category funding options listed in Table 13.3.

AE3) Consider pursuing some of the additional funding strategies listed in Table 13.3 in the “Other” possible funding methods category that can be implemented by Yakima County directly and independently from other alternatives. Specifically, Sales of Recovered Energy is a viable alternative if a landfill gas to energy project is implemented at Terrace Heights and/or Cheyne Landfills.

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Chapter 14 IMPLEMENTATION PLAN

14.1 INTRODUCTION

This chapter of the Plan provides information about the cost and schedule for implementing the recommendations made in this Plan. Information is also provided on monitoring progress and maintaining the Plan.

14.2 RECOMMENDED STRATEGIES

The recommendations made in previous chapters of this Plan are repeated below for convenient reference, as later sections of this chapter discuss costs and implementation responsibilities. More details about specific recommendations can be found in the respective chapters.

Chapter 3: Promotion and Education

Chapter 3 of the Plan discusses public education activities. Much is already being accomplished in Yakima County regarding public education but there are opportunities for additional activities, leading to the following recommendations:

PE1) Continue to incorporate a larger promotion and educational role for the stakeholder cities, through an active partnership with Yakima County. Existing Yakima County Public Services Solid Waste Division staff should continue to take the lead in most areas and will provide technical assistance on an as-needed basis. Engage other organizations, including service groups, schools, Yakima Waste Systems, Basin Disposal, and other private companies (as appropriate to the program or material being promoted), to conduct education for their own specific program.

PE2) As new programs are developed, educational efforts will be coordinated.

PE3) Assist businesses in developing a waste reduction and recycling plan specific to their waste stream.

PE4) Continue to engage the media to promote waste reduction strategies.

Yakima County will provide the overall public education program and will be the lead agency for most of these activities. Cities, service groups, haulers and other private companies will promote local programs. The budget for these activities consists primarily of continuing the existing budget plus small additional amounts and/or reallocation of existing funds for new activities. More details on the budget can be found in Table 14.1.

Chapter 4: Waste Reduction and Recycling

Chapter 4 discusses existing programs and provides recommendations for two related topics: waste reduction and recycling. The following recommendations are proposed:

WRR1) Adopt the updated list of designated materials (Table 4.3) and maintain it through periodic review and updates.

WRR2) Continue to provide support for recycling at public events.

WRR3) Adopt a County service-level ordinance that promotes residential recycling and waste reduction.

WRR4) Expand recycling drop-off opportunities in signatory cities and at private sites.

WRR5) Conduct a feasibility study for a mixed waste processing facility in Yakima County.

WRR6) Support private sector programs, forums or other methods, such as a reusable materials exchange programs to facilitate business material exchanges.

WRR7) Increase promotion of existing reuse programs through newsletters, community reuse events, guidebooks, and community-based social marketing.

WRR8) Continue to conduct periodic waste characterization studies. Despite its relatively high cost and low direct impact on diversion in Yakima County, these efforts provide data to track progress of Yakima County's waste reduction and diversion program performance, refine existing programs, and identify new program opportunities.

WRR9) Encourage the use of small-sized garbage carts.

Some of these policies have no direct costs, but could lead to additional costs through new programs that may be needed in the future. Conducting a mixed waste processing facility feasibility study (WRR5) is contingent upon the availability of a grant or other funds to pay for it. Similarly, a waste characterization study (WRR8) will require funding. Yakima County has the primary responsibility for these recommendations except for WRR4, for which the municipalities are responsible. More details on the budget can be found in Table 14.1.

Chapter 5: Organics

Chapter 5 discusses existing programs, identifies relevant planning issues, and develops/evaluates alternative strategies for organic materials, including yard debris, wood waste, food waste, and agricultural wastes. Opportunities for additional programs to address these wastes have resulted in the following recommendations:

O1) Continue the yard debris composting program as is for material collected in the 'pest free' area.

O2) Comply with the WSDA apple maggot quarantine requirements, specifically the Notice of Correction[1] regarding the management of yard waste within the quarantine area separately from material in the 'pest free' area.

O3) Seek to clarify appropriate measures that could allow composting of yard wastes collected within the apple maggot quarantine area at Natural Selection Farms, such as implementing pathogen reduction compost measures, as appropriate.

[1] State of Washington, Department of Agriculture, Notice of Correction, August 18, 2015

O4) Explore other options, including a Yakima County owned and operated compost facility, if Recommendation O3 cannot be implemented due to terms or other reasons.

The budget for these activities will consist primarily of continuing the existing budget plus reallocation of existing funds for new activities. More details on the budget can be found in Table 14.1.

Chapter 6: Collection

Chapter 6 discusses existing municipal solid waste collection services in unincorporated Yakima County and in the fourteen participating cities and towns. These programs are operating satisfactorily. Chapter 6 concludes with the following recommendations:

SWC1) Continue to require waste to be routed through Yakima County-owned facilities in future interlocal agreements.

SWC2) Review collection contracts to confirm compliance with the Plan.

SWC3) Consider requiring adequate space for garbage and recycling collection in new housing developments by modifying land development codes.

The budget for these activities will consist primarily of continuing the existing budget plus additional amounts and/or reallocation of existing funds for new activities. More details on the budget can be found in Table 14.1.

Chapter 7: Transfer System

Chapter 7 discusses existing and potential transfer facilities and programs. The following recommendations are made for future changes in the transfer system:

TS1) Consider purchasing (or taking an option on) property suitable for a future transfer station as land becomes available in the West Valley Service Area and as funds allow.

TS2) Expand tipping capacity the THTS to accommodate commercial traffic when THLF Phase 1 reaches capacity (currently estimated for 2027).

TS3) Review LVTS utilization by commercial haulers to increase efficiency and convenience of operations for both commercial and self-haul customers.

TS4) Consider commissioning a more detailed study to evaluate Alternatives D, E, and F at the LVTS to determine the best course of action at that facility.

Yakima County would take the lead in implementing these recommendations. TS2 involves the highest cost, and will be critical to the continued operation of the solid waste system, but is not projected within the time period of this Plan (currently projected in 2025). The timing of TS2 is a function of when THLF is projected to reach capacity. More details on the budget can be found in Table 14.1.

Chapter 8: Disposal

The current system of a mix of Yakima County-owned and privately-owned landfills is working well. Chapter 8 outlines the following recommendations:

D1) Maintain the option to preserve capacity at THLF. Fill THLF Phase 1 to its

permitted capacity, predicted to be 2027.

D2) Consider purchasing (or taking an option on) property adjacent to CLF suitable for landfilling purposes.

D3) Consider LFG to energy in the future, but only if this can be proven to be cost-effective.

Yakima County is the lead agency for solid waste disposal. Because it owns and operates two MSW landfills, Yakima County has considerable autonomy and flexibility in choosing disposal options and their timing. The budget for these activities will greatly depend on future decisions made by Yakima County regarding land purchase, landfill expansion, and LFG to energy. More details on the budget can be found in Table 14.1.

Chapter 9: Construction, Demolition and Land Clearing Debris and Building Materials

Chapter 9 discusses construction, demolition and land clearing debris and building materials. The following recommendations are proposed:

C&D1) Promote proper reuse, recycling and disposal of C&D.

C&D2) Partner with private organizations such as the Habitat for Humanity ReStore to promote recycling and reuse of C&D and building materials.

Yakima County is the lead agency for both of these recommendations, and all are essentially ongoing activities. Assistance with Recommendation C&D2 should be provided by the private sector and cities where appropriate.

Chapter 10: Special Wastes

Chapter 10 discusses the various materials that are considered “special wastes” because they pose somewhat elevated risks, require additional precautions, or special handling procedures. For the most part, special wastes can be handled by the existing solid waste infrastructure and programs, but with a few additional considerations:

SW1) Continue to dispose of special wastes through a cooperative effort with the Yakima Health District and Ecology, and according to the established Solid Waste Policy & Procedures document.

SW2) Update the Solid Waste Policies & Procedures document as necessary to address new issues or special wastes.

SW3) Monitor EPA and Washington State guidance regarding pharmaceutical waste and implement changes as needed to comply with statewide medicine take-back program.

Yakima County is the lead agency for these recommendations, and these are essentially ongoing activities. SW1 and SW3 would be in collaboration and/or dependent upon other agencies.

Chapter 11: Disaster Debris Management

Chapter 11 discusses the management of debris generated by a natural or human-caused disaster and makes the following recommendations:

DD1) Coordinate with Yakima County Office of Emergency Management and City of Yakima Emergency Management Office to prepare for disaster debris response with detailed plans for debris removal and disposal activities.

DD2) Develop an internal plan for handling disaster debris, in coordination with the Yakima County Office of Emergency Management and City of Yakima Emergency Management Office.

DD3) Consider reserving landfill airspace for disaster debris disposal.

Yakima County Public Services Solid Waste Division is the lead agency for these three recommendations. More details on the budget can be found in Table 14.1.

Chapter 12: Moderate Risk Waste

Chapter 12 provides an update of the Yakima County Moderate Risk Waste plan. The following recommendations are being proposed for MRW programs:

MRW1) Continue with Yakima County staff promotion and education efforts regarding MRW, and enhance coordination with other departments and programs to find avenues for cross-sector education.

MRW2) Utilize additional technical assistance for SQGs provided by Ecology and distribute promotional and educational materials directed at specific business, institutional, or agricultural processes.

MRW3) Continue to coordinate the schedule and process for updating the MRW Plan with the solid waste management plan (as is the current practice).

Yakima County has the primary authority for two of these recommendations (MRW1 and MRW3). Ecology has the primary authority for MRW2, the cost and schedule for which will be dependent on the amount of assistance requested by SQGs. The budget for these activities will consist primarily of continuing the existing budget plus small additional amounts and/or reallocation of existing funds for new activities. More details on the budget can be found in Table 14.1.

Chapter 13: Administration and Enforcement

The administration and enforcement of the solid waste system is an activity that is shared among several parties, including Yakima County, Yakima Health District, cities and towns, Yakama Nation and the private sector. Yakima County and Yakima Health District have the primary responsibility for these activities, except on the Yakama Reservation where the Yakama Nation has the primary authority for solid waste activities.

AE1) Consider adopting minimum collection service levels in the future to promote consistency in service County-wide.

AE2) Consider either Alternative B (Collection or Disposal District) and/or Alternative D (Flow Control Ordinance) as mechanisms to promote consistent service and to diversify funding and revenue. These also incorporate some of the Surcharge and Taxes category funding options listed in Table 13.3.

AE3) Consider pursuing some of the additional funding strategies listed in Table 13.3 in the “Other” possible funding methods category that can be implemented by

Yakima County directly and independently from other alternatives. Specifically, Sales of Recovered Energy is a viable alternative if a LFG to energy project is implemented at Terrace Heights and/or Cheyne Landfills.

Yakima County is the lead agency for these recommendations so the additional costs are largely limited to a portion of staff time (for existing staff). The budget for these activities will consist primarily of continuing the existing budget plus additional amounts and/or reallocation of existing funds for new activities. More details on the budget can be found in Table 14.1.

14.3 STATE ENVIRONMENTAL POLICY ACT

Ecology requires the potential impacts of this Plan be evaluated according to the State Environmental Policy Act (SEPA) process. The checklist has been prepared to fulfill that requirement and is included as Appendix G.

The SEPA checklist is a "non-project proposal" intended to address new programs recommended by the Plan. As a non-project proposal SEPA checklist, it is unable to fully address the potential impacts of facilities proposed in this Plan. Any new facility will need to undergo its own SEPA review process.

14.4 ESTIMATED ADDITIONAL COSTS

Table 14.1 shows the approximate budget for Plan recommendations that incur additional costs above and beyond current status quo costs and programs.

Table 14.1 Six-Year Implementation Budget for Additional Costs

Recommendation	Additional Cost by Implementation Year					
	2017	*2018*	*2019*	*2020*	*2021*	*2022*
3. Promotion and Education						
PE1) Increase promotion and education in stakeholder cities	No Additional Cost					
PE2) Coordinate education efforts with new programs	No Additional Cost					
PE3) Continue to engage media	No Additional Cost					
4. Waste Reduction and Recycling						
WRR1) Adopt and maintain list of designated materials	No Additional Cost					
WRR2) Support recycling at public events	No Additional Cost					

Table 14.1 Six-Year Implementation Budget for Additional Costs

Recommendation	Additional Cost by Implementation Year					
	2017	*2018*	*2019*	*2020*	*2021*	*2022*
WRR3) Adopt service-level ordinance to promote recycling and waste	No Additional Cost					
WRR4) Expand recycling drop off opportunities	Note 2					
WRR5) Conduct mixed waste processing facility feasibility study	-	-	-	-	-	$85,000[6]-
WRR6) Support private sector programs	No Additional Cost					
WRR7) Increase promotion of existing reuse programs	No Additional Cost					
WRR8) Continue periodic waste characterization	-	-	-	-	-	$150,000[6]
5. Organics						
O1) Continue program as is in 'pest free' area	No Additional Cost					
O2) Comply with WSDA apple maggot quarantine requirements	No Additional Cost					
O3) Consider options within apple maggot quarantine area	No Additional Cost[7]					
O4) Explore other options if needed	No Additional Cost[7]					
6. Solid Waste Collection						
SWC1) Require waste routed through Yakima County-owned facilities	No Additional Costs					
SWC2) Review collection contracts	No Additional Costs					
SWC3) Require space in new development	No Additional Costs					
7. Transfer System						
TS1) Purchase or option property	Note 3					
TS2) Expand transfer station at THLF	Note 4					

Table 14.1 Six-Year Implementation Budget for Additional Costs

Recommendation	Additional Cost by Implementation Year					
	2017	*2018*	*2019*	*2020*	*2021*	*2022*
TS3) Evaluate LVTS Utilization	No Additional Costs					
TS4) Consider detailed study of LVTS	-	-	$25,000	-	-	-
8. Disposal						
D1) Maintain option to preserve capacity at THLF	No Additional Costs					
D2) Purchase or option property	Note 3					
D3) Consider LFG to Energy in future	Note 5					
9. Construction, Demolition and Land Clearing Debris and Building Materials						
C&D1) Promote proper management of C&D waste	No Additional Costs					
C&D2) Partner with private organizations	No Additional Costs					
10. Special Wastes						
SW1) Cooperative effort for special wastes	No Additional Costs					
SW2) Update the Solid Waste Policies and Procedures	No Additional Costs					
SW3) Monitor guidance regarding pharmaceutical waste	No Additional Costs					
11. Disaster Debris Management						
DD1) Coordinate with Office of Emergency Management and Emergency Management Office	No Additional Costs					
DD2) Develop a disaster debris plan	-	-	$50,000	-	-	-
DD3) Reserve landfill airspace	No Additional Costs					

Table 14.1 Six-Year Implementation Budget for Additional Costs

Recommendation	Additional Cost by Implementation Year					
	2017	*2018*	*2019*	*2020*	*2021*	*2022*
12. Moderate Risk Waste						
MRW1) Continue promotion and education coordination	No Additional Costs					
MRW2) Technical assistance by Ecology	No Additional Costs					
MRW3) Update MRW plan with solid waste plan	No Additional Costs					
13. Administration and Enforcement						
AE1) Consider adopting minimum service levels	No Additional Costs					
AE2) Consider mechanisms to promote consistent service	No Additional Costs					
AE3) Consider additional funding strategies	No Additional Costs					
TOTAL	**$0**	**$0**	**$75,000**	**$0**	**$0**	**$235,000**

Notes:
1. All figures are approximate and subject to update.
2. Costs for curbside recycling in additional urban areas and collection containers at solid waste facilities are highly contingent on details of the chosen approach. Insufficient information is currently available to accurately determine these costs.
3. Cost of property depends on size, location, and timing. Insufficient information is currently available to accurately determine cost.
4. Expansion of THTS to enable hauling of waste to CLF will need to begin in 2025. The budget is outside the timeframe of this Plan, but would include equipment and construction costs that would be spread over several years beginning in 2025. Estimated cost is $4,647,000 (Updated from the 2010 Plan Appendix E estimated cost of $4,027,000 in 2009 to 2015 dollars).
5. Cost information is unknown at this time.
6. Contingent upon funding.
7. Pending compliance with WSDA requirements.

14.5 SIX-YEAR IMPLEMENTATION SCHEDULE

The proposed implementation schedule and primary responsibility is shown in Table 14.2. The SWAC will review and comment on proposed resolutions and ordinances prior to their adoption.

Table 14.2 Six-Year Implementation Schedule

Recommendation	Implementation Responsibility	Implementation Year					
		2017	*2018*	*2019*	*2020*	*2021*	*2022*
3. Promotion and Education							
PE1) Increase promotion and education in stakeholder cities	Yakima County	Ongoing					
PE2) Coordinate education efforts with new programs	Yakima County	Ongoing					
PE3) Continue to engage media	Yakima County	Ongoing					
4. Waste Reduction and Recycling							
WRR1) Adopt and maintain list of designated materials	Yakima County	Ongoing					
WRR2) Support recycling at public events	Yakima County	Ongoing					
WRR3) Adopt service-level ordinance to promote recycling and waste	Yakima County	X	-	-	-	-	-
WRR4) Expand recycling drop off opportunities	Municipalities	Ongoing					
WRR5) Conduct mixed waste processing facility feasibility study	Yakima County	-	-	-	-	-	X
WRR6) Support private sector programs	Yakima County	Ongoing					
WRR7) Increase promotion of existing reuse programs	Yakima County	Ongoing					
WRR8) Continue periodic waste characterization	Yakima County						X

Table 14.2 Six-Year Implementation Schedule

Recommendation	Implementation Responsibility	Implementation Year					
		2017	*2018*	*2019*	*2020*	*2021*	*2022*
5. Organics							
O1) Continue program as is in 'pest free' area	Yakima County	Ongoing					
O2) Comply with WSDA apple maggot quarantine requirements	Yakima County	Ongoing					
O3) Consider options within apple maggot quarantine area	Yakima County	X	-	-	-	-	-
O4) Explore other options if needed, including Yakima County owned compost facility	Yakima County	-	-	X	-	-	-
6. Solid Waste Collection							
SWC1) Require waste routed through Yakima County facilities	Yakima County	Ongoing					
SWC2) Review collection contracts	Yakima County	Ongoing					
SWC3) Require space in new development	Yakima County	Ongoing					
7. Transfer System							
TS1) Purchase or option property	Yakima County	Ongoing					
TS2) Expand transfer station at THLF[1]	Yakima County	-	-	-	-	-	X
TS3) Evaluate LVTS Utilization	Yakima County	-	X	-	-	-	-
TS4) Consider detailed study of LVTS	Yakima County	-	-	X	-	-	-
8. Disposal							
D1) Maintain option to preserve capacity at THLF	Yakima County	Ongoing					
D2) Purchase or option property	Yakima County	Ongoing					

Table 14.2 Six-Year Implementation Schedule

Recommendation	Implementation Responsibility	Implementation Year					
		2017	2018	2019	2020	2021	2022
D3) Consider LFG to Energy in future	Yakima County	Ongoing					
9. Construction, Demolition and Land Clearing Debris and Building Materials							
C&D1) Promote proper management of C&D waste	Yakima County	Ongoing					
C&D2) Partner with private organizations	Yakima County, Private Orgs	X	-	-	-	-	-
10. Special Wastes							
SW1) Cooperative effort for special wastes	Yakima County, Yakima Health District, Ecology	Ongoing					
SW2) Update the Solid Waste Policies and Procedures	Yakima County	Ongoing					
SW3) Monitor guidance regarding pharmaceutical waste	Yakima County, Ecology	Ongoing					
11. Disaster Debris Management							
DD1) Coordinate with Office of Emergency Management and Emergency Management Office	Yakima County	Ongoing					
DD2) Develop a disaster debris plan	Yakima County	Ongoing					
DD3) Reserve landfill airspace	Yakima County	Ongoing					
12. Moderate Risk Waste							
MRW1) Continue promotion and education coordination	Yakima County	Ongoing					
MRW2) Technical assistance by Ecology	Yakima County	Ongoing					
MRW3) Update MRW plan with solid waste plan	Yakima County	-	-	-	-	-	X

Table 14.2 Six-Year Implementation Schedule

Recommendation	Implementation Responsibility	Implementation Year					
		2017	*2018*	*2019*	*2020*	*2021*	*2022*
13. Administration and Enforcement							
AE1) Consider adopting minimum service levels	Yakima County	X	-	-	-	-	-
AE2) Consider mechanisms to promote consistent service	Yakima County	-	-	-	-	X	-
AE3) Consider additional funding strategies	Yakima County	Ongoing					

Notes:
1. Expansion of THTS to enable hauling of waste to CLF will need to begin in 2025. The implementation is outside the timeframe of this Plan, but should be reviewed in 2022.

14.6 TWENTY-YEAR IMPLEMENTATION PROGRAM

Solid waste management in Yakima County will continue to evolve based on changes in population, demographics, the local, state, and national economy, regulations, and advancements in waste handling and recycling. Fortunately, Yakima County's current solid waste management system is functioning effectively. Yakima County operation of two landfills forms the foundation of the system, giving it stability and local control.

The current process of solid waste rate reviews and adjustments provides adequate funding for solid waste programs and facilities. If in the future it becomes advisable to seek additional sources of funding, Chapter 13 provides a list of potential funding sources.

14.7 PROCEDURES FOR AMENDING THE PLAN

The Solid Waste Management-Reduction and Recycling Act (Chapter 70.95 RCW) requires local governments to maintain their solid waste plans in current condition. Plans must be reviewed and revised, if necessary, at least every five years. This Plan should be reviewed in 2021. Before that time, the Plan can be kept in current condition through amendments. An "amendment" is defined as a simpler process than a revision. If there is a significant change in the solid waste system, however, a revision may be necessary before the five-year period is done.

Changes in the Plan may be initiated by Yakima County, working with the SWAC to develop and review proposed changes, or by outside parties. For the latter, individuals or organizations wishing to propose plan amendments before the scheduled review must petition Yakima County's Solid Waste Manager in writing. The petition should describe

the proposed amendment, its specific objectives, and explain why immediate action is needed prior to the next scheduled review. The Solid Waste Manager will investigate the basis for the petition and prepare a recommendation for the Director of the Public Services Department.

If the Public Services Director decides that the petition warrants further consideration, the petition will be referred to the SWAC for review and recommendation. The Solid Waste Manager will draft the proposed amendment together with the SWAC. Whether the proposed amendment has been initiated by Yakima County or an outside party, the proposed amendment must be submitted to the legislative bodies of all participating jurisdictions and the Department of Ecology for review and comment. Adoption of the proposed amendment will require the concurrence of all affected jurisdictions.

The Public Services Director may develop reasonable rules for submitting and processing proposed plan amendments, and may establish reasonable fees to investigate and process petitions. All administrative rulings of the Director may be appealed to the Board of County Commissioners.

Minor changes may occur in the solid waste management system, whether due to internal decisions or external factors. These can be adopted without going through a formal amendment process. If there is uncertainty about whether or not a change is "minor," it should be discussed by the SWAC and a decision made based on the consensus of that committee.

Implicit in the development and adoption of this Plan is the understanding that in the future, the County may need to take emergency action for various reasons, and that these actions can be undertaken without the need to amend this Plan beforehand. In that case, Yakima County staff will endeavor to inform the SWAC and other key stakeholders as soon as feasibly possible, but not necessarily before new actions are implemented. If the emergency results in permanent and significant changes to the Yakima County solid waste system, an amendment to this Plan will be prepared in a timely fashion. If, however, the emergency actions are only undertaken on a temporary or short-term basis, an amendment may not be considered necessary. Any questions about what actions may be considered "temporary" or "significant" should be brought to the SWAC for their advice.

Similar to the allowance for emergency action discussed above, Yakima County will need to make operational decisions and expenditures to comply with future regulatory changes and update permit requirements as applicable. Plan update and coordination with the SWAC will not be required or initiated for these future actions, as they are considered operational activities.

Appendix A – Yakima County SWAC Bylaws and Resolution of Appointment

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BOARD OF YAKIMA COUNTY COMMISSIONERS

IN THE MATTER OF RE-ESTABLISHING THE YAKIMA COUNTY SOLID WASTE ADVISORY COMMITTEE AND ADOPTING COMMITTEE BY-LAWS	))))	**RESOLUTION 102-2016**

WHEREAS, it is the intention of the Board of County Commissioners of Yakima County, Washington, to re-establish a Solid Waste Advisory Committee as required by RCW 70.95.165 and to rescind all previous resolutions relating to the Solid Waste Advisory Committee; and,

WHEREAS, the Solid Waste Advisory Committee shall be re-established to assist the Board of County Commissioners of Yakima County, Washington, in the development of programs and policies concerning solid waste handling and disposal, in the preparation of solid waste management plans and by reviewing and commenting on proposed rules, policies or ordinances relating to solid waste prior to adoption in accordance with the attached by-laws and organizational structure; now, therefore,

BE IT HEREBY RESOLVED by the Board of County Commissioners of Yakima County, Washington, that the Yakima County Solid Waste Advisory Committee is established, and the attached by-laws are adopted for the aforesaid Solid Waste Advisory Committee.

DONE this 15th day of March, 2016

SEAL OF THE BOARD OF YAKIMA COUNTY COMMISSIONERS STATE OF WASHINGTON

Attest: Tiera L. Girard
Clerk of the Board

Michael D. Leita, Chairman

Kevin J. Bouchey, Commissioner

J. Rand Elliott, Commissioner

Constituting the Board of County Commissioners for Yakima County, Washington

YAKIMA COUNTY
SOLID WASTE ADVISORY COMMITTEE
BY-LAWS
Adopted by Resolution No. 102-2016

I. ORGANIZATION – COMPOSITION AND PURPOSE

The Yakima County Solid Waste Advisory Committee (SWAC) shall consist of up to thirteen (13) members appointed by the Board of Yakima County Commissioners and any number of ex-officio members. The SWAC shall assist the Yakima County Board of Commissioners in the development of programs and policies concerning solid waste handling and disposal, in the preparation of solid waste management plans and by reviewing and commenting on proposed rules, policies or ordinances relating to solid waste prior to their adoption.

II. OFFICERS/MEMBERSHIP

A. **Members** – The SWAC shall be composed of thirteen (13) members, each having one vote. Membership is as follows:

1. Yakima County Board of Commissioners (1)
2. City of Yakima (1)
3. Two Cities with Population exceeding 5,000 (2)
4. Three Cities with Population under 5,000 (3)
5. Yakima Valley Conference of Governments (1)
6. Business and Industry Representative (1)
7. Waste Industry Representative (1)
8. Recycling Industry Representative (1)
9. Agriculture Industry Representative (1)

B. **Ex-Officio Members** – The Yakima County Board of Commissioners may appoint non-voting ex-officio members to the SWAC.

C. **Appointments** – Members shall be appointed by the Board of County Commissioners.

D. **Terms** – Members shall serve a term of two (2) years commencing from the appointment date. Members may be reappointed to serve consecutive terms. Reappointment shall be subject to confirmation by the Yakima County Board of Commissioners.

E. **Chair** – The initial Chairperson shall be appointed for a two (2) year term by the Board of County Commissioners. Subsequent chairpersons shall be elected by the SWAC sitting in regular, open public meetings. The Chair will preside over committee meetings and coordinate development of the agenda with the Yakima

County Public Services – Solid Waste Division Manager. The Chair will sign all correspondence originated by the SWAC on behalf thereof.

F. **Vice Chair** – A majority of the SWAC shall elect one of its members as Vice Chair. The term of the Vice Chair shall be for two (2) years. The Vice Chair will preside over SWAC meetings in the absence of the Chair.

G. **Secretary** – The Yakima County Public Services – Solid Waste Division Manager, or designate, shall act as Secretary to the SWAC.

H. **Attendance** – A SWAC member who accrues three (3) consecutive, unexcused absences from regular meetings may be removed from the SWAC by the Board of County Commissioners with the concurrence of two-thirds majority of the SWAC members.

III. MEETINGS

A. **Regular Meetings** – Meetings of the SWAC shall be called when necessary by the Chair. It is anticipated that meetings will be held monthly during active review of Solid Waste Management Plan Updates and at a minimum not less than semi-annually during off-planning years. At least fourteen (14) days prior notice shall be given.

B. **Minutes/Agendas** – Minutes of all meetings shall be kept by the Secretary and distributed to the members within three (3) weeks after a meeting. Agendas shall be prepared by the Solid Waste Division staff with input and verbal approval by the Chair and distributed to the SWAC members at least seven (7) days in advance of any regularly scheduled meeting. Meeting minutes will be approved by the SWAC at the next regular meeting.

C. **Public Access** – All regular meetings of the SWAC shall be held in a place that is open and easily accessible to the public. Provision shall be made for public comment at each meeting. Approved meeting minutes shall be available to the public on request. The SWAC is subject to, and will conform with, the provisions of RCW 42.30, the State Open Meeting Act.

D. **Quorum** – A quorum is required to be present before an official, regular meeting of the SWAC can take place. A simple majority of the voting members of the SWAC shall constitute a quorum.

IV. RECOMMENDATIONS

The role and purpose of the SWAC shall be to advise and make recommendation to the Yakima County Board of Commissioners on matters within their scope and charge as provided for in SWAC By-Laws. Written reports, recommendations and correspondence submitted to the Yakima County Board of Commissioners shall be forwarded on behalf of a majority of the members over the signature of the Chair. Minority reports, if any, shall be attached to, and forwarded with such reports, recommendations or correspondence without comment by the Chair.

V. WAIVER OF RULES

Any of the above rules or procedures may be waived by a majority vote of the quorum provided further that the reason therefore be included in each motion for waiver.

VI. AMENDMENT OF BYLAWS

Any of the By-Laws may be amended or repealed, and new By-Laws may be adopted, by two-thirds majority vote of the quorum and approval by the Yakima County Board of Commissioners. Prior notice of thirty (30) days shall be given to the SWAC before undertaking amendatory action.

DONE this 15th day of March, 2016

SEAL OF THE BOARD OF YAKIMA COUNTY COMMISSIONERS STATE OF WASHINGTON

Michael D. Leita, Chairman

Kevin J. Bouchey, Commissioner

J. Rand Elliott, Commissioner

Constituting the Board of County Commissioners for Yakima County, Washington

Attest: Tiera L. Girard
Clerk of the Board

BOARD OF YAKIMA COUNTY COMMISSIONERS

IN THE MATTER OF APPOINTING MEMBERS TO THE YAKIMA COUNTY SOLID WASTE MANAGEMENT ADVISORY COMMITTEE

RESOLUTION 103-2016

WHEREAS, the Board of County Commissioners of Yakima County, Washington, adopted Resolution 102-2016 re-establishing the Yakima County Solid Waste Advisory Committee and adopting the by-laws for the aforesaid Solid Waste Advisory Committee; and,

WHEREAS, the by-laws for the Solid Waste Advisory Committee require the Board of County Commissioners of Yakima County, Washington, to appoint members to the Solid Waste Advisory Committee; now, therefore,

BE IT HEREBY RESOLVED by the Board of County Commissioners of Yakima County, Washington that the voting members be, and hereby are, appointed to the Yakima County Solid Waste Advisory Committee as follows:

Agency	Member	Alternate
Yakima County Board of Commissioners	Michael Leita	
City of Yakima	Bill Lover	
City of Sunnyside	Francisco Guerro	
City of Grandview	Bill Moore	Cus Arteaga
City of Zillah	Gary Clark	
City of Toppenish	Lance Hoyt	Art Kroes
City of Selah	Sherry Raymond	
Yakima Valley Conference of Governments	Maureen Adkinson	
Business and Industry	Ryan Rodruck	
Waste Industry	Keith Kovalenko	
Recycling Industry	T. J. Valler	
Agricultural Industry	Bob Groeneweg	

BE IT FURTHER RESOLVED by the Board of County Commissioners of Yakima County, Washington, that the ex-officio non-voting members be, and hereby are, appointed to the Yakima County Solid Waste Advisory Committee as follows:

Agency	Member	Alternate
Yakima Health District	Ryan Ibach	Ted Silvestri

DONE this 15th day of March, 2016

SEAL OF THE BOARD OF YAKIMA COUNTY COMMISSIONERS STATE OF WASHINGTON

Attest: Tiera L. Girard
Clerk of the Board

Michael D. Leita, Chairman

Kevin J. Bouchey, Commissioner

J. Rand Elliott, Commissioner
Constituting the Board of County Commissioners for Yakima County, Washington

Appendix B – Solid Waste Interlocal Agreements

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APPENDIX B INTERLOCAL AGREEMENT

INTRODUCTION

All of the cities and towns in Yakima County have executed interlocal agreements with Yakima County for solid waste management purposes. To avoid wasting paper and other resources (since all of the agreements are identical except for the signatures), this appendix shows only one of those agreements. Copies of the other agreements can be viewed at the Yakima County Solid Waste Division's offices.

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SOLID WASTE INTERLOCAL AGREEMENT

This Agreement is entered into between Yakima County, a political subdivision of the State of Washington and City of Grandview, a municipal corporation of the State of Washington, hereinafter referred to as "County" and "City" respectively.

PREAMBLE

This Agreement is entered into pursuant to Chapter 39.34 RCW for the purpose of cooperative management of solid waste in Yakima County. It is the intent of the parties to work cooperatively in establishing a Solid Waste Management Plan pursuant to Chapter 70.95 and with emphasis on the established priorities for solid waste management of waste reduction; waste recycling; energy recovery, incineration, or landfilling of separated waste; and landfilling of mixed wastes. The parties acknowledge their intent to meet or surpass applicable environmental standards with regard to the solid waste system.

I. DEFINITIONS

For purposes of this Agreement the following definitions shall apply:

"Landfill" means a disposal facility or part of a facility at which waste is placed in or on land and which is not a land treatment facility, as that term is defined in and may be modified by amendment to RCW 70.95.030.

"Moderate Risk Waste" means (a) any waste that exhibits any of the characteristics of hazardous waste but is exempt from regulation under this chapter solely because the waste is generated in quantities below the threshold for regulation and (b) any household wastes which are generated from the disposal of substances identified by the department as hazardous household substances, as that term is defined in and may be modified by amendment to RCW 70.105.010.

"Solid Waste" means all putrescible and nonputrescible solid and semi-solid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles or parts thereof, and discarded commodities, but shall not include dangerous, hazardous or extremely hazardous waste, as that term is defined in and may be modified by amendment to RCW 70.105.010.

"Solid Waste Advisory Committee" or SWAC means a group formed pursuant to RCW 70.95.040 — .070 and comprised of representatives of unincorporated Yakima County, incorporated cities and towns, industry and businesses appointed by the Board of Yakima County Commissioners.

"Solid Waste Management Plan" means the coordinated comprehensive plan for solid waste management and updates as required by RCW 70.95.080.

"System" means all facilities for solid waste handling owned, operated or contracted for by the County, and all administrative activities related thereto.

"Waste Recycling" means reusing waste materials and extracting valuable materials from a waste stream.

"Waste Reduction" means reducing the amount or type of waste generated but shall not include reduction through energy recovery or incineration.

II. PURPOSE

The purpose of this Agreement is to establish the respective responsibility of the parties in a solid waste management system which includes, but is not limited to: planning, waste reduction, recycling, and disposal of mixed municipal solid waste, industrial waste, demolition debris and all other waste defined as Solid Waste in RCW 70.95.030, and as Moderate Risk Waste in RCW 70.105.010.

III. TERM

This Agreement shall become effective on date of signing by the City and remain in effect for a period of 20 years.

IV. APPROVAL AND FILING

Pursuant to RCW 39.34.050, this Agreement shall be submitted to the Washington State Department of Ecology for its approval as to all matters within its jurisdiction. This Agreement shall be filed with the City Clerk, the Clerk of the Board of Yakima County Commissioners, the Yakima County Auditor, and the Secretary of State of the State of Washington.

V. REVIEW AND RENEGOTIATION

5.1 Either party may request review and/or renegotiation of any provision of this Agreement other than those specified in Section 5.2 below during the six-month period immediately preceding the fifth anniversary of the effective date of this Agreement. Such request must be in writing and must specify the provision(s) of the Agreement for which review/ renegotiation is requested. Review and/or renegotiation pursuant to such written request shall be initiated within thirty days of said receipt.

5.2 Review and/or renegotiation shall not include the issues of System rates and charges, waste stream (flow) control or diversion unless agreed to in writing by both parties.

5.3 Notwithstanding any other provision in this paragraph to the contrary, the parties may, pursuant to mutual agreement, modify or amend any provision of this Agreement at any time during the term of said Agreement.

VI. WITHDRAWAL

In the event, following unsuccessful discussion between or among the parties, that a party that has requested review and/or renegotiation of any provision of this Agreement pursuant to Section V determines it is in that party's best interest to terminate its participation in and withdraw from

the Agreement, for any reason, then that party may withdraw from the remaining term of the Agreement after final satisfaction and completion of the following two conditions: first, that the withdrawing party must have prepared and gained approval from the Department of Ecology of its own Solid Waste Management Plan pursuant to RCW 70.95 and related provisions, and including each of the elements identified in Section 9.3 of this Agreement; and second, that the withdrawing party must enter into a written agreement with the County that the withdrawing party will remain responsible to the County for, and will continue to pay to the County when due, the withdrawing party's share of System costs, capital and operating, during the remaining term of this Agreement.

VII. GENERAL OBLIGATIONS OF THE PARTIES

7.1 YAKIMA COUNTY

a. Management. Yakima County shall (1) provide county-wide solid waste management services for waste generated and collected within jurisdictions which are parties to this Agreement and (2) designate disposal facilities for all Solid Waste and Moderate Risk Waste generated and/or collected within the corporate limits of the City.

b. Planning. Yakima County shall serve as the planning authority within Yakima County for Solid Waste and Moderate Risk Waste, but shall not be responsible for planning for hazardous or dangerous waste or any other planning responsibility that is specifically delegated by State or Federal statute.

c. Operation. Yakima County, directly or by its designee, shall be the operating authority for County transfer, processing and disposal facilities (including public landfills, waste reduction or recycling facilities and energy resource recovery facilities) and shall have closure and post-closure responsibilities for landfills which are operated by Yakima County.

d. Collection Service. Yakima County shall not provide solid waste collection services within the corporate limits of the City, unless permitted by law and agreed to by both parties.

e. Support and Assistance. Yakima County shall provide limited support and technical assistance to the City if the City seeks to establish a waste reduction and recycling program compatible with the County waste reduction and recycling plan. The County may develop educational materials related to waste reduction and recycling, Moderate Risk Waste, and strategies for maximizing the usefulness of the materials and will make any such materials available to the City for its use.

f. Facilities and Services. All personal and real property acquired by Yakima County for solid waste management system purposes shall be the property of Yakima County.

7.2 CITY

a. Collection. The City shall be responsible for solid waste collection within the City's corporate limits.

b. Disposal. The City shall (1) designate the System for the disposal of all Solid Waste generated and/or collected within the City and (2) authorize the County to designate disposal facilities for the disposal of all Solid Waste including Moderate Risk Wastes, generated or collected within the corporate limits of the City, except for Solid Waste which is eliminated through Waste Reduction or Waste Recycling activities consistent with the Solid Waste Management Plan. No Solid Waste generated or collected within the City may be diverted from the System without County approval.

c. Compliance. All waste generated or collected from within the corporate limits of the City which is delivered to the System for disposal shall be in compliance with RCW 70.95 and all other federal, state and local environmental health laws, rules or regulations.

VIII. COUNTY SHALL SET DISPOSAL RATES AND OPERATING RULES FOR DISPOSAL

In establishing or amending disposal rates for System users, the County may adopt and amend by resolution rates necessary to recover all costs of operating the System, including without limitation the costs of waste planning, handling, processing, disposal, defense and payment of claims, capital improvements, operational improvements, and the closure and post-closure of landfills which are or were operated by Yakima County or for which the County is responsible. The SWAC will provide comments or recommendations to the County in considering system or rate modifications.

IX. SOLID WASTE MANAGEMENT PLAN

9.1 Yakima County is designated to prepare the Solid Waste Management Plan (SWMP) and updates, including the incorporated areas of the County pursuant to RCW 70.95.080(3).

9.2 The Solid Waste Management Plan will promote waste reduction and recycling goals that meet or exceed the Washington State Solid Waste Management priorities pursuant to Chapter 70.95 RCW.

9.3 The Solid Waste Management Plan will be prepared in accordance with Chapter 70.95 RCW and solid waste planning guidelines developed by the Department of Ecology. The plan shall include, but not be limited to:

a. Descriptions of and policies regarding management practices and facilities required for handling all waste types;

b. Schedules and responsibilities for implementing policies;

c. Policies concerning waste reduction, recycling, energy and resource recovery, collection, transfer, long-haul transport, disposal, enforcement and administration.

d. The designation of disposal site(s) for all Solid Waste collected within the incorporated and unincorporated areas of the County.

e. Capital facilities and infrastructure element.

9.4 The cost of preparation by Yakima County of the Solid Waste Management Plan will be considered a cost of the System and financed out of disposal rates.

X. UNCONTROLLABLE CIRCUMSTANCES

The parties are not liable for failure to perform pursuant to the terms of this Agreement when failure to perform was due to an Uncontrollable Circumstance. "Uncontrollable Circumstance" means any act, event or condition that has had or may reasonably be expected to have a material adverse effect on the rights or obligations of a party to this Agreement, if that act, event or condition is beyond the reasonable control of the party relying thereon as justification for not performing an obligation or complying with any condition required of that party under this Agreement.

Those acts, events or conditions are the following:

a. An act of God, hurricanes, tornadoes, epidemic, landslide, lighting, earthquake, volcano eruption, nuclear radiation, fire or explosion, extreme flooding or other extreme and atypical weather condition, an act of public enemy, war, blockade, insurrection, riot, general arrest, or restraint of government and people, civil disturbance or similar occurrence, that directly affects the System;

b. Failure of any appropriate federal, state or local agency or public or private utility having operational jurisdiction in the County, to provide and maintain and assure the maintenance of any necessary utility;

c. Appeals by third parties of permits necessary for the construction and/or operation of the System;

d. A change in law that specifically affects the processing of Solid Waste or Moderate Risk Waste;

e. Any strike or labor dispute.

XI. COMPLETE AGREEMENT

This Agreement supersedes all prior negotiations, representation and/or agreements between the parties relating to the subject matter of this Agreement and constitutes the entire contract between the parties. Any changes or revisions to this Agreement shall be in writing and authorized by both parties.

XII. WAIVER

No waiver by either party of any term or condition of this Agreement shall be deemed or construed to constitute a waiver of any other term or condition or of any subsequent breach whether of the same or a different provision of this Agreement.

XIII. THIRD PARTY BENEFICIARY

This Agreement is not entered into with the intent that it shall benefit any other entity or person except those expressly described herein, and no other such person or entity shall be entitled to be treated as a third party beneficiary of this Agreement.

XIV. SEVERABILITY AND VENUE

If any of the provisions contained in this Agreement are held illegal, invalid or unenforceable, the remaining provisions shall remain in full force and effect. Any action, suit or judicial proceeding for the enforcement of this Agreement shall be brought in Superior Court of the State of Washington in Yakima County, Washington.

XV. NOTICE

IN WITNESS WHEREOF this Agreement has been executed by each party on the date set forth below:

CITY:

MAYOR

DATE: 12/10/02

BOARD OF YAKIMA COUNTY COMMISSIONERS:

Ronald F. Gamache, ~~Chairman~~

Jesse S. Palacios, County Commissioner CHAIR

James M. Lewis, County Commissioner

ATTEST:

Clerk

ATTEST: Carla M. Ward

Carla M. Ward, Clerk of the Board

APPROVED AS TO FORM AND LEGALITY:

City Attorney

DATE: 12/10/02

APPROVED AS TO FORM:

Yakima County Prosecuting Attorney

SEAL OF THE BOARD OF YAKIMA COUNTY COMMISSIONERS STATE OF WASHINGTON

Appendix C – Resolutions of Adoption

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Resolutions of Adoption are not yet available. These will be included once the Cities and Yakima County adopt the final version of the Solid Waste and Moderate Risk Waste Plan

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Appendix D – WUTC Service Area Maps

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19E 20E 21E 22E 23E 24E 25E

11N 10E 9N 8N

Yakima

Benton

U. S. Department Of Energy
Hanford Site

Wapato

Toppenish

Zillah

Granger

Sunnyside

Grandview

Mabton

Prosser

Yakama IR

CLARK
GILBERT
BROOKS
INDIAN
OLDENWAY
TRACK
EVERGREEN
BAILEY
CHEYNE
HIGHLAND
HOUGHTON
SMITH
ROZA
3RD
LUCY
ZILLAH
DIVISION
BLAINE
KIRKS
GURLEY
BEAM
DEKKER
ARMS
HUDSON
CURLEW
FORT
MCKINLEY
LARUE
THOMAS
YOST
ROBBINS
MEYERS
PARTON
JENSEN
BECKER
US HWY 97
BIA 47
STATE HWY 223
GAP
EMERALD
COOK
WAPENISH
DRAINBANK
BIA 96
BIA 20
TULE
PLANK
SATUS
LAKE
FOSTER
BIA 148
BIA 23
SATUS
NEWLAND
SPEEDIS
HAPPY
BIA 43
COLWASH
PIERRE
PASCO
WINNIER
VARNER
TOMO PIKE
HOLT
LOONEY
MABTON
BIA 3
GLADE
PHILLIPS
TWP
WARD GAP
PRICE
MAIRES
CHAFFEE
WILLIAMSON
PHIPPS
INDEPENDENCE
REEVES
OUTLOOK
SCOON
VAN BELLE
MAPLE GROVE
WASHOUT
L I
SLI
HOLMASON
SHELLER
ALLEN
9TH
6TH
YAKIMA VALLEY
US GRAPE
RAY
BETHANY
FACTORY
MOHAR
WANETA
RANDEL
TEAR
MURRAY
STOVER
MIDVALE
HORNBY
FORSELL
ELM
HOLADAY
BELMA
CHARVET
MT VIEW
CANYON
FARM
BUS
STATE ROUTE 241
STATE HWY 241
YAKIMA CO
BENTON CO
BENNETT
CROOKS
PEARL
FRANKS
ROTH
ROTHROCK
ANDERSON
MCCLURE
SNIPES
CASE
MISSIMER
WILGUS
EVANS
FISK
HANKS
MCCREADIE
GAP
HINZERLING
CROSBY
CROW
KING TULL
BUNN
GOOD
JOHNSON
OLD INLAND EMPIRE
HIGHWAY 12
HIGHWAY 22
BYRON
SR 22
SR 221
Yakima River
US HWY 12
STATE HWY 22
24
19
36
30
25

UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON STATE SOLID WASTE CERTIFICATE AUTHORITY

October 2006

Basin Disposal of Yakima, LLC

Certificate: G-000045

WASHINGTON UTC UTILITIES AND TRANSPORTATION COMMISSION

For more information contact:
Rey Dejos
Cartographic Tech
(360) 664-1248

Legend

GA-79471 TG-061259 Effective: 10-20-2006

PID84 Garbage and Refuse Collection Service

Cities
County Lines
Interstate Highway
Local Roads
Rail Lines
State Highway
Township Lines
U.S. Highway
Water (River, Creek)
National Forest
National Park Service
Military Installations
Native American Lands
Water (Ocean, Lake)

Data used to create this map were generated at a scale of 1:24,000. Use of this information for purposes requiring a greater accuracy is not recommended.

N W E S

0 1 2 3 4 5 Miles

Scale 1:170,000

UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON STATE SOLID WASTE CERTIFICATE AUTHORITY

January 2005

Rabance LTD; Rabance Connections International, Inc.
Certificate: G-000012

WASHINGTON UTC UTILITIES AND TRANSPORTATION COMMISSION

For more information contact:
Ray Dejoe
Cartographic Tech.
(360) 664-1246

Legend

Application: GA-79322 Docket No. TG-041942 Effective: 01-01-2005

- PID258, 259, 399, 399, 400, 401, 402, 403, 404, 405 Solid Waste Collection Service
- PID362, 386, 406, 407 Solid Waste - (Excl. Bio Med Waste)
- PID257, 363 Solid Waste - (Excl. BioMed Waste) Commercial Account and Establishment
- PID367, 388 Solid Waste - (Excl. Bio Med) Not required use of Dmp Trk
- PID365, 385, 396, 397 Refuse Collection Service - (Excl. Bio Med Waste)
- PID390 Refuse Collection Service - (Excl. Bio Med Waste) Not required use of Dmp trk
- PID364, 368, 392, 393, 394 Refuse Collection Service - (Excl. Bio Med Waste) Commercial Accts. or Establishment
- PID391, 408, 409 Refuse Collection Service - (Excl. Bio Med Waste) Lumber Brick and other Cast off Materials

Cities
County Lines
Interstate Highway
Local Roads
Rail Lines
State Highway
Township Lines
U.S. Highway
Water (River, Creek)
National Forest
National Park Service
Military Installations
Native American Lands
Water (Ocean, Lake)

Data used to create this map were generated at a scale of 1:24,000. Use of this information for purposes requiring a greater accuracy is not recommended.

Snohomish
King
Kitsap
Pierce
Kittitas
Skykomish
Mukilteo
Snohomish
Mill Creek
Lynnwood
Edmonds
Woodway
Bothell
Shoreline
Kenmore
Monroe
Sultan
Gold Bar
Index
Duvall
Carnation
Redmond
Kirkland
Seattle
Medina
Sammamish
Bellevue
Mercer Island
Issaquah
Snoqualmie
North Bend
Newcastle
Renton
Burien
SeaTac
Kent
Des Moines
Maple Valley
Covington
Black Diamond
Federal Way
Auburn
Ruston
Milton
Pacific
Fife
Tacoma
Sumner
Enumclaw
Puyallup
Bonney Lake
Lakewood
Buckley
Orting
Wilkeson
Carbonado
Leavenworth
Cashmere
Ridge Island

Interstate 5
Interstate 405
US 2
US 97

N W E S
4 0 4 8 Miles
Scale: 1 : 550,000

Map I
Service Areas in WA

Yakima
Skamania
Klickitat
Oregon
Gifford Pinchot National Forest
Yakama IR
Adams Center
Goldendale
Stevenson
North Bonneville
White Salmon
Bingen
Hood River
Willow Creek
Columbia River
Granger
Sunnyside
Mabton
Prosser

N W E S
0 10 20 30 Miles
Scale 1:550,000
Inset: PID401 and 402 Solid Waste (Klickitat, Skamania, and Yakima)

Kittitas
Pierce
Grant
Yakima
Benton
Franklin

George
Ellensburg
Kittitas
Royal City
Mattawa
Naches
Tieton
Selah
Yakima
Moxee
Union Gap
Wapato
Harrah
Zillah
Toppenish
Granger
Sunnyside
Grandview
Mabton
West Richland
Richland
Benton City

t Rainier National Park
Mt. Baker-Snoqualmie National Forest
U. S. Military Reservation Yakima Training Center
U. S. Department Of Energy Hanford Site
Columbia River
Yakama IR
National Forest

90
82
12
97

0 5 10 15 Miles
Scale 1 : 550,000

UTILITIES AND TRANSPORTATION COMMISSION
WASHINGTON STATE SOLID WASTE CERTIFICATE AUTHORITY
June 2006

Yakima Waste Systems, Inc.
Certificate: G-000089

For more information contact:
Rey Dejoe
Cartographic Tech.
(360) 664-1246

Legend
TG-060894 Effective : 06-06-2006
PID119 Solid Waste Collection Service
(This certificate does not authorize the duplication of any service undertaken by the City of Yakima or contracted for by it)

Cities
County Lines
Interstate Highway
Local Roads
Rail Lines
State Highway
Township Lines
U.S. Highway
Water (River, Creek)
National Forest
National Park Service
Military Installations
Native American Lands
Water (Ocean, Lake)

Data used to create this map were generated at a scale of 1:24,000. Use of this information for purposes requiring a greater accuracy is not recommended.

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Appendix E – Economics Analysis of Disposal Options

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Yakima County Solid Waste NPV Comparison

Overall Assumptions

Capital Inflation Rate was based on a 5 year average of 20 City Construction Cost Index as published in the Engineering News Record
O&M Inflation Rate was based on a 5 year average of Consumer Price Index for All Urban Consumers provided By the BLS
Fuel Costs are based on the Energy Information Administration 2015 Annual Energy Outlook, Reference Case for Diesel Fuel less Federal Tax
Discount Factor Estimated based on single A rated municipal bond Yield
Truck and trailer combination is $160,000 (2015$) each
Summary is net present value for disposal through 2044

Status Quo - Install Gas Collection System. Expand Terrace Heights Transfer Station

Gas Collection System in 2017 with a cost of $3,094,043
Terrace Heights Transfer Station Expansion in 2026, at a cost of $4,027,000 in 2009 Dollars
No SVE Construction or Costs

Close ALL Current Landfills and Haul MSW to Roosevelt Regional Landfill

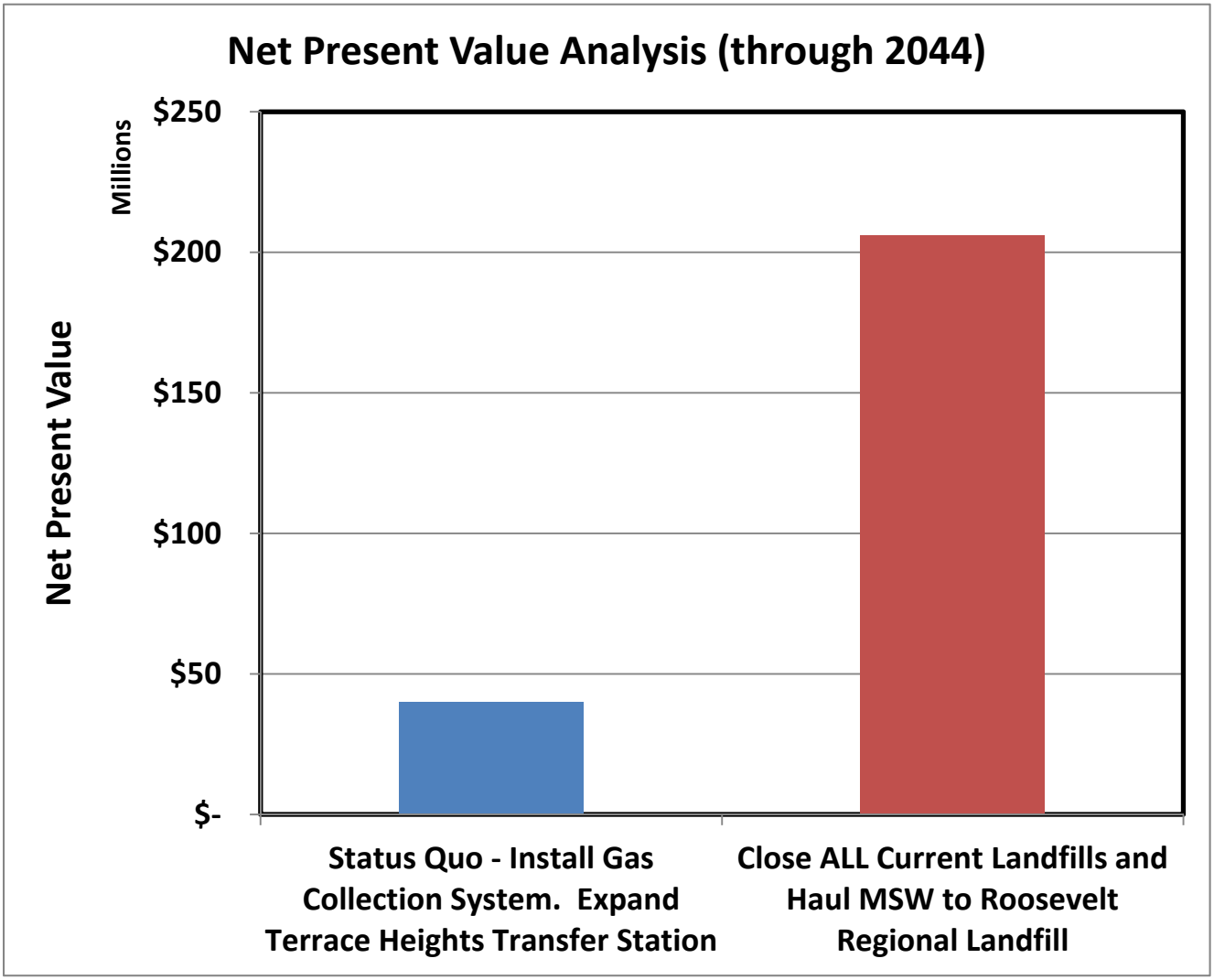
Terrace Heights Transfer Station Expansion in 2017, at a cost of $4,027,000 in 2009 Dollars
Cheyne Transfer Station Expansion in 2017, at a cost of $2,160,000 Plus 15% for Design and permits and $1 m for mobile equipment 2015 Dollars
Trucks and Trailers purchased in 2018, hauling starts in 2019
Disposal at Roosevelt is $20/ton

Detailed Assumptions

O&M Inflation Rate	**1.70%**	5 Year Average of National CPI-U
Capital Inflation Rate	**2.80%**	5 Year Average of 20 City ENR CCI
Discount Rate*	**4.00%**	
Growth Rate of Tonnage	3.0%	(from 2031)
Capacity per Unit	20	tons/unit
Mileage to Cheyne Landfill (one way)	28.0	miles
Trip time to Cheyne Landfille (one way)	45.0	minutes
Mileage to Roosevelt Landfill (one way)	92.0	miles
Trip time to Roosevelt Landfille (one way)	120.0	minutes
Operating time per Day	9.4	hours
Average Fuel Economy	6.5	MPG
Wage paid to Drivers	$ 29.00	$/hour
Truck	140,000	
Trailers $105,000 X 2	210,000	
Current Cost to Purchase Haul Unit Truck 2 Trailers	$ 350,000	$
Annual O&M per Unit (excl. fuel cost)	$ 212	per month/unit
Replacement Funding	$ 4,167	per month/unit (7 year Useful Life Straightline Truck and Trailers)
Round Trips Completed per Day (Cheyne)	6.0	
Tonnage Hauled per Day per Unit (Cheyne)	120.0	
% of Total Tonnage Hauled (Cheyne)	70%	
Round Trips Completed per Day (Roosevelt)	2.0	
Tonnage Hauled per Day per Unit (Roosevelt)	40.0	
% of Total Tonnage Hauled (Cheyne)	100%	

*Discount Rates Based on Yeilds		Yakima County was rated A1 by Moody's for 2010 issues
30 Year Treasury Note	3.06%	http://www.bloomberg.com/markets/rates-bonds/government-bonds/us
A Rated 30 year Municipal bonds	3.95%	https://www.fmsbonds.com/market-yields/
A Rated 20 year Municipal bonds	3.65%	
A Rated 10 year Municipal bonds	2.90%	

Option	Net Present Value
Status Quo - Install Gas Collection System. Expand Terrace Heights Transfer Station	$ 39,784,273
Close ALL Current Landfills and Haul MSW to Roosevelt Regional Landfill	$ 205,929,026



Status Quo - Install Gas Collection System. Expand Terrace Heights Transfer Station

Cost Item in 2015 Dollars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Gas Collection System Capital Cost			3,094,043							
Gas Collection System O&M Cost			76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560
Terrace Heights Transfer Station Expansion										
Purchase New Trucks	0	0	0	0	0	0	0	0	0	0
Hauling O&M Costs	0	0	0	0	0	0	0	0	0	0
Excavation for Cheyne Expansion		1,000,000			1,000,000	1,000,000	0	1,000,000	1,000,000	0
Total Costs - 2015 $'s	**$0**	**$1,000,000**	**$3,170,603**	**$76,560**	**$1,076,560**	**$1,076,560**	**$76,560**	**$1,076,560**	**$1,076,560**	**$76,560**

Cost Item in Inflated Dollars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Gas Collection System Capital Cost	0	0	3,269,735	0	0	0	0	0	0	0
Gas Collection System O&M Cost	0	0	79,185	80,531	81,900	83,293	84,709	86,149	87,613	89,103
Terrace Heights Transfer Station Expansion	0	0	0	0	0	0	0	0	0	0
Purchase New Trucks	0	0	0	0	0	0	0	0	0	0
Hauling O&M Costs	0	0	0	0	0	0	0	0	0	0
Excavation for Cheyne Expansion	0	1,017,000	0	0	1,069,754	1,087,940	0	1,125,244	1,144,373	0
Total Costs - Inflated $'s	**$0**	**$1,017,000**	**$3,348,920**	**$80,531**	**$1,151,654**	**$1,171,232**	**$84,709**	**$1,211,393**	**$1,231,986**	**$89,103**

Present Value Analysis	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total PV in 2015 $	$0	$977,885	$3,096,265	$71,592	$984,439	$962,667	$66,946	$920,559	$900,200	$62,602
Total NPV as of 2015	**$39,784,273**									

Cost Item in 2015 Dollars	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Close ALL Current Landfills and Haul MSW to Roosevelt Regional Landfill										
Cost Item in 2015 Dollars	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Transfer Station Expansion for Terrace Heights			4,626,242							
Transfer Station Expansion for Cheyne			3,484,000							
Purchase New Trucks	0	0	0	5,950,000	0	350,000	0	0	0	0
Hauling O&M Costs	0	0	0	1,089,258	3,690,396	3,926,093	3,948,560	3,980,915	4,005,150	4,030,014
Contract Cost*				4,991,294	5,065,238	5,139,181	5,187,683	5,236,184	5,284,686	5,333,188
Total Costs - 2015 $'s	**$0**	**$0**	**$8,110,242**	**$12,030,552**	**$8,755,634**	**$9,415,274**	**$9,136,242**	**$9,217,099**	**$9,289,836**	**$9,363,202**
Cost Item in Inflated Dollars	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Transfer Station Expansion for Terrace Heights	0	0	4,888,939	0	0	0	0	0	0	0
Transfer Station Expansion for Cheyne	0	0	3,681,835	0	0	0	0	0	0	0
Purchase New Trucks	0	0	0	6,258,638	0	380,779	0	0	0	0
Hauling O&M Costs	0	0	0	1,145,760	3,947,815	4,271,352	4,368,823	4,479,500	4,583,386	4,690,241
Contract Cost*	0	0	0	5,250,202	5,418,557	5,591,118	5,739,831	5,891,985	6,047,652	6,206,910
Total Costs - Inflated $'s	**0**	**0**	**8,570,774**	**12,654,600**	**9,366,372**	**10,243,249**	**10,108,654**	**10,371,485**	**10,631,038**	**10,897,151**
Present Value Analysis	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Total PV in 2015 $	$0	$0	$7,924,162	$11,249,893	$8,006,414	$8,419,204	$7,989,016	$7,881,476	$7,767,995	$7,656,194
Total NPV as of 2015	**$205,929,026**									

* Assumes a contract cost of $ 20 per ton.

Status Quo - Install Gas Collection System. Expand T

Cost Item in 2015 Dollars	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gas Collection System Capital Cost										
Gas Collection System O&M Cost	76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560
Terrace Heights Transfer Station Expansion		4,626,242								
Purchase New Trucks	0	0	1,400,000	0	0	0	350,000	0	0	0
Hauling O&M Costs	0	0	887,158	893,019	898,634	904,265	1,138,311	1,146,417	1,155,503	1,164,509
Excavation for Cheyne Expansion	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Costs - 2015 $'s	**$1,076,560**	**$5,702,802**	**$3,363,718**	**$1,969,579**	**$1,975,194**	**$1,980,825**	**$2,564,871**	**$2,222,977**	**$2,232,063**	**$2,241,069**

Cost Item in Inflated Dollars	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Gas Collection System Capital Cost	0	0	0	0	0	0	0	0	0	0
Gas Collection System O&M Cost	90,617	92,158	93,725	95,318	96,938	98,586	100,262	101,967	103,700	105,463
Terrace Heights Transfer Station Expansion	0	5,568,764	0	0	0	0	0	0	0	0
Purchase New Trucks	0	0	1,713,876	0	0	0	458,356	0	0	0
Hauling O&M Costs	0	0	1,086,057	1,111,817	1,137,827	1,164,421	1,490,720	1,526,859	1,565,122	1,604,135
Excavation for Cheyne Expansion	1,183,612	1,203,734	1,224,197	1,245,009	1,266,174	1,287,699	1,309,590	1,331,853	1,354,494	1,377,521
Total Costs - Inflated $'s	**$1,274,230**	**$6,864,656**	**$4,117,855**	**$2,452,143**	**$2,500,939**	**$2,550,706**	**$3,358,929**	**$2,960,678**	**$3,023,316**	**$3,087,119**

Present Value Analysis	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Total PV in 2015 $	$860,824	$4,459,150	$2,572,000	$1,472,694	$1,444,230	$1,416,316	$1,793,359	$1,519,933	$1,492,394	$1,465,278
Total NPV as of 2015										

Cost Item in 2015 Dollars	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Close ALL Current Landfills and Haul MSW to Roosev										
Cost Item in 2015 Dollars	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Transfer Station Expansion for Terrace Heights										
Transfer Station Expansion for Cheyne										
Purchase New Trucks	0	350,000	0	0	0	0	0	350,000	0	0
Hauling O&M Costs	4,056,828	4,310,601	4,340,210	4,370,700	4,399,912	4,429,205	4,462,417	4,732,794	4,772,597	4,812,053
Contract Cost*	5,381,690	5,428,963	5,476,236	5,523,508	5,570,781	5,618,054	5,665,729	5,713,807	5,762,294	5,811,192
Total Costs - 2015 $'s	**$9,438,517**	**$10,089,564**	**$9,816,445**	**$9,894,209**	**$9,970,694**	**$10,047,260**	**$10,128,145**	**$10,796,601**	**$10,534,891**	**$10,623,245**
Cost Item in Inflated Dollars	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Transfer Station Expansion for Terrace Heights	0	0	0	0	0	0	0	0	0	0
Transfer Station Expansion for Cheyne	0	0	0	0	0	0	0	0	0	0
Purchase New Trucks	0	421,307	0	0	0	0	0	466,148	0	0
Hauling O&M Costs	4,801,712	5,188,817	5,313,273	5,441,560	5,571,054	5,703,482	5,843,935	6,303,385	6,464,456	6,628,702
Contract Cost*	6,369,835	6,535,026	6,703,993	6,876,816	7,053,578	7,234,362	7,419,780	7,609,950	7,804,994	8,005,037
Total Costs - Inflated $'s	**11,171,547**	**12,145,150**	**12,017,266**	**12,318,376**	**12,624,632**	**12,937,844**	**13,263,715**	**14,379,483**	**14,269,449**	**14,633,739**
Present Value Analysis	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
Total PV in 2015 $	$7,547,097	$7,889,258	$7,505,949	$7,398,097	$7,290,410	$7,183,926	$7,081,606	$7,382,042	$7,043,801	$6,945,793
Total NPV as of 2015										

Status Quo - Install Gas Collection System. Expand T

Cost Item in 2015 Dollars	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Gas Collection System Capital Cost										
Gas Collection System O&M Cost	76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560	76,560
Terrace Heights Transfer Station Expansion										
Purchase New Trucks	0	0	0	0	0	0	0	0	0	0
Hauling O&M Costs	1,173,534	1,183,048	1,192,487	1,203,265	1,213,558	1,223,377	1,218,871	1,226,314	1,233,758	1,241,201
Excavation for Cheyne Expansion	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Total Costs - 2015 $'s	**$2,250,094**	**$2,259,608**	**$2,269,047**	**$2,279,825**	**$2,290,118**	**$2,299,937**	**$2,295,431**	**$2,302,874**	**$2,310,318**	**$2,317,761**
Cost Item in Inflated Dollars	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
Gas Collection System Capital Cost	0	0	0	0	0	0	0	0	0	0
Gas Collection System O&M Cost	107,256	109,079	110,934	112,819	114,737	116,688	118,672	120,689	122,741	124,827
Terrace Heights Transfer Station Expansion	0	0	0	0	0	0	0	0	0	0
Purchase New Trucks	0	0	0	0	0	0	0	0	0	0
Hauling O&M Costs	1,644,049	1,685,552	1,727,883	1,773,141	1,818,710	1,864,594	1,889,307	1,933,159	1,977,956	2,023,717
Excavation for Cheyne Expansion	1,400,938	1,424,754	1,448,975	1,473,608	1,498,659	1,524,136	1,550,047	1,576,397	1,603,196	1,630,451
Total Costs - Inflated $'s	**$3,152,243**	**$3,219,386**	**$3,287,792**	**$3,359,568**	**$3,432,107**	**$3,505,418**	**$3,558,025**	**$3,630,245**	**$3,703,892**	**$3,778,995**
Present Value Analysis	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
Total PV in 2015 $	$1,438,643	$1,412,775	$1,387,302	$1,363,065	$1,338,939	$1,314,941	$1,283,341	$1,259,029	$1,235,165	$1,211,740
Total NPV as of 2015										

Cost Item in 2015 Dollars	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Close ALL Current Landfills and Haul MSW to Roosev										
Cost Item in 2015 Dollars	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
Transfer Station Expansion for Terrace Heights										
Transfer Station Expansion for Cheyne										
Purchase New Trucks	0	0	0	350,000	0	0	0	0	0	350,000
Hauling O&M Costs	4,851,591	4,893,270	4,934,621	5,230,933	5,278,283	5,323,450	5,302,721	5,336,960	5,371,199	5,662,840
Contract Cost*	5,860,505	5,910,237	5,960,390	6,010,969	6,061,978	6,113,419	6,165,297	6,217,615	6,270,377	6,323,586
Total Costs - 2015 $'s	**$10,712,096**	**$10,803,507**	**$10,895,011**	**$11,591,903**	**$11,340,260**	**$11,436,869**	**$11,468,017**	**$11,554,574**	**$11,641,575**	**$12,336,426**
Cost Item in Inflated Dollars	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
Transfer Station Expansion for Terrace Heights	0	0	0	0	0	0	0	0	0	0
Transfer Station Expansion for Cheyne	0	0	0	0	0	0	0	0	0	0
Purchase New Trucks	0	0	0	515,763	0	0	0	0	0	570,658
Hauling O&M Costs	6,796,780	6,971,708	7,150,144	7,708,344	7,910,346	8,113,663	8,219,464	8,413,170	8,611,086	9,232,980
Contract Cost*	8,210,207	8,420,636	8,636,458	8,857,811	9,084,838	9,317,684	9,556,498	9,801,432	10,052,644	10,310,295
Total Costs - Inflated $'s	**15,006,987**	**15,392,344**	**15,786,601**	**17,081,918**	**16,995,185**	**17,431,347**	**17,775,962**	**18,214,602**	**18,663,730**	**20,113,933**
Present Value Analysis	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**	**2043**	**2044**
Total PV in 2015 $	$6,848,993	$6,754,678	$6,661,242	$6,930,584	$6,630,187	$6,538,791	$6,411,598	$6,317,126	$6,223,933	$6,449,561
Total NPV as of 2015										

Tonnage Projections

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Daily Tonnage to be Hauled [1]	653	663	674	684	694	704	711	717	724	731	737	744	750	757	763	770
Fuel Costs Escelation	1.9%	12.9%	1.8%	0.4%	1.5%	1.6%	1.9%	2.7%	1.9%	2.0%	2.1%	2.0%	2.1%	2.1%	2.0%	1.9%
Estimated Fuel Costs per Gallon (2015$s) [2]	2.69	3.03	3.09	3.10	3.15	3.20	3.26	3.34	3.41	3.48	3.55	3.62	3.70	3.77	3.85	3.92
Fuel Cost per Mile ($/Mile)		0.47	0.47	0.48	0.48	0.49	0.50	0.51	0.52	0.53	0.55	0.56	0.57	0.58	0.59	0.60

Option 1 - Close Terrace Heights Landfill and Truck to Cheyne

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Haul Units Needed	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4	4
Number of New Units Needed	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0
Cost of New Units	0	0	0	0	0	0	0	0	0	0	0	0	1,400,000	0	0	0
Annual Fuel Cost	0	0	0	0	0	0	0	0	0	0	0	0	278,986	284,847	290,462	296,093
Other Annual O&M	0	0	0	0	0	0	0	0	0	0	0	0	10,176	10,176	10,176	10,176
Truck Replacement Funding	0	0	0	0	0	0	0	0	0	0	0	0	200,000	200,000	200,000	200,000
Wages Paid to Drivers	0	0	0	0	0	0	0	0	0	0	0	0	397,996	397,996	397,996	397,996

Option 2 - Close All Landfills and Truck to Roosevelt

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Haul Units Needed	0	0	0	17	17	18	18	18	18	18	18	19	19	19	19	19
Number of New Units Needed	0	0	0	17	0	1	0	0	0	0	0	1	0	0	0	0
Cost of New Units	0	0	0	5,950,000	0	350,000	0	0	0	0	0	350,000	0	0	0	0
Annual Fuel Cost	0	0	0	1,089,258	1,105,665	1,189,319	1,211,786	1,244,141	1,268,376	1,293,240	1,320,054	1,421,784	1,451,393	1,481,883	1,511,095	1,540,388
Other Annual O&M	0	0	0	0	43,248	45,792	45,792	45,792	45,792	45,792	45,792	48,336	48,336	48,336	48,336	48,336
Truck Replacement Funding	0	0	0	0	850,000	900,000	900,000	900,000	900,000	900,000	900,000	950,000	950,000	950,000	950,000	950,000
Wages Paid to Drivers	0	0	0	0	1,691,483	1,790,982	1,790,982	1,790,982	1,790,982	1,790,982	1,790,982	1,890,481	1,890,481	1,890,481	1,890,481	1,890,481

[1] Tonnage was estimated by using the average tonnage per population multiplied by estimated future population
[2] Energy Information Adminstration 2015 Annual Energy Outlook Reference Case was used for the real price per gallon of West Coast ultra low sulfur Diesel Less Federal Fuel Tax of $0.244/gallon

Tonnage Projections

Item	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Daily Tonnage to be Hauled [1]	776	783	789	796	803	810	816	823	830	837	845	852	859	866
Fuel Costs Escelation	2.2%	2.1%	2.4%	2.3%	2.2%	2.3%	2.2%	2.5%	2.3%	2.2%	-1.0%	1.6%	1.6%	1.6%
Estimated Fuel Costs per Gallon (2015$s) [2]	4.01	4.09	4.19	4.29	4.38	4.48	4.58	4.70	4.81	4.91	4.86	4.94	5.02	5.10
Fuel Cost per Mile ($/Mile)	0.62	0.63	0.64	0.66	0.67	0.69	0.70	0.72	0.74	0.76	0.75	0.76	0.77	0.78

Option 1 - Close Terrace Heights Landfill and Truc

Item	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Haul Units Needed	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Number of New Units Needed	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of New Units	350,000	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual Fuel Cost	378,096	386,202	395,288	404,294	413,319	422,833	432,272	443,050	453,343	463,162	458,656	466,099	473,543	480,986
Other Annual O&M	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720	12,720
Truck Replacement Funding	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000	250,000
Wages Paid to Drivers	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495	497,495

Option 2 - Close All Landfills and Truck to Roosev

Item	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Haul Units Needed	19	20	20	20	20	20	20	21	21	21	21	21	21	22
Number of New Units Needed	0	1	0	0	0	0	0	1	0	0	0	0	0	1
Cost of New Units	0	350,000	0	0	0	0	0	350,000	0	0	0	0	0	350,000
Annual Fuel Cost	1,573,600	1,691,934	1,731,737	1,771,193	1,810,731	1,852,410	1,893,761	2,038,030	2,085,380	2,130,547	2,109,818	2,144,057	2,178,296	2,317,894
Other Annual O&M	48,336	50,880	50,880	50,880	50,880	50,880	50,880	53,424	53,424	53,424	53,424	53,424	53,424	55,968
Truck Replacement Funding	950,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	1,100,000
Wages Paid to Drivers	1,890,481	1,989,980	1,989,980	1,989,980	1,989,980	1,989,980	1,989,980	2,089,479	2,089,479	2,089,479	2,089,479	2,089,479	2,089,479	2,188,978

Appendix F – WUTC Cost Assessment Questionnaire

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APPENDIX F - WUTC COST ASSESSMENT QUESTIONNAIRE

INTRODUCTION

By state law (RCW 70.95.090), solid waste management plans are required to include:

> "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 Utilities and Transportation Commission (WUTC or Commission). The Commission shall cooperate with the Washington state association of counties and the association of Washington cities in establishing such guidelines."

The following cost assessment has been prepared in accordance with the guidelines prepared by the WUTC (WUTC 1997). The purpose of this cost assessment is not only to allow an assessment of the impact of proposed activities on current garbage collection and disposal rates, but to allow projections of future rate impacts as well. The WUTC needs this information to review the plan's impacts to the waste haulers that it regulates. For these haulers, WUTC is responsible for setting collection rates and approving proposed rate changes. Hence, WUTC will review the following cost assessment to determine if it provides adequate information for rate-setting purposes, and will advise Yakima County as to the probable collection rate impacts of proposed programs. Consistent with this purpose, the cost assessment focuses primarily on those programs (implemented or recommended) with potential rate impacts.

YAKIMA COUNTY COST ASSESSMENT QUESTIONNAIRE

PREPARED BY Shawn Koorn, HDR

TELEPHONE: (425) 450-6366 (work) / (425) 452-8100 (mobile)

DATE: August 12, 2016

Definitions: The Solid Waste and Moderate Risk Waste Management Plan (Plan) is a long-term strategy covering a twenty year span starting with 2017 as Year 1, Year 3 is 2019, and Year 6 is 2022. Yakima County's fiscal year is the same as the calendar year: January through December. Yakima County worked in conjunction with local governments to develop a county wide comprehensive plan. No other jurisdictions have developed a plan exclusive of Yakima County.

Demographics

The data source for population projections used in the development of the plan is the Washington State Office of Financial Management projections utilizing the "medium" case projection. The base year and the associated populations are detailed in the table

below as well as the assumed percentage increases from the plan years three, six, and ten. The 2015 population of 249,970 was taken from Table 2-1 and utilized as the starting point. This figure was then projected for 2017, 2019, and 2022 by extrapolating the projected population growth.

Year	Plan Year	Yakima County Population	Percentage Change
2017	1	257,551	3.0%
2019	3	265,361	3.0%
2022	6	277,524	4.4%

Waste Stream Generation

The following table details the estimated waste generation and recycling tonnage. Waste generation is estimated at 12.1 pounds per person per day, based on Plan Table 2-2.

Year	Plan Year	Waste Generation (Tons)	MSW Disposed (Tons)	Recycled & Diverted (Tons)	Other Waste (Tons)
2017	1	568,736	246,296	159,246	143,437
2019	3	585,984	253,765	164,076	146,354
2022	6	612,842	265,396	171,596	150,596

Waste Generation Assumptions:

- Figures, except the year, are shown as tons per year (TPY). Projected waste generation figures for 2017 through 2026 are based on the waste generation rate for 2014 (12.1 pounds per person per day) and population forecasts.
- The projected amounts of recycling and diversion, disposed municipal solid waste (MSW), and other wastes assume the same percentage of the total waste generated as in 2015.
- MSW Disposed per person per day is 5.24 pounds or 1,913 pounds per year.
- Other wastes include construction, demolition and land clearing wastes disposed at limited purpose landfills and special wastes.

SYSTEM PROGRAM COMPONENT COSTS

System costs reported in this questionnaire are funded by user fees charged at the scale houses located at Lower Valley Transfer Station (LVTS), and Terrace Heights and Cheyne Landfills for disposal.

Waste Reduction Programs

Existing education and outreach waste reduction programs implemented by Yakima County and detailed in Plan Section 3.3.1:

- School Recycling
- Business Recycling
- Organics Diversion
- Residential Recycling
- Public Event Recycling Education

The costs of providing the waste reduction programs are included within Yakima County's overall Solid Waste Division budget and are funded primarily through tipping fees.

Recycling Programs

Curbside recycling collection services are available in Moxee, Selah, Union Gap, and Yakima, and these programs collect primarily the Tier 1 materials, refer to Plan Chapter 4 for additional information. Curbside recycling services are also available in the urban growth area on a subscription basis. Collection of yard debris is provided Naches, Selah, Toppenish, Union Gap, Yakima, and Zillah, refer to Plan Chapter 5 for additional information. Commercial collection of recyclables is offered by Yakima Waste Systems, Basin Disposal and Central Washington Recycling in and around the incorporated areas of Yakima County. The cost of these recycling collection programs are already reflected in the current collection fees charged by the regulated haulers.

Yakima County operates recycling drop-off sites at Terrace Heights and Cheyne Landfills and LVTS. In addition, these facilities accept yard debris, including grass clippings, leaves, garden and landscaping wastes, brush and other natural woods up to ten inches in diameter, and Christmas trees. These materials are typically generated separately from other residential and commercial waste streams, and so are more easily diverted to composting and other programs. Hay, straw plastic, sod, manure, treated wood, stumps, rocks and food waste are not accepted in Yakima County's yard debris program.

Alternative Strategies – Yard Debris Collection

Alternative management strategies are needed for yard debris generated in Yakima County. Curbside yard waste collection programs operate successfully when in an urban or suburban area but given the distance between customers and the composting

facilities, it is not advised at this time. However, three alternatives were explored for increasing the participation rates.

- Alternative A – Local yard debris drop-off sites
- Alternative B – Haul yard debris to a central composting facility
- Alternative C – Bulky waste collection

Alternative A could cost between $5,000 and $75,000 to implement a small local yard debris processing facility, depending on its complexity, type of equipment, and other factors. Yard debris self-haulers would probably be assessed a flat fee based on vehicle size (e.g. one rate for cars, higher rates for pickup trucks and trailers). The costs of Alternative B will be developed during the compost feasibility study. Under Alternative C, bulky waste self-haulers could be assessed a fee based on the type/size of item (different rates for armchairs, sofas, mattresses, refrigerators, stoves, etc.). After experience is gained with running these bulky waste collection events, the rates can be set with reasonable accuracy so that the revenue is about the same as the cost of running the events.

Solid Waste Collection Programs

The following table details information about the customer base of the two WUTC-regulated collection companies in Yakima County as well as the four, non-regulated, municipal collection systems. Reported amounts for both WUTC regulated haulers are for operations within the regulated areas of Yakima County; therefore, information from the incorporated areas serviced by both haulers has been excluded from the following table.

Basin Disposal, Permit #G-45			
Customers and Tons	**2017**	**2019**	**2022**
Single Family Customers	7913	8153	8527
Residential MSW Tons	20,871	21,504	22,490
Commercial Customers	Not Available	Not Available	Not Available
Commercial MSW Tons	13,914	14,336	14,993
Yakima Waste Systems, Permit #G-89			
Customers and Tons	**2017**	**2019**	**2022**
Single Family Customers	15,302	15,766	16,489
Residential MSW Tons	73,361	75,586	79,051
Commercial Customers	14,566	15,007	15,695
Commercial MSW Tons	61,135	62,988	65,876
Municipal Collections within Yakima County			
Municipality	**2017**	**2019**	**2022**
City of Yakima			
Number of Customers	26,789	27,601	28,866
Total MSW Tons	30,184	31,100	32,525
City of Toppenish			
Number of Customers	2,473	2,548	2,665
Total MSW Tons	5,554	5,722	5,985
City of Grandview			
Number of Customers	3,091	3,185	3,331
Total MSW Tons	6,442	6,637	6,941
City of Granger			
Number of Customers	721	743	777
Total MSW Tons	1904	1962	2052

** Projected 2017, 2019, and 2022 based on %'s from Table 8-1 applied to 2015 data.*

Energy Recovery & Incineration (ER&I) Programs

Not applicable to Yakima County.

Land Disposal Program

Yakima County owns and operates two landfills: Terrace Heights Landfill located 4 miles east of the City of Yakima and Cheyne Landfill located 3 miles north of Zillah. The following tables detail the source of waste tons for each landfill.

Terrace Heights Landfill			
Waste Source	**Year 1**	**Year 3**	**Year 6**
Self Haul	23,066	23,765	24,854
Residential Curbside	89,265	90,608	94,761
Commercial	60,966	61,883	64,720
Total MSW Tons	**171,069**	**176,257**	**184,335**

Cheyne Landfill *			
Waste Source	**Year 1**	**Year 3**	**Year 6**
Self Haul	9,320	9,602	10,042
Residential Curbside	39,665	40,868	42,741
Commercial	26,243	27,039	28,278
Total MSW Tons	**75,227**	**77,508**	**81,061**

** Includes Lower Valley Transfer Station tonnage*

Landfill Cost

Yakima County does not segregate costs for each active landfill and set a disposal fee independently; rather it pools the cost for both landfills. The table below summarizes the cost of operations and capital equipment for both landfills on an annual basis as well as a per ton basis. Projected costs based on escalated budgeted 2016 costs.

Landfill Cost	Year 1	Year 3	Year 6
Total Cost	$4,230,081	$4,445,378	$4,789,950
MSW Tons	246,296	253,765	265,396
Cost Per Waste Ton	**$17.17**	**$17.52**	**$18.05**

Administration Program

The administrative costs shown below are based on cost figures escalated from the 2016 budget.

Administrative Cost	Year 1	Year 3	Year 6
General	$827,234	$877,927	$959,941
Planning	61,253	64,921	309,652
Recycling	393,645	416,246	452,669
Total Administrative	**$1,282,131**	**$1,359,094**	**$1,722,262**

Other Programs

Yakima County operates a Moderate Risk Waste (MRW) / Household Hazardous Waste facility at Terrace Heights Landfill called the Household & Small Business Waste Collection Facility (HSBWCF). Historically, Yakima County received grant money from the Washington State Department of Ecology (Ecology) to offset the costs of the program, however starting in 2017 (Year 1) no grant money is assumed. The table below details the projected operational costs.

Item	Year 1	Year 3	Year 6
MRW Operational Cost	$499,201	$529,098	$577,375
Less Ecology Grant	(0)	(0)	(0)
Program Cost	**$499,201**	**$529,098**	**$577,375**

In addition to the two landfills, Yakima County operates the LVTS just south of the town of Granger. The transfer station serves private and municipal haulers as well as self haul customers. Waste collected at the LVTS is transported and disposed at the Cheyne Landfill. Terrace Heights and Cheyne Landfills have a transfer station for self haul customers. The table below summarizes the operational and capital cost for the three facilities based on 2016 budgeted costs escalated for future years.

Item	Year 1	Year 3	Year 6
Transfer Station Operational Costs	$1,554,410	$1,634,199	$1,761,949

Yakima County operates a septage lagoon at Cheyne Landfill for the disposal of sewage sludge from local municipalities and private contractors servicing rural septic systems. The cost of the program is funded through the disposal fee charged for waste delivered to the facility. Historically, the fee charged for disposal has been approximately 40% of the solid waste disposal fee. For 2017, the new fee for septage is $14.00 per ton, which is 39% of the 2017 solid waste disposal fee.

FUNDING MECHANISMS

System costs reported in this questionnaire are funded by user fees charged at the landfills and transfer station with the exception of interest earned on fund balances, miscellaneous revenues, and prior to 2017, annual grant funds from the Washington Department of Ecology used primarily to offset the operational costs of the Moderate Risk / Household Hazardous Waste Program. Provided in the table below is a summary of the revenues received by Yakima County based on the recently completed draft rate study.

System Funding Source	2017 Amount	Funding Percentage
Disposal Fees	$9,250,812	98.1%
Investment Interest	93,999	1.0%
Other Misc. Revenue	83,002	0.9%
WA DOE Grant	0	0.0%
Total Funding Sources	**$8,960,646**	**100.0%**

The projected fee, based on the rate study, for waste disposal will be $36.00 in 2017. Yard debris disposal cost is half of the waste disposal fee or $18.00 per ton. The summarized disposal fee components are detailed in the table below:

Rate Component	2017 Rate
Operations	$27.43
Closure/Post Closure	2.59
Capital	5.98
Total	**$36.00**

The following facilities are owned and operated by Yakima County Solid Waste Division:

Facility Name	Facility Type	Location	Final Disposal	Tip Fee per Ton*	MSW Tons*	Annual Revenues**
Lower Valley Transfer Station	Transfer Station	Granger, Washington	Cheyne Landfill	$36.00	35,251	$1,269,027
Terrace Heights Landfill	Landfill	Yakima, Washington	N/A	$36.00	171,069	$6,158,471
Cheyne Landfill	Landfill	Zillah, Washington	N/A	$36.00	39,976	$1,439,149

** Projected 2017 based on %'s from Table 8-1. Refuse and B&O taxes paid by Yakima County to the State are included in the tip fee.*
*** Annual revenues for MSW disposal only.*

The following table details the projected tip fee components for the upcoming plan years. Yakima County's policy is to utilize a sinking fund for future capital purchases. Equipment and infrastructure over the planning period will be funded through the $5.98 fee per ton.

Yakima County Tip Fee Components	
Rate Component	**2017**
Administration – General	$2.89
Administration – Planning	0.22
Administration – Recycling	1.37
Operations – Landfill	14.75
Operations – Transfer Station	5.42
Operations. – HSBWCF	1.74
O&M Reserves and Taxes	1.04
Total Operations	**$27.43**
Landfill Closure / Post Closure	$2.59
Capital	5.98
Total Tip Fee	**$36.00**

The following table is the summarized budget for Yakima County for the years 2017 to 2022. The table is based on the recent rate study analysis performed for Yakima County. The following assumptions were used to project revenues and expenses:

- Growth – 2.0%
- Labor – 3.0%
- Average Inflation – 3.5%

Yakima County Solid Waste Division Projected Budget 2017 to 2022 ($000s)						
Costs	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Revenues						
Service Revenue	$9,251	$9,436	$9,625	$9,817	$10,013	$10,214
Revenue from Rate Adj.	1,064	1,085	1,107	1,129	1,152	1,858
Other Misc. Revenue	83	84	85	86	86	87
Ecology Grant	0	0	0	0	0	0
Fund Interest	94	104	104	202	216	232
Total Revenue	**$10,492**	**$10,709**	**$10,920**	**$11,234**	**$11,467**	**$12,391**
Expenses						
Administration – General	$827	$852	$878	$904	$932	$960
Administration – Planning	61	63	65	67	69	310
Administration – Recycling	394	405	416	428	440	453
Operations – Landfill	4,230	4,336	4,445	4,557	4,672	4,790
Operations – Transfer Stations	1,554	1,594	1,634	1,676	1,718	1,762
Operations – HSBWCF	499	514	529	545	561	577
O&M Reserves and Taxes	325	390	397	405	412	438
Landfill Closure / Post Closure	683	692	795	857	910	966
Capital	1,918	1,863	1,760	1,795	1,754	2,135
Total Expenses	**$10,492**	**$10,709**	**$10,920**	**$11,234**	**$11,467**	**$12,391**
Net Income	$0	$0	$0	$0	$0	$0

Closure and post-closure costs for Terrace Heights Landfill and Cheyne Landfill are summarized in the following table to the left, while the accrual for capital projects is summarized in the table to the right.

Yakima County Landfill Closure/Post-closure $ / Ton (2017-2021)	
Annual Closure Costs to Accrue	$316,558
Annual Post-closure Costs to Accrue	321,801
Total Costs to Accrue	**$638,359**
Annual MSW Tons	246,296
Cost ($ / Ton)	$2.59

Yakima County Solid Waste Division Capital Accrual $ / Ton (2017)	
Capital Costs	$1,473,458
MSW Tons	246,296
Cost ($ / Ton)	$5.98

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Appendix G – State Environmental Policy Act Checklist

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SEPA
ENVIRONMENTAL CHECKLIST
SUBMITTAL SUPPLEMENTAL

Yakima County Public Services
128 North Second Street · Fourth Floor Courthouse · Yakima, Washington 98901
(509) 574-2300 · 1-800 572-7354 · FAX (509) 574-2301 · www.co.yakima.wa.us

Form # PLN ENR 003-SS1-A
Revised: 8/12/14

(For Staff Use Only)
DATE: _____
REVIEWED BY: _____
PROJECT #: _____
CASE #: _____
RELATED FILES:

WAC 197-11-960 Environmental checklist.

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

For nonproject proposals complete this checklist and the supplemental sheet for nonproject actions (Part D). The lead agency may exclude any question for the environmental elements (Part B) which they determine do not contribute meaningfully to the analysis of the proposal. For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. Background

1. Name of proposed project, if applicable:

2016 Yakima County Solid Waste and Moderate Risk Waste Management Plan

2. Name of applicant:

Yakima County Department of Public Services, Solid Waste Division

3. Address and phone number of applicant and contact person:

Karma Suchan, Manager
Yakima County Department of Public Services Solid Waste Division
7151 Roza Hill Drive
Yakima, WA 98901-2614
(509) 574-2450

4. Date checklist prepared:

August 29, 2016

5. Agency requesting checklist:

Yakima County and Washington State Department of Ecology (Ecology)

6. Proposed timing or schedule (including phasing, if applicable):

Yakima County will complete the Solid Waste and Moderate Risk Waste Management Plan (referred to as the "Plan") in 2016. Local adoption of the Plan by the entities listed in Item A.10, below, is expected by the end of 2016, and the Plan will become effective at that time. Implementation will occur over a 5-year period from 2017 through 2022.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

State law requires that solid waste plans be reviewed regularly and updated as needed. The next update for the Plan is scheduled for 2022.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Environmental review will occur subsequently on a per-project basis, as applicable.

This Plan supersedes all previous solid waste and moderate risk waste (MRW) management plans including the *Yakima County Solid and Moderate Risk Waste Management Plan, June 2010* (the "2010 Plan"), *Yakima County Solid Waste Management Plan*, July 2003 (the "2003 Plan"), and *Yakima County*

Hazardous Waste Management Plan, March 1991. SEPA Checklists were previously completed in November 2002 for the 2003 Plan and January 2010 for the 2010 Plan.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no specific properties or projects covered in the Plan.

10. List any government approvals or permits that will be needed for your proposal, if known.

Approvals are required from: the Yakima County Board of Commissioners; the cities of Grandview, Grander, Harrah, Mabton, Moxee, Naches, Selah, Sunnyside, Tieton, Toppenish, Union Gap, Wapato, Yakima, and Zillah; the Yakima County Solid Waste Advisory Committee; and Ecology.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The Plan recommends strategies to manage solid waste and MRW generated in Yakima County, Washington. Solid waste handling includes management, storage, collection, diversion, transportation, treatment, use, processing, and final disposal. The Plan includes recommendations for municipal solid waste, MRW, diversion, construction and demolition debris, organics, and special wastes.

Specific objectives of the Plan include the following:

- Ensure convenient and reliable services for managing solid waste and MRW materials;
- Promote the use of innovative and economical waste handling methods;
- Emphasize waste reduction as a fundamental management strategy;
- Support public-private partnerships for waste reduction and recycling programs;
- Encourage the recovery of marketable resources from the waste stream;
- Reduce environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping;
- Ensure compliance with State and local solid waste and MRW regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The Plan includes incorporated and unincorporated areas of Yakima County, excluding the Yakama Indian Nation and the Unites States Army Training Center which handle their own waste and are excluded from the Plan. Figure 7-1, located within the Plan, provides a map of the county and Yakima County solid waste facilities.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other _____

Not applicable (N/A) – non-project proposal.

b. What is the steepest slope on the site (approximate percent slope)?

N/A

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

N/A

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

N/A

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

N/A

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

N/A

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

N/A

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

N/A

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

N/A

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

N/A

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

N/A

3. **Water**

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

N/A

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

N/A

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

N/A

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

N/A

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

N/A

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

N/A

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

N/A

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

N/A

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

N/A

2) Could waste materials enter ground or surface waters? If so, generally describe.

N/A

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

N/A

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

N/A

4. **Plants**

a. Check the types of vegetation found on the site: N/A

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
____shrubs
____grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
____water plants: water lily, eelgrass, milfoil, other
____other types of vegetation

b. What kind and amount of vegetation will be removed or altered?

N/A

c. List threatened and endangered species known to be on or near the site.

N/A

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

N/A

e. List all noxious weeds and invasive species known to be on or near the site.

N/A

5. **Animals**

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. N/A

Examples include:

birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____

b. List any threatened and endangered species known to be on or near the site.

N/A

c. Is the site part of a migration route? If so, explain.

N/A

d. Proposed measures to preserve or enhance wildlife, if any:

N/A

e. List any invasive animal species known to be on or near the site.

N/A

6. **Energy and Natural Resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

N/A

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

N/A

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

N/A

7. **Environmental Health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

N/A

1) Describe any known or possible contamination at the site from present or past uses.

N/A

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

N/A

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

N/A

4) Describe special emergency services that might be required.

N/A

5) Proposed measures to reduce or control environmental health hazards, if any:

N/A

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

N/A

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

N/A

3) Proposed measures to reduce or control noise impacts, if any:

N/A

8. **Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

N/A

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

N/A

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

N/A

c. Describe any structures on the site.

N/A

d. Will any structures be demolished? If so, what?

N/A

e. What is the current zoning classification of the site?

N/A

f. What is the current comprehensive plan designation of the site?

N/A

g. If applicable, what is the current shoreline master program designation of the site?

N/A

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

N/A

i. Approximately how many people would reside or work in the completed project?

N/A

j. Approximately how many people would the completed project displace?

N/A

k. Proposed measures to avoid or reduce displacement impacts, if any:

N/A

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

N/A

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

N/A

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

N/A

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

N/A

c. Proposed measures to reduce or control housing impacts, if any:

N/A

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

N/A

b. What views in the immediate vicinity would be altered or obstructed?

N/A

c. Proposed measures to reduce or control aesthetic impacts, if any:

N/A

11. **Light and Glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

N/A

b. Could light or glare from the finished project be a safety hazard or interfere with views?

N/A

c. What existing off-site sources of light or glare may affect your proposal?

N/A

d. Proposed measures to reduce or control light and glare impacts, if any:

N/A

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?

N/A

b. Would the proposed project displace any existing recreational uses? If so, describe.

N/A

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

N/A

13. **Historic and cultural preservation**

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers ? If so, specifically describe.

N/A

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

N/A

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

N/A

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

N/A

14. **Transportation**

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

N/A

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

N/A

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

N/A

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

N/A

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

N/A

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

N/A

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

N/A

h. Proposed measures to reduce or control transportation impacts, if any:

N/A

15. **Public Services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

N/A

b. Proposed measures to reduce or control direct impacts on public services, if any.

N/A

16. **Utilities**

a. Circle utilities currently available at the site: N/A
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

N/A

C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Karma Suchan

Name of signee: Karma Suchan

Position and Agency/Organization: Manager, Yakima County Department of Public Services, Solid Waste Division

Date Submitted: September 30, 2016

D. supplemental sheet for nonproject actions

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

Proposed actions described in the Plan are meant to encourage the proper management and disposal of solid and hazardous wastes, and to promote waste reduction, recycling, composting, and reuse. Successful implementation of the Plan is intended to decrease releases of toxic or hazardous substances to the environment.

The Plan itself will not increase discharges to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise. Specific projects recommended in the plan would undergo a SEPA review specific to them and be subject to any other applicable state and local requirements.

Proposed measures to avoid or reduce such increases are:

Specific objectives of the Plan aimed at special wastes include:

- Ensure convenient and reliable services for managing solid waste materials;
- Promote the use of innovative and economical waste handling methods;
- Reduce the environmental impacts to air, water and land that are associated with waste generation, transportation, handling, recycling and disposal;
- Reduce the occurrence and environmental impacts associated with illegal dumping;
- Ensure compliance with State and local solid waste and MRW regulations; and
- Manage waste in a manner that promotes Washington State's waste management priorities presented in Ecology's Moving Washington Beyond Waste and Toxics document.

The following recommendations are made in the Plan for special wastes:

SW1) Continue to dispose special wastes through a cooperative effort with the Yakima Health District and Ecology, and according to the established Solid Waste Policy & Procedures document.

SW2) Update Solid Waste Policies & Procedures document as necessary to address new issues or special wastes.

SW3) Monitor EPA and Washington State guidance regarding pharmaceutical waste and implement changes as needed to comply with statewide medicine take-back program.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Refer to response number 1. The Plan encourages the proper management and disposal of solid waste, which should protect plant and wildlife habitat by reducing illegal dumping. Enhanced educational efforts regarding the use of toxic substances and increased access to recycling, as recommended in the Plan, may reduce threats posed to wildlife by improper disposal of solid wastes.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

Refer to response number 1.

3. How would the proposal be likely to deplete energy or natural resources?

The Plan's recommendations are not expected to deplete energy or natural resources. The Plan promotes a more efficient system for collecting and disposing of solid wastes. The Plan also promotes practices associated with waste reduction, recycling, energy recovery, and reuse which should ultimately conserve natural resources.

Proposed measures to protect or conserve energy and natural resources are:

N/A

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

Such areas should be unaffected by the recommendations in the Plan. Implementation of project-specific proposals will undergo environmental review and SEPA.

Proposed measures to protect such resources or to avoid or reduce impacts are:

N/A

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

Future development would occur in accordance with Plan 2015, Yakima County's comprehensive land use planning document. No direct impacts to land or shoreline uses are anticipated to result from the proposed recommendations.

Proposed measures to avoid or reduce shoreline and land use impacts are:

N/A

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

The addition of any solid waste facilities or practices promoted by the Plan will be implemented in accordance with local, state, and federal regulations. Therefore, increased demands on those services would be minimized through compliance with the applicable laws and regulations in place at the time of the proposed action. Solid waste collection is described and analyzed in Chapter 6 of the Plan.

Proposed measures to reduce or respond to such demand(s) are:

N/A

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The addition of any solid waste facilities or practices promoted by the Plan will be implemented in conformance with local, state, and federal regulations. The Plan does not recommend any actions that are not in compliance with said regulations.