City of Richland

2011 Solid Waste Management Plan

August 2011

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Appendix 4 City of Richland Municipal Code – Title 15 Solid Waste

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Appendix 6 City of Richland Council Resolution (Resolution Pending)

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

This revised and updated *2011 City of Richland Solid Waste Management Plan* documents existing waste management policies and current programs established and operated by the City. It is not intended to replace the City's commitment to the Benton County Comprehensive Solid Waste Management Plan and Interlocal Agreement. This is a waste management plan to guide Richland's solid waste management approach in the years ahead. The plan will be submitted to the State Department of Ecology (Ecology) for review and has been revised in accordance with Ecology's "Guidelines for Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions", January 2010.

ES.2 GOALS AND OBJECTIVES

At the beginning of the original planning process, a statement of priorities was prepared by the Richland Solid Waste Advisory Committee (SWAC) to identify their key interests regarding solid waste management in the City. During the review to update the Plan, the SWAC once again reviewed those priorities and found they were still valid in 2011.

- Waste reduction
- Green waste
- Recycling
- Landfill site use optimization
- Innovative solid waste processing
- Technology development/support
- Education to support change
- Source separation
- Special wastes, e-waste, pharmaceuticals
- Construction and demolition waste
- Market development

The following general goals adopted by the SWAC support existing policies and programs that were reviewed during the course of the review process:

- **Goal 1:** Manage solid waste in compliance with State and local regulations to promote and protect human and environmental health and safety.
- **Goal 2:** Optimize the solid waste management system to provide for long-term stability in a cost-effective manner.
- **Goal 3:** Provide solid waste programs with emphasis on customer service and satisfaction.

- **Goal 4:** Identify the types of recyclables and establish programs to efficiently and effectively recycle and market these materials.
- **Goal 5:** Promote programs and balance incentives and disincentives to encourage reduction, reuse and recycling.
- **Goal 6:** Educate businesses and the public on opportunities available for waste reduction, reuse and recycling.
- **Goral 7:** Encourage and support the research and development of new technologies for solid waste management and recycling.

ES.3 SUMMARY OF RECOMMENDATIONS

During the Plan update recommendations from were reviewed and prioritized. Implementation of these recommendations will be driven by budget and more detailed study of the programs.

- Enhance existing waste and recycling programs for commercial customers.
- Curbside collection of food waste by commercial sector.
- Expand Horn Rapids Landfill
- Expand diversion of construction and demolition materials at Horn Rapids Landfill as markets allow.
- Support diversion of wood waste at transfer station and landfill.
- Encourage and support research and development of alternative energy industries and development of new recycling technologies.
- Promote programs and provide incentives that encourage and support waste reduction, reuse and recycling.

ES.4 CAPITAL IMPROVEMENT PLAN AND SCHEDULE

As part of the update to this Plan, an analysis was conducted of potential solid waste capital improvements for implementation in the City of Richland for the 20-year planning period commencing in 2011. The projections and costs in the capital improvement plan (CIP), as shown in **Exhibit ES-1** are preliminary, planning-level projections. Key decisions about the future course of the City's solid waste system will require issuing proposals or bids for private sector services, more precise specifications, conceptual engineering, and future service contract costs. This CIP is a tool to evaluate and plan for future strategies as more information and funding becomes available.

Exhibit ES-1. Capital Improvement Plan (2011- 2031)

CIP#	Project	Funding Mechanism	Cost Estimate	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2026	2031
LANDFILL LITTER ABATEMENT																
	North Fence	Rates	$ 129,000	$ 129,000												
	West Fence (Part of Closure)	Closure Fund	$ 90,000	$ 90,000												
	Compost Fence	Rates	$ 36,000		$ 36,000											
	South Fence	Rates	$ 175,000						$ 175,000							
TRANSFER STATION IMPROVEMENTS																
	Metal & Other Material Collection	Rates	$ 150,000		$ 150,000											
	Household Hazardous Waste	Rates	$ 150,000							$ 150,000						
	Organics-Phase I Concrete Collar	Rates	$ 85,000			$ 85,000										
	Office to Transfer Station	Rates	$ 50,000					$ 100,000								
	Organics – Phase 2 Paving	Rates	$ 110,000											$ 110,000		
LANDFILL FACILITY IMPROVEMENTS																
	Asphalt Pavement Around Shop – Phase I East Side	Rates	$ 40,000					$ 40,000								
	Decant Pad	Rates	$ 50,000				$ 50,000									
	Removal of Irrigation Well Near Scale House	Rates	$ 10,000							$ 10,000						
	Asphalt Pavement Around Shop – Phase 2 South and West Side	Rates	$ 70,000			$ 70,000										
	Re-Roof Scale House	Rates	$ 20,000					$ 20,000								
	South Toe road Removed (Phase 2 Closure Prep)	Rates	$ 110,000					$ 110,000								
	Inert Processing	Rates	$ 100,000									$ 100,000				
	Container Area Pavement – Phase 1	Rates	$ 165,000							$ 165,000						
	110’ New Scale	Rates	$ 210,000							$ 210,000						
	Road to New Scale	Rates	$ 75,000							$ 75,000						
	Container Area Pavement – Phase 2	Rates	$ 165,000								$ 165,000					
	Collection Office	Rates	$ 250,000									$ 250,000				
	Garbage Truck Shop	Rates	$1,500,000											$1,500,000		
	Landfill Equipment Shop	Rates	$ 500,000												$1,500,000	

CIP#	Project	Funding Mechanism	Cost Estimate	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2026	2031
COMPOST PAD																
	Water Service Taps on Irrigation Line	Rates	$ 10,000	$ 10,000												
	Extend Service Line to West Side of Pad	Rates	$ 15,000			$ 15,000										
	Expansion of Compost Pad	Rates	$ 475,000											$ 475,000		
LANDFILL CLOSURE																
	Gas Flare – West Half Closure	Closure Fund	$1,400,000	$1,400,000	-											
	Design – East Half Closure	Closure Fund	$ 100,000							$ 100,000						
	East Half Closure	Closure Fund	$3,200,000								$3,200,000					
LANDFILL CAPACITY EXPANSION																
	Preliminary Design and Permitting	Rates	$ 475,000		$ 75,000	$ 200,000	$ 200,000									
	Cell Design	Rates	$ 500,000						$ 500,000							
	Cell Construction	Rates	$5,000,000						$5,000,000					$5,000,000		$5,000,000
LANDFILL ONGOING IMPROVEMENTS																
	Water Main Loop System	Rates	$ 25,000													
	Transfer Station Misting Unit	Rates	$ 12,000													
	Connect Compost Irrigation Line to Domestic System	Rates	$ 15,000													
	Install Temporary Irrigation Lines	Rates	$ 25,000													
	Move Water Truck Station															
	Relocate Exit Road															
	Grade East End of Landfill (Phase 2 Closure Prep)															
	Container Area Grindings Placement – Phase 2															
	Metal Repairs on Transfer Station (General Maintenance)															
			$15,492,000	$1,629,000	$265,204	$304,026	$324,028	$274,030	$5,179,032	$714,034	$169,036	$354,038	$4,040	$6,089,042	$1,504,052	$5,004,062

SECTION 1

INTRODUCTION

1.1 PLAN PURPOSE AND DESCRIPTION

Solid waste plans provide long-term, environmentally sound solid waste management guidelines. Washington State law RCW 90.95.080(3) has three options for a city solid waste plan. The City of Richland has chosen the first option RCW 90.95.080(3)(a) that states: "Prepare and deliver to the county auditor of the county in which it is located its plan for its own solid waste management for integration into the comprehensive county plan".

In 2009, the City chose to develop their own solid waste management plan as a tool to guide the continued development of their collection system and landfill. This updated Plan is not intended to supplant the County Plan nor take away from the City's commitment to the County Plan. It is to give the City flexibility in defining their future in solid waste. This updated Plan has been revised in accordance with Ecology's "*Guidelines for Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions*", January 2010. It is the City's intention to have Ecology review the Plan for their approval.

The purpose of this City review is to update the Plan and provide citizens and decision makers in the City with a guide to implement, monitor, and evaluate future solid waste activities in the planning area for a 20-year period. The recommendations for the revised Plan not only guide local decision makers, but substantiate the need for local funds and state grants to underwrite future solid waste projects.

1.2 OVERVIEW OF INSTITUTIONAL STRUCTURE AND PLANNING PROCESS

1.2.1 Richland Solid Waste Advisory Committee/Utilities Advisory Committee

The RCW is specific in establishing Solid Waste Advisory Committees and their members. The Richland SWAC shall consist of nine members representing a balance of interests including but not limited to citizens, public interest groups, business, waste management industry and local elected officials. The City established this Solid Waste Advisory Committee (SWAC) for the purpose of assisting in the review of the update to this solid waste plan. The Richland SWAC is made up of members who reflect the requirements of RCW 70.95.165(3). The members were selected based on recommendations by City council members and City staff. The Richland SWAC does not have legislative decision-making powers but makes recommendations to the Utility Advisory Committee (UAC) and the UAC then makes recommendations to the Richland City Council. The membership on the Richland SWAC is shown in **Table 1-1**.

Table 1-1 Solid Waste Advisory Committee Members

Steve Arneson	Pat Puntney	Mark Panther
Dan Porter	Lora Rathbone	Gus Sako
Jeff Dagle	Eric Damberg	Joe Jacobs
Phil Lemley		

1.3 PLAN PRIORITIES AND GOALS

At the beginning of the original planning process, a statement of priorities was prepared by the SWAC to identify their key interests regarding solid waste management in the City. That following list developed by the past SWAC and summarized the priorities at that time as being:

- Waste reduction
- Green waste
- Recycling
- Landfill site use optimization
- Innovative solid waste processing
- Technology development/support
- Education to support change
- Source separation
- Special wastes, e-waste, pharmaceuticals
- Construction and demolition waste
- Market development

The following goals were adopted by the previous SWAC:

- **Goal 1:** Manage solid waste in compliance with State and local regulations.
- **Goal 2:** Provide solid waste programs and services that promote and protect the health and safety of the environment, with emphasis on customer service and satisfaction.
- **Goal 3:** Optimize the solid waste management system to provide for long term system stability in a cost effective manner.
- **Goal 4:** Identify the types of recyclables and establish programs to efficiently and effectively recycle and market these materials.
- **Goal 5:** Promote programs and provide incentives that encourage and support waste reduction, reuse, and recycling.
- **Goal 6:** Educate the public on the importance of waste reduction, reuse, and recycling.
- **Goal 7:** Encourage and support the research and development of new technologies for solid waste management.

Their next step in the review process was to review the existing goals to see if they were still relevant for managing solid waste in Richland. They met three times in May, June and August 2011 to review and update the Plan. The meetings were open to the public and held at the city library. This overview helped to focus the review on the specific needs of Richland, and led to

the development and the final recommendations included in the executive summary of this revised Plan.

1.4 ORGANIZATION OF THE PLAN

The format of the Plan follows the recommendations outlined in the Department of Ecology (Ecology) *Guidelines for the Development of Local Comprehensive Solid Waste Management Plans and Plan Revisions (January 2010).* The Plan is organized as follows:

- ES Executive Summary
- Section 1 Introduction
- Section 2 Planning Area
- Section 3 Waste Generation
- Section 4 Waste Reduction
- Section 5 Recycling
- Section 6 Waste Organics
- Section 7 Collection, Transfer, and Disposal
- Section 8 Miscellaneous Wastes
- Section 8 Moderate Risk Waste
- Section 10 Regulatory Review
- Section 11 Administration of Plan and Community Education

SECTION 2

PLANNING AREA

2.1 NATURAL AND HUMAN ENVIRONMENT

2.1.1 Natural Environment

The City of Richland lies at the confluence of the Yakima and Columbia Rivers, in the geographic region known as the Mid-Columbia Basin. Richland and the nearby communities of Pasco and Kennewick are commonly called the Tri-Cities. The Tri-Cities lie at the northern tip of an interior sunbelt that stretches south to California.

Richland's climate is described as pleasant with warm, dry summers and moderate, though damp, winters. Richland receives about 7 inches of rain per year, giving it a semi-arid or desert climate. Summers are hot and almost rainless, while winters are milder than in other parts of Eastern Washington, with snow falling only occasionally but rarely sticking. On average, there are 196 sunny days per year with a high in July around 90 degrees and a low in January around 26 degrees.

The Columbia and Yakima Rivers provide water for irrigation of nearby farmland and residential as well as for domestic use. The Columbia River system is one of the largest in the world. It provides excellent recreational resources, an abundance of hydroelectric power, and a multitude of industrial uses. Some 27 miles of waterfront lie within the city limits, offering opportunities for boating, swimming, fishing, sailing, water skiing, and many other water-related activities.

2.1.2 Demographics

In 2010, the Washington State Office of Financial Management put the city's population at 48,580. Long-term population trends for Richland are shown in **Table 2-1**. During the 1990s, population growth was slow and became more rapid in the 2000's. It is forecasted that the population will continue to grow in the coming years.

Table 2-1. Richland Population Growth and Projections

Year	Population	Annual Growth Rate
Historic		
2008	46,080	2.24 %
2009	47,410	2.87 %
2010	48,058	1.35 %
Forecast		
2011	48,580	1.08 %
2012	49,130	1.12%
2013	49,780	1.31%
2016	51,128	2.64%
2021	53,357	4.18%
2026	55,420	3.72%
2031	56,672	2.53%

Based on the 2010 US Census data, ethnically, the city is composed largely of white Americans (approximately 85 percent of the population). Racial minorities represent approximately 14.74 percent of the population and are composed as follows: Black: 1.3 percent; American Indian: 0.8 percent; Asian: 4.7 percent; Hispanic: 7.8 percent; and Other: 0.14 percent.

2.1.3 Wages and Income

Wage and income data from the 2010 Census was not available but data from the 2000 Census indicates the median income for a household in the city was $53,092. Based on per capita income, Richland ranks 83rd of 522 areas ranked in the State of Washington—the highest rank achieved in Benton County.

2.1.4 Economy

The Tri-Cities is the largest metropolitan area between Spokane, 145 miles to the northeast, Seattle, 206 miles to the northwest, Portland, Oregon, 219 miles to the southwest, and Boise, Idaho, 300 miles to the southeast. As the primary urban area between these distant centers, the Tri-Cities area is one of the Northwest's major transportation hubs for travelers and commodities.

The community's economy remains largely dependent on federal government work at the Hanford Reservation. Richland and the Tri-City area promotes both agricultural related and technology related industries in the region. Three major sectors have been the principal driving forces of the economy in Richland since the early 1970s:

- DOE and its contractors operating the Hanford Site.
- Energy Northwest in its construction and operation of nuclear power plants.
- The agricultural community, including a substantial food-processing component. Except for a minor amount of agricultural commodities sold to local-area consumers, the goods and services produced by these sectors are exported outside the county.

After the end of World War II, Richland became the center of production and research into nuclear energy and related technology. It has been the home of Pacific Northwest National Laboratory (PNNL) since 1965. The Laser Interferometer Gravitational-Wave Observatory site is located immediately north of Richland. Numerous smaller high technology business and expert consultants have grown up around the Richland technology center as well.

Agriculture is important to both Richland and the Tri-Cities area located around the Columbia Basin. Richland lies on the center of a flourishing viticulture area. Barnard Griffin, Bookwalter Winery, and Tagaris Winery are all located in Richland. Another 20+ wineries lie within a 15-minute drive from Richland, and more than 100 wineries within a 60-mile radius. Richland also hosts an important food processor, Con Agra/Lamb-Weston, which processes potatoes and other foods.

A summary of the major employers in the City, and what they do, is included in **Table 2-2**.

Table 2-2. Major City Employers

	Employers	Type of Business	Employees
1	Battelle, PNNL	Research & Development	4188
2	CHPRC	Government Contractor	3630
3	Bechtel National, Inc.	Waste Treatment Plant Coordinator	2400
4	ConAgra/Lamb Weston, Inc.	Food Processor	1685
5	Kadlec Medical Center	Hospital	1486
6	Richland School District	Public School District	1202
7	CH2M Hill Hanford Group	Government Contractor	1170
8	Fluor Federal Services	Government Private Contractor	1135
9	Energy Northwest	Electric Utility	1083
10	Fluor Government Group	Government Contractor	692
11	Lockheed Martin Services	Info. Tech. Services	650
12	AREVA	Nuclear Fuel Manufacturer	625
13	City of Richland	Local Government	517
14	Wal-Mart #3261	Retailer	329
15	Ben Franklin Transit	Pub. Transport.	300
16	US Dept of Energy	Fed. Government	250
17	WSU - Tri-Cities	University	204
18	Hapo Comm. Credit Union	Credit Union	200
19	Fred Meyer #00286	Retailer	190-200
20	Lourdes Counseling Center	Health Care Provider	147
21	Winco Foods #45	Retailer	127
22	Mid Columbia Engineers	Engineering/Employment Services	120
23	Richland Life Care Center	Health Care Provider	95

2.1.5 Land Use

The City's land use includes a mix of residential, industrial and commercial development, as well as open space. The 2008 Comprehensive Plan strongly encourages commercial and residential redevelopment, including high-rise residential buildings, in Richland's Central Business District (the downtown area), the development and preservation of professional and public administration centers in the Central Business District, and public and private amenities.

As part of the Plan, the City created new residential and commercial land use designations to attract new development and recreational uses. A "Waterfront" land use designation integrates commercial, cultural, office, recreational and residential uses on properties along the Columbia River such as the Port of Benton, Columbia Point and the Richland Wye Area.

Another land use designation is the "Business/Research Park" designation. This accommodates such facilities as the Tri-Cities Science and Technology Park, Battelle Pacific Northwest Laboratory, Washington State University at Tri-Cities, and Hanford assets and support facilities.

The distribution of land designations under the Comprehensive Plan are indicated in **Table 2-3**.

Table 2-3. Distribution of Land Designations

Land Use Designation	Acres (within City limits)	Percent of Total
Agriculture	716	2.84
Commercial	880	3.49
Industrial	4,119	16.35
Open Space	4,395	17.44
Public Facility	1,063	4.22
Residential	6,437	25.55
Business Research Park	805	3.19
Urban Reserve	1,225	4.86
Central Business District	226	0.90
Island View	195	0.77
Area in River	2,629	10.43
Waterfront	143	0.57
Right of Way	2,364	9.38
Total	**25, 197**	**99.99**

SECTION 3

WASTE GENERATION

3.1 INTRODUCTION

The State's priorities for collection, handling and management of solid waste are necessary and should be followed in the descending order of waste reduction, recycling with source separation of recyclable materials as the preferred method and energy recovery/incineration or landfill of mixed municipal solid waters or separated waste. The objectives of source separation are to remove materials from disposal that have resource value and to effectively isolate hazardous materials from improper disposal.

This section provides updated information on the waste stream in the City of Richland. It includes historical and forecast waste quantities in total and on a per-capita basis and the composition of wastes disposed, recycled, and generated. This information is the basis for updating the various elements of the Solid Waste Management Plan.

3.2 WASTE STREAM DEFINITION

State RCW 70.95.030 defines "solid waste" or "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, and recyclable materials." Waste materials addressed in this Plan are described using a number of terms, including municipal solid waste (MSW); construction and demolition (C&D) waste; miscellaneous waste; and moderate risk waste (MRW). For the purposes of this Plan, these wastes will be defined as follows:

- MSW means wastes generated by households and businesses that are typically delivered to the Horn Rapids Landfill and transfer station for disposal, or are recycled or composted through various means. Included in MSW are small quantities of special wastes and residential moderate risk waste, as well as C&D waste.
- C&D wastes include materials delivered to privately operated inert and demolition facilities for recycling or disposal, and C&D waste accepted at the Horn Rapids Landfill.
- Miscellaneous waste includes construction, demolition, and land clearing debris, wood waste, agricultural waste, tires, biomedical waste, petroleum contaminated soils, asbestos, and electronic waste
- MRW means moderate risk waste that includes hazardous waste produced by households and by businesses and institutions in small quantities.

3.3 DATA SOURCES

Waste quantity projections are based on City disposal records, recycling data from City and private recycling operations, and population data from the Washington State Office of Financial Management (OFM). Waste generation is calculated as the sum of recycling (including composting) plus disposal.

3.4 MSW GENERATION, RECYCLING, AND DISPOSAL

Generation, recycling, and disposal data for 2010 are shown in **Table 3-1**. The data shown do not include C&D delivered to non-City facilities.

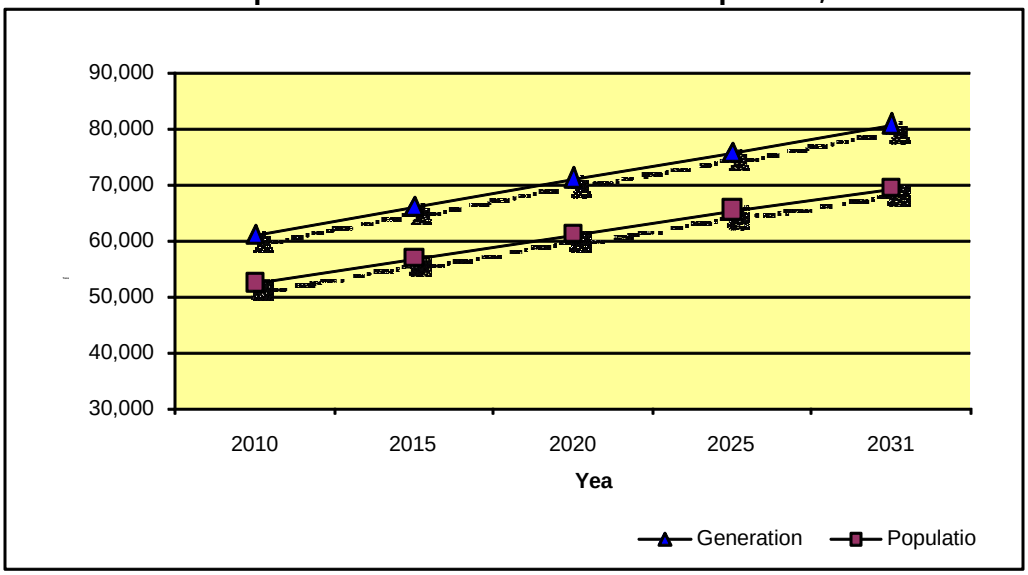
Table 3-1. Waste Generation, City of Richland, 2010

	Tons
Generation	72,047
Recycling	19,526
Disposal	52,521

3.5 WASTE GENERATION FORECAST

Estimates of solid waste generation are based on population projections. Population projections for 2011-2031 are based on State Office of Financial Management projections of the total resident population for the Growth Management Act. Because these projections are based on County population, the Plan uses the Richland portion of the County population (28%) for the forecast. Utilizing the population projections, it is possible to estimate waste generation for the planning period. The population and waste generation forecasts are indicated in **Exhibit 3-1**. As shown, annual waste generation is forecast to increase from about 62,000 tons in 2010 to 80,000 tons in 2031. This forecast utilizes the per capita rate of 6 pounds per person per day and population projections. The amount of municipal solid waste requiring disposal will depend on the level of waste reduction and recycling that occurs in the future.

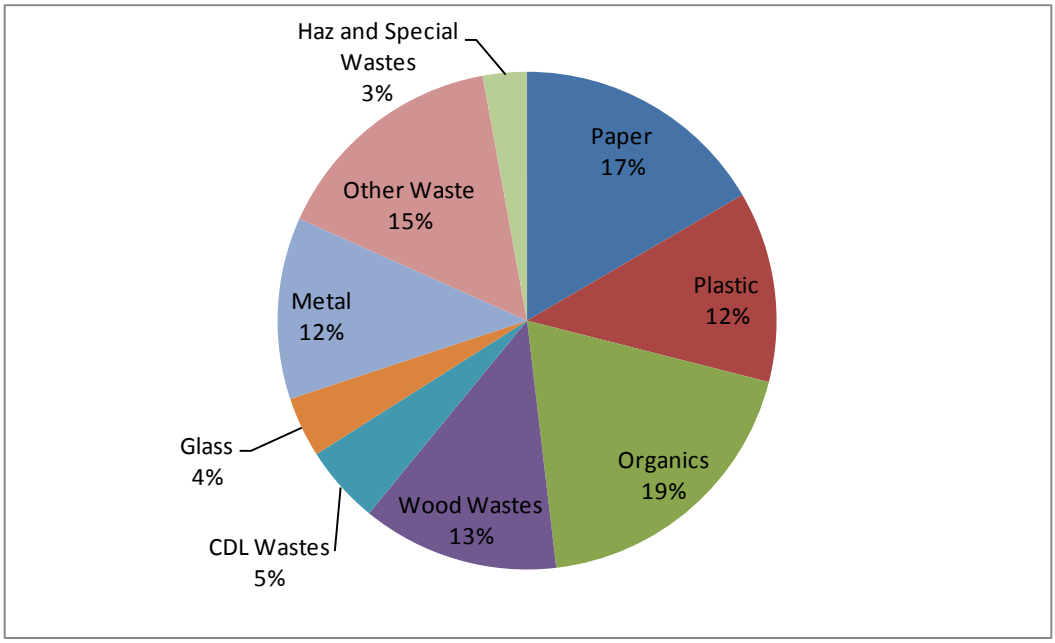
Exhibit 3-1. Population and Waste Generation Projections, 2011-2031



3.6 WASTE COMPOSITION

Exhibit 3-2 shows the waste assumed to be generated in the City of Richland, based on 2003 waste characterization study prepared for Yakima County. As shown, the most prevalent materials disposed are organics, paper, other (textiles, furniture, fines), wood, metals and plastic. A more detailed estimate of waste composition is shown in **Table 3-4.**

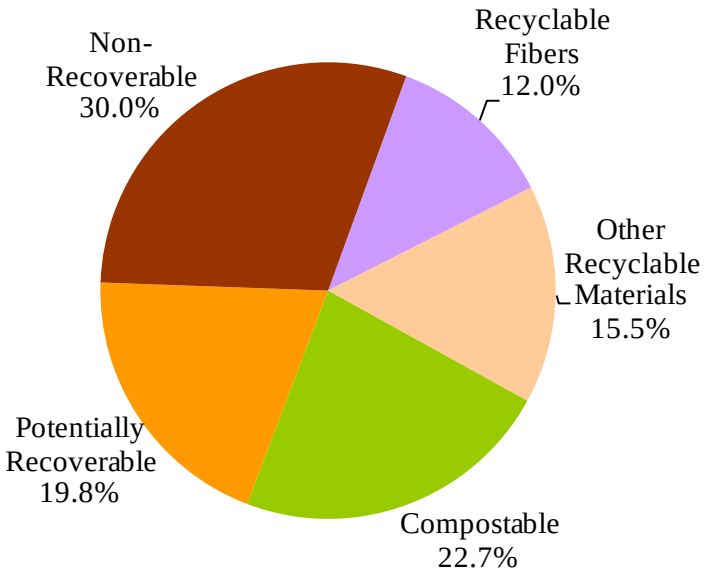
Exhibit 3-2. Waste Characterization of Disposed Waste



Source: *Yakima County Waste Characterization Study, 2003.*

The potential recoverability of materials is an important aspect of waste analysis. **Exhibit 3-3** indicates the recoverability of specific materials from the City of Richland's disposed waste stream. As indicated, approximately 50% of the disposed waste could be recovered for either recycling or composting. These are national estimates. The City will make diversion program decisions based on system economics.

Exhibit 3-3. Material Recoverability



Source: *Yakima County Waste Characterization Study, 2003*.

Table 3-2. Waste Characterization Data

	Tons	%
Paper	**7,194**	**16.67%**
Newspaper	911	2.11%
Cardboard	1,912	4.43%
Other Groundwood Paper	121	0.28%
High-grade Paper	332	0.77%
Magazines	302	0.70%
Mixed/Low-grade Paper	1,623	3.76%
Compostable Paper	1,545	3.58%
Other Paper	449	1.04%
Plastic	**5,408**	**12.53%**
PET Bottles	268	0.62%
HDPE Bottles, Clear	164	0.38%
HDPE Bottles, Colored	121	0.28%
Plastic Film and Bags	1,778	4.12%
Plastic Bottles Types 3 - 7	17	0.04%
Expanded Polystyrene	194	0.45%
Other Rigid Plastic Packagir	777	1.80%
Other Plastic Products	1,675	3.88%
Other Plastic	414	0.96%
Organics	**8,329**	**19.30%**
Food Waste	2,179	5.05%
Mixed Food, Other	2,339	5.42%
Yard Debris	3,578	8.29%
Brush and Prunings	233	0.54%
Wood Wastes	**5,541**	**12.84%**
Natural Wood	160	0.37%
Treated Wood	60	0.14%
Painted Wood	1,308	3.03%
Contaminated	337	0.78%
Dimensional Lumber	1,001	2.32%
Engineered Wood	1,170	2.71%
Roofing, Siding	332	0.77%
Pallets, Crates	729	1.69%
Other Wood	445	1.03%
CDL Wastes	**2,205**	**5.11%**
Fiberglass Insulation	43	0.10%
Asphalt	0	0.00%
Concrete	216	0.50%
Drywall	457	1.06%
Soil, Rocks	773	1.79%
Roofing	466	1.08%
Ceramics, China	69	0.16%
Other CDL	181	0.42%
Total Tons	**43,482**	

	Tons	%
Glass	**1,709**	**3.96%**
Clear Bottles	583	1.35%
Green Bottles	86	0.20%
Brown Bottles	371	0.86%
Non Recyclable Glass	669	1.55%
Metal	**5,153**	**11.94%**
Aluminum Cans	207	0.48%
Aluminum Foil	39	0.09%
Aerosol Cans	65	0.15%
Non-ferrous Metals	436	1.01%
Tin Cans	427	0.99%
White Goods	142	0.33%
Ferrous Metals	1,593	3.69%
Computers	224	0.52%
Other Electronics	246	0.57%
Mixed Metals	1,774	4.11%
Other Waste	**6,707**	**15.54%**
Textiles	1,148	2.66%
Carpeting	673	1.56%
Disposable Diapers	859	1.99%
Tires and Other Rubbe	65	0.15%
Rubber Products	134	0.31%
Cosmetics	52	0.12%
Furniture	945	2.19%
Ash, Dust	73	0.17%
Misc. Organics	30	0.07%
Misc. Inorganics	134	0.31%
Fines	716	1.66%
Residuals	1,877	4.35%
Haz and Special Waste	**1,234**	**2.86%**
Motor Oil, Other	4	0.01%
Oil Filters	26	0.06%
Antifreeze	0	0.00%
Auto Batteries	0	0.00%
Household Batteries	47	0.11%
Pesticides and Herbicic	4	0.01%
Latex Paint	82	0.19%
Oil Paint	35	0.08%
Medical Waste	17	0.04%
Fluorescent Tubes	9	0.02%
Solvents	9	0.02%
Adhesives, Glues	216	0.50%
Cleaners, Corrosives	17	0.04%
Gasoline, Fuel Oil	0	0.00%
Animal Carcasses	39	0.09%
Animal Excrement	285	0.66%
Other Special Wastes	117	0.27%
Truly Hazardous Waste	328	0.76%
		100.75%

Source: Yakima County Waste Characterization Study, 2003.

SECTION 4

WASTE REDUCTION

4.1 INTRODUCTION

According to the State's solid waste hierarchy, solid waste collection, handling, and management priorities are to be implemented in the following order: Waste Reduction; Recycling; Energy recovery/incineration or landfill disposal of separated and mixed wastes, respectively. The objectives of source separation are to remove materials from disposal that have resource value and to effectively isolate hazardous materials from improper disposal.

This section describes existing programs and potential options for reducing the amount of waste being generated and disposed in Richland. Waste reduction, discusses programs that reduce the amount of waste generated, while the next two sections, recycling and organic waste, discuss programs that reduce the amount of waste requiring disposal..

The Revised Codes of Washington (RCW), RCW 70.95.010 states the State's goals as:

- To achieve a statewide recycling rate of 50% by 2007.
- Programs be established to eliminate residential or commercial yard debris from landfills by 2012 in those areas where alternatives to disposal readily exist and are effective.
- Source separation of waste 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 mixed waste disposal.

The Revised Codes of Washington (RCW), RCW 70.95 requires that local solid waste management plans provide a waste management structure to fully implement waste reduction and source separation strategies and to process and dispose of remaining wastes in a manner that is environmentally safe and economically sound.

4.2 WASTE REDUCTION

Waste reduction is the adoption of practices that generate less waste. By decreasing the amount of waste that must be disposed, waste reduction programs decrease the need for collecting, processing and disposal of waste. Reusing a grocery bag, buying materials in bulk, and reselling unwanted items are typical examples of waste reduction.

4.2.1 Existing Programs

Most of the programs used in the City to encourage residential waste reduction are centered on education and outreach. Washington State offers a statewide, online materials exchange, www.2good2toss.com, for municipalities. This website provides a free, online bulletin board for residents to sell or give away used, but useable items, instead of sending them to the landfill.

Habitat for Humanity operates a ReStore in Richland. Habitat ReStores are retail outlets where quality, used and surplus building materials are sold. Materials sold by Habitat ReStores are usually donated from building supply stores, contractors, demolition crews or from individuals who wish to show their support for Habitat. Proceeds from ReStores help local affiliates fund the construction of Habitat houses within the community.

4.2.2 Key Issues

Waste reduction reduces the need for collection, processing, marketing, or disposal of waste by local governments. It is the State's top priority for managing solid waste and is therefore an important element in this solid waste management plan. It is important to be able to measure the results of waste reduction activities. Personal and commercial efforts in waste reduction cover a broad range and have not been well documented. Waste reduction can be shown to handle significantly more waste if the personal and commercial efforts could be measured more completely.

4.3 OPTIONS

4.3.1 Public Options

1. Establish drop-off and reuse program at Horn Rapids Landfill

Create an area at the Horn Rapids Landfill for the drop-off by residents and businesses of used equipment, toys, furniture, clothing, and other household and business items. Similar to the County hazardous materials collection facility, the materials would be made available for free or a small cost. The area would be monitored by landfill staff and/or volunteers, and would be open during landfill hours.

2. Waste reduction policies for City operations

Because jurisdictions can effectively emphasize private sector and public participation in waste reduction programs, the City should implement similar programs. Through numerous, small choices employees make each day, large amounts of waste can be prevented. Employees are encouraged to learn more about waste reduction practices and work toward implementing and promoting such practices. Examples include:

- Electronic communication instead of printed, double-sided photocopying and printing.
- Using copiers and printers capable of duplexing.
- Allowing residents to submit electronic rather than paper forms and applications.
- Washable and reusable dishes and utensils.
- Rechargeable batteries.
- Streamlining and computerizing forms.
- "On-demand" printing of documents and reports as they are needed.
- Leasing long-life products when service agreements support maintenance and repair rather than new purchases.
- Sharing equipment and occasional use items.
- Choosing durable products rather than disposable.

- Reducing product weight or thickness when effectiveness is not jeopardized in products such as, but not limited to, paper and plastic liner bags.
- Buying in bulk, when storage and operations exist to support it.
- Reusing products such as, but not limited to, file folders, storage boxes, office supplies, and furnishings.
- Mulching pruned material from parks and using on site. City employees are most knowledgeable about ways that waste can be reduced or even eliminated and their ideas are essential. Adopted policies should be reinforced through employee incentives for outstanding performance.

3. Support product stewardship policies

Product stewardship involves the actions taken to improve the design and manufacture of products to facilitate the reuse, recycling or disposal, as well as actions to establish programs to collect, process and reuse or recycle products when they are discarded.

The City supports product stewardship through participation in an electronics take-back program, and other measures in support of the State's electronic waste regulation. In the future, the City may also adopt an ordinance or policy that indicates their support of other product stewardship enhancements.

4. Implement waste reduction measurement system

Waste reduction is the top solid waste management priority, but it is inherently difficult to measure something that has not been produced. In 1996, the Department of Ecology undertook a literature review to determine the various types of waste reduction measurement methodologies that were being used around the state and country. At the same time, other entities, such as the US Environmental Protection Agency (EPA), UCLA, and Cornell, were working on a similar project. In 1997, EPA finalized a document titled "Source Reduction Program Potential Manual" that Ecology staff believed summarized the work of all parties together in a comprehensive format. In light of multiple financial and project priorities in Ecology at that time, staff recommended that it would be more efficient to use the information the EPA had developed and discontinued the project at the state level.

The work developed by EPA is based on "program potential" and whether a specific waste reduction program has the potential to reduce a significant portion of the waste stream in a cost-effective manner. The manual provides guidance for calculating program potential for the following programs: grasscycling, home composting, clothing and footwear reuse, office paper reduction, converting to multi-use pallets, and paper towel reduction.

The solid waste manager is then left to design and document a program for addressing that portion of the waste stream. Numeric measurement would likely rely on a waste audit or waste composition study after implementing the program to determine if the amount of targeted waste decreased between the two time intervals. If necessary, numeric waste reduction goals could then be reexamined and changed.

Waste reduction successes can also be measured qualitatively, through observed changes in industrial processes, purchasing patterns, shifts in public perception as identified through surveys, business policies, and city initiatives and ordinances.

4.4 RECOMMENDATIONS

The Solid Waste Advisory Committee reviewed the options discussed above and has recommended the following options:

- Conduct residential recycling survey.
- Support recognition for waste reduction successes.
- Provide technical assistance to schools and businesses.
- Establish drop off and reuse program at Horn Rapids Landfill.
- Implement waste reduction policies for City operations.
- Support product stewardship policies.
- Implement waste reduction measurement system.

SECTION 5

RECYCLING

5.1 INTRODUCTION

5.1.1 Background

Recycling is the transformation or remanufacturing of waste materials into usable or marketable materials for use other than landfill disposal or incineration, as defined in the Washington Administrative Code (WAC, Chapter 173-350-100). This practice reduces the volume of waste materials thrown away, provides a means for resources to be reused, preserves natural resources, and discourages waste. Recycling also contributes to sustainability, defined as meeting the needs of the present without compromising the ability of future generations to meet their needs.

The City has adopted a procurement policy for recycled content materials. Richland Municipal Code (RMC) Title 3.04.140 describes Richland's recycling procurement policy. The City's intent is to promote the use of recycled products and recyclable products by the City departments. The policy stimulates demand for recycled products and helps develop markets for recyclable and reusable materials. City departments are to use recycled and recyclable products whenever practical and reasonable. The contracts office maintains a list of recycled and recyclable products available to the City departments.

Richland Diversion Rates

It has been estimated that in 2010 the residents and businesses in the city generated approximately 72,047 tons of waste, and approximately 19,526 tons of this waste was diverted from disposal.

The 2010 diversion rate is calculated using the following formula:

$$\text{Diversion Rate (\%)} = \frac{\text{Diversion (tons)}}{\text{Waste Generation (tons)}} = \frac{19{,}526}{72{,}047} = 27.1\%$$

A summary of the types and quantities of materials diverted in Richland in 2010 is shown in **Exhibit 5-1**.

Exhibit 5-1. Diverted Materials 2010 (Tons)

Material Type	Tons
WOOD MATERIAL	1,591
INERT MATERIAL	3,599
COMPOST MATERIAL	10,794
METALS	317
ELECTRONICS	194
DROP BOX RECYCLING	1,788
CURBSIDE RECYCLING	340
OTHER	902
TOTAL	**19,526**

5.2 EXISTING PROGRAMS

5.2.1 Curbside Recycling

At the completion of this 2009 Plan, the City considered alternative solid waste management strategies with a primary objective to operate the most cost-effective system over a 20-year planning period.

The largest single waste stream (1/3 of all waste) was being generated by single-family homes. The results of a 20-year cost analysis suggest that a diversion of waste from disposal in the City's landfill was the least cost alternative. Curbside collection of wastes targeted for diversion would maximize the benefit of waste diversion. In February 2009 the City Council authorized a pilot program for curbside recycling. Solid Waste staff developed and implemented the curbside recycling pilot program with service beginning in May 2009.

The duration of the pilot program was from May through December 2009 with the data to be analyzed in time to make the 2010 budget proposal for a City-wide operation. A contract was let to a local vendor to process recycled materials and report costs and revenues to the City. Yard or green waste was to be processed at the landfill compost facility. Communications with the residents was paramount, with messaging beginning in March in targeted area residential utility bills, messages on the City's website, an established phone line, messaging on the municipal reader board and information available through additional means..

The pilot program was a complete success with 922 tons of recyclable items processed and diverted from the landfill. The program was then rolled out and implemented in 2010 as a voluntary program to great success with a 27% participation rate.

5.2.2 Commercial Curbside Recycling

In 2011 a survey was administered to commercial establishments on their interest in recycling. The survey was conducted by mail and of the 900 surveys mailed out, 199 establishments responded. The majority of the respondents reported they recycled frequently with the cardboard the major item being recycled.

The survey suggested two things to the City.

1. Convenience is a prerequisite for business participation in a recycling program.

2. Cost would be a significant deterrent for participation in a commercial recycling program.

The survey is still being evaluated with the end result an implementation of some sort of commercial recycling program in the near future. The full *2011 Commercial Recycling Report* can be seen in Appendix 3.

5.2.3 Recycling Drop Boxes

There are eight recycling drop box locations located throughout Richland. Residents and businesses can drop off scrap paper, plastic beverage containers, tin and aluminum cans,

newspaper, telephone directories, magazines, catalogs and calendars, glass jars and bottles, cardboard and brown paper bags. The drop boxes are located at:

- In South Richland, near ACE Hardware, 103 Keene
- Corner of Queensgate and Keene
- Wal-Mart Parking Lot, 2801 Duportail
- 1300 block of Lee Blvd. (west of Fran Rish Stadium)
- 1300 block of Jadwin (behind Texaco Station)
- 7-Eleven at 2411 George Washington Way in North Richland
- Battelle Complex, 7th and "W" Avenue
- Horn Rapids Landfill, 3120 Twin Bridges Road
- 2400 Stevens Drive (near the Hanford bus lot)

A map showing the locations of the drop-boxes throughout the City is shown on **Exhibit 5-2**.

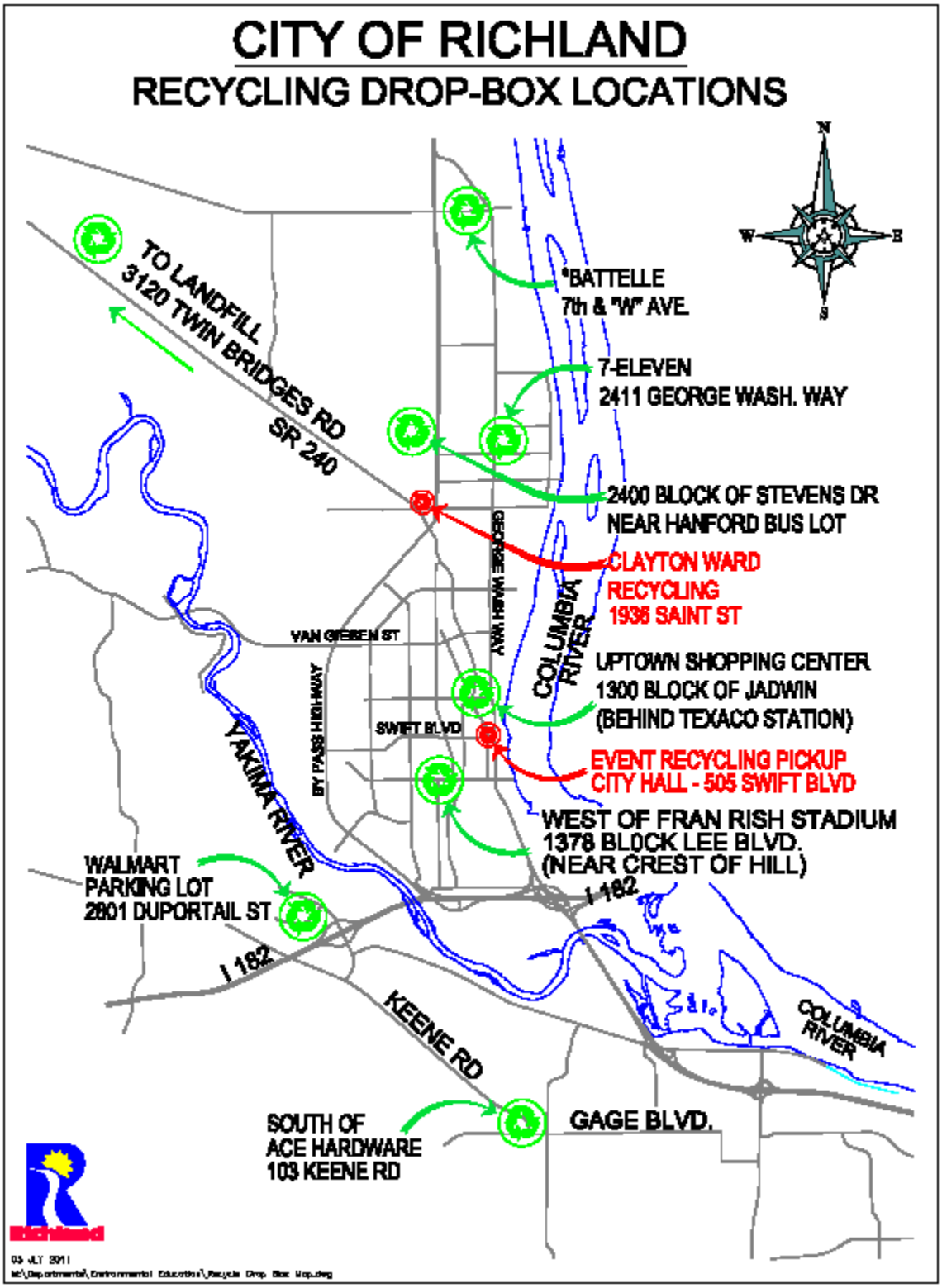
The City contracts with Clayton Ward for the collection and processing of the materials from the recycling drop boxes. A summary of the quantities recycled at the drop boxes over the last 5 years is included in **Table 5-1**.

Table 5-1. Drop Box Data

Year	Tons
2006	1,405
2007	1,635
2008	1,742
2009	1,760
2010	1,788

Exibit 5-2 shows the location of recycling drop boxes within the City of Richland.

Exhibit 5-2. City of Richland Recycling Drop Box Locations



5.2.4 Additional Recycling Opportunities

Other recycling programs available to City of Richland residents and businesses are discussed below and listed in **Table 5-2**.

Business Outreach Program: The City of Richland provides businesses with information on waste sort procedures and business recycling procedures. Two additional resources include the "Green in the Workplace" guideline and "Tips to Reduce Waste at Work" guideline.

Event Recycling: The City of Richland encourages special event recycling and offers event recycling bins at no cost to the community. Links on the city website to support event recycling include "How to Recycle at Your Next Event," "Richland Event Recycling Info Sheet," "Event Recycling Request Form and Recycling Map," and "How to Set up the Recycling Bins."

Table 5-2. Additional Recycling Opportunities

Item	How to Recycle
Rechargeable Batteries	Can be placed in containers at **Radio Shack**, Office Depot, **Home Depot** and **Staples Office Supply Stores**.
Cell Phones	There are several ways to sell, donate or recycle unneeded cell phones. • Take to the **Richland Library** or the collection box at **Richland City Hall** • Contact **Domestic Violence** to donate at 582-9841 • Contact your local school to see if they are collecting them for fundraising activities • Sell to companies like http://cash4digitaltrash.com • Donate to http://donateaphone.com or https://www.cellphonesforsoldiers.com • Send phone, charger and accessories to **Call to Protect**, 2555 Bishop Circle, Dexter MI 48130-1563
Electronics	Drop off computer monitors, drives, laptops and TV's (no accessories) at: **Clayton Ward Recycling**, 1936 Saint Street, Richland, 375-4086 **Horn Rapids Landfill**, 3120 Twin Bridges Road, Richland, 942-7387 **Packs Auction Service**, 511 9th St., Benton City, 588-4020 **Stay Tan West**, 3680 Van Giesen, West Richland, 967-8290
Computer Disks	Go to for info http://www.greendisk.com
Foam Packing Peanuts	Save and reuse or take to a local mailing service for reuse (call first). **The Mailing Center**, 302 Torbett St, Richland, 943-0693 gives them away free, depending on availability. The non-profit **Surgical Implant Generation Network** accepts peanuts

Table 5-2. Additional Recycling Opportunities

Item	How to Recycle
	to ship medical devices overseas. Call 371-1107 for more info.
Greeting Cards	Take to the **Richland Community Center**, 500 Amon Park Drive, Richland, 942-7529
Fluorescent Light bulbs	Take to the service counter at any **Home Depot Store** or the **Benton County PUD**.
Pallets	Take to the **Horn Rapids Landfill**, 3120 Horn Rapids Road, Richland
Prescription Eye Glasses	Donate to **Kiwanis Club**. Donation bins are set up at participating, **Safeway, Costco,** and **Richland Community Center.**
Plastic Shopping Bags	Take to major grocery stores in Richland.
Propane Tanks	Propane tanks can be dropped off at the collection site at the **Horn Rapids Landfill**, 3120 Twin Bridges Road, **Amerigas Propane**, 204 N. Fruitland, Kennewick or **Oxarc**, 716 S. Oregon, Pasco. Some may charge if over 5 gallons.
Toner and Laser Jet Cartridges	Return to the manufacturer using the prepaid sticker that accompanies new printer cartridges or donate to your local school.
Tires	Tires can be exchanged when purchasing new or take to the **Horn Rapids Landfill**, 3120 Twin Bridges Road for a nominal fee.
Wood	Wood waste, including tree branches lumber, can be taken to the **Horn Rapids Landfill**, Richland for free disposal. Business wood waste, dirty wood and stumps will be taken for a nominal charge.

A number of private companies operate recycling facilities in the Tri-cities area that are open to the public. Materials are either accepted for free or customers are paid for the materials based on market rates. A list of facilities is included in **Table 5-3**.

Table 5-3. Regional Recycling Centers

Facility	Location	Types of Materials Recycled												
		Cardboard	Newspaper	Mixed Paper	Magazines	Plastic 1 & 2	Aluminum Cans	Non ferrous scrap	Brass	Copper	E-Waste	Ferrous Scrap	Stainless steel	Wire
Twin City Metals	Kennewick						×	×	×	×	×	×	×	×
Mayflower Metals	Prosser							×	×	×		×		
Tommy's Steel and Salvage	Pasco							×				×		
Basin Recycling	Pasco			×			×							
Pacific Steel and Recycling	Kennewick, Pasco	×	×	×	×		×	×	×	×		×	×	
Waste Management	Kennewick					×	×					×		

5.3 KEY ISSUES

Following is a summary of several key issues surrounding recycling programs in the city.

5.3.1 Designation of Recyclable Materials

The Washington Administrative Code (WAC 173-350-100) defines Recyclable Materials to mean, "those solid wastes that are separated for recycling or reuse, including, but not limited to, papers, metals, and glass that are identified as recyclable material pursuant to a local comprehensive solid waste plan." In order for any material to be considered a recyclable material under Chapter 173-350, it must be identified as such in the local comprehensive solid waste management plan. If a material is not identified in the plan as recyclable, then the ability of the person/company wanting to recycle this material and be able to benefit from some of the exemptions granted under Section 350 may not exist. If materials are not designated as recyclables, they remain regulated as solid wastes.

The addition or deletion of materials accepted for recycling will require ongoing evaluation and be based on several factors such as market stability and collection and processing costs. As required by the planning guidelines, criteria has been developed for adding or removing materials from the above list of materials.

The following will be considered for adding new materials:

- Local markets and/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 given material occurs.

- Sufficient quantity of the material is available in the waste stream.
- The material can be collected, processed, shipped and marketed cost effectively based on the City of Richland (COR) cost of service model.
- Development of new recycling markets.
- Other conditions not anticipated at this time.

Removing materials from the list requires:

- The market price becomes so low that it is no longer cost-effective to collect, process and/or ship to markets based on the COR cost of service model.
- No market can be found for an existing recyclable material, causing the material to be stockpiled with no apparent solution in the near future.
- Other conditions not anticipated at this time.

5.3.2 Listing of Recyclables

The **Table 5-4** lists the recyclable materials that Richland SWAC adopted during the review of this Plan.

Table 5-4 Designated Recyclable Material for Richland

Paper Products
Plastics
Ferrous and Non-Ferrous Metals
Glass
Cardboard
Electronics
Organic Waste
Construction Wood Waste
Concrete
Brick
Asphalt

5.3.3 Urban and Rural Designation

The planning guidelines recognize that there are differences in the services that can be offered to urban versus rural areas for solid waste services. The guidelines require solid waste management plans to identify urban/rural service areas for the purpose of determining:

- Required recycling programs for single and multi-family residences.
- Voluntary services for rural areas such as conveniently located drop-off boxes and buy-back centers.

The City of Richland operates as an urban area and offers voluntary curbside recycling programs alongside its refuse services. Currently the reason the program is voluntary is our market area does not support a mandatory program based on the COR cost of service model where the green waste program does. The City will also undertake efforts to make sure city adopted waste services are as accessible in the annexed franchise areas as they are from the City's own collection system.

5.4 OPTIONS

1. Mandatory residential recyclables collection

Under this option, residents would be charged for automated curbside collection of recyclables from residents in commingled (single-stream) containers. Materials would be collected every other week the same day as refuse. Recyclables would be processed at a materials recovery facility or other recyclables processing facility. Residential curbside programs have shown diversion rates of 15% to 45%, depending on the percentage makeup of the waste stream, public participation, commitment to implementation, and the time frame used in the assessment.

2. Continue and enhance existing recycling programs for residential and commercial customers

This option includes a number of programs for continuing existing recycling programs for residential, commercial, industrial, and institutional sectors, including drop-off sites, technical assistance, education and outreach,. It also would include the design and implementation of methods to monitor diversion rate and efficacy of programs, and regularly assessing need for modifications or new policies and programs. The option also includes the consideration of adopting a City-specific recycling goal. Decisions to add new materials would include an economic evaluation based on the COR cost of service model.

3. Periodic evaluation of adding or removing materials from recycling programs

The City could consider adding new material types to drop-off centers operated by the City or promoting additional recycling services offered by private recycling businesses, such as high-grade paper, mixed paper, or electronics waste. Enhancing collection of materials for residents and businesses can result in increases in diversion rates ranging from 2% to 5%, depending on the types of materials targeted, percentage makeup of the waste stream, public participation, commitment to implementation and the time frame used in the assessment.

4. Continue and expand existing commercial recycling activities, including incentives, technical assistance and recognition programs

Existing programs include the business outreach program and green recognition program. New programs could include on-site waste assessments, case studies, and additional technical assistance.

5.5 RECYCLING GOALS

Richland has established the following goals for recycling:

- Identify the types of recyclables and establish programs to efficiently and effectively recycle and market these materials.
- Promote programs and provide incentives that encourage and support waste reduction, reuse and recycling.
- Educate the public on the importance of waste reduction, reuse, and recycling.
- Encourage and support the research and development of new recycling technologies.
- Develop glass recycling/reuse programs.
- Ongoing evaluation of recyclable waste streams and market economics for potential additions to the allowable recyclables.
- Curbside residential recyclables collection.
- Enhance existing waste and recycling programs for commercial customers.

SECTION 6

ORGANIC WASTE

6.1 INTRODUCTION

Organic waste is a major component of municipal solid waste. Most originates from household waste (green yard waste) but commercial, institutional and industrial waste can also contain significant proportions of organic waste e.g. market waste. Organic waste is biodegradable and can be processed in the presence of oxygen by composting.

The state planning guidelines require yard waste collection programs where there are "adequate markets or capacity for composted yard waste within or near the service area to consume the majority of the material collected."

6.1.1 Background

Richland offers a series of free composting and waste reduction workshops. The workshop covers solid waste issues and a "How to" compost program. Each participant receives a free composting bin and a sixty-four page book.

6.2 EXISTING PROGRAMS

6.2.1 Horn Rapids Compost Facility

A waste stream identified in the previous Solid Waste Management Plan was the disposal of yard or green waste. Five acres was set aside at the Landfill for a newly developed Horn Rapids Compost Facility. The facility was designed and began construction in 2009 and completed in 2010.

The Horn Rapids Compost Facility is the new treatment facility for biosolids coming from the City's Wastewater Treatment Plant, the new residential green waste program and green waste self-haul. This new composting program will save landfill space, help meet the State's recycling goal and provide compost materials to the public. The compost facility opened in 2010 and accepts residential green yard waste with no charge to the resident. The program is on track to process about 800 dry tons of biosolids and 1500 tons of wood waste in 2011. The amount of organic material will increase significantly in the second half of 2011 when approximately 1200 tons of curbside yard waste is screened and taken to the compost pad.

Several regional composting facilities also accept various types of organic waste. **Table 6-1** is a list of the regional composting facilities.

Table 6-1 List of Regional Composting Facilities

Facility Name	Operator	Location	Feedstock Accepted
Soil Conditioners, Inc.	Private	Yakima County	Green Waste, Composted Steer Manure
Natural Selection Farms	Private	Yakima County	Green Waste Only
Columbia Compost	Private	Columbia County	Green Waste, Biosolids
Mesa Compost Facility	Public	Franklin County	Green Waste Only
Little Hanaford Farms	Private	Lewis County	Facility Shutting Down, Not Accepting Any More Material
HVL Compost Factory	Private	Pierce County	Green Waste; Food Waste; Ag Waste
Purdy Compost Facility	Private	Pierce County	Green Waste Only
Silver Springs Organics	Private	Thurston County	Green Waste; Pre And Post Consumer Food Waste; Ag Waste
City of Walla Walla Composting (Regional Center)	Public	Walla Walla County	Green Waste Only

6.2.2 Green Yard Waste Recycling Program

At the completion of this 2009 Plan, the City considered alternative solid waste management strategies with a primary objective to operate the most cost-effective system over a 20-year planning period.

The largest single waste stream generated by single-family homes is green yard waste. The results of a 20-year cost analysis suggest that a diversion of green waste from disposal in the City's landfill was the least cost alternative. Curbside collection of wastes targeted for diversion would maximize the benefit of waste diversion. A 2009 pilot program was a complete success with approximately 431 tons of curbside green yard waste diverted from the Landfill to the Horn Rapids Compost Facility. The program was then rolled out and implemented in 2010 at the same time the compost facility was completed and opened. In 2010 3,736 tons of green yard waste was diverted through a curbside recycling program. In May and June of 2011 more green waste was

picked up by weight in the residential collection program than garbage.

6.3 KEY ISSUES

Yard waste comprises a significant portion of the recyclable waste stream. Backyard composting and mulching lawnmowers can lessen the impact of grass clippings and leaves. Brush, limbs and other woody wastes need to be addressed. Community clean-up days where residents are allowed to self-haul waste to disposal facilities show an estimated 40% of material is "woody waste." Chipping of this material reduces volume and creates a material that is reusable as mulch, animal bedding, and soil amendment.

Washington State has a statewide goal to eliminate yard debris from landfills by 2012 in those areas where alternatives exist. Additionally, one of the initiatives of the State's Beyond Waste Plan is to increase recycling for organic materials. Furthermore, as of December 30, 2000, burning of residential and land clearing debris is not allowed within the urban growth areas of cities or where there are reasonable alternatives. Many restaurants, institutions, supermarkets, and food suppliers often have leftover food, which can be a good candidate for diversion, as well as provide greater uses for this resource. Food waste is often characterized as "pre-consumer" or "post-consumer." Pre-consumer food waste typically is generated as a result of commercial/industrial food production or preparation for consumption. Post-consumer food has been served to consumers and is not recoverable for human consumption.

In 2005, a biomass inventory and bioenergy assessment was completed for Washington State. The goal of the study was to inventory Washington's bioresources as a first essential step to implement the state's Beyond Waste strategy for reduction of organic residuals in solid waste. This inventory also is seen as a first step toward a sustainable energy policy and vision within the state.[1]

The project geographically identified 45 potential biomass sources in Washington at a county level. The biomass inventory was then converted to potential energy production using anaerobic digestion (for non-woody plants) and simple combustion (for woody plants) as representative conversion technologies. Electrical energy production was the calculated product for this study; however, the report notes the need for additional study for other products such as fuels and chemical bioproducts.

6.4 OPTIONS

6.4.1 Organics

1. Implement curbside green waste collection for commercial customers

[1] Washington State University and Washington State Department of Ecology, *Biomass Inventory and Bioenergy Assessment: An Evaluation of Organic Material Resources for Bioenergy Production in Washington State*, December 2005.

This option incorporates a voluntary curbside green waste collection service for commercial customers.. The service would be provided every other week. The materials collected would be processed for mulch, composting, or other uses at the Horn Rapids Compost Facility.

2. Encourage food waste management by commercial sector

Local food service establishments would be encouraged to participate and the City's commercial collection system will investigate food waste collection services. Programs may include food donation; conversion for animal feed and/or rendering; and compost. This option could also encourage regular reporting of food waste diversion to local and state recycling agencies for monitoring and evaluation purposes.

3. Biomass processing research and development

Biomass is any sort of vegetation—trees; grasses; and plant parts such as leaves, stems, and twigs. During photosynthesis, plants combine carbon dioxide from the air with water to form carbohydrates, which form the building blocks of biomass. Biomass can produce electricity, heat, liquid fuels, gaseous fuels, and a variety of useful chemicals, including those currently manufactured from fossil fuels. Research and development in this area of waste management is increasing, and the City supports the continued development of these technologies by eliminating any barriers to facility development, and by supporting research opportunities.

6.5 RECOMMENDATIONS

The Solid Waste Advisory Committee reviewed the options discussed above and has recommended the following options:

- Provide technical assistance to schools and businesses.
- Implement waste reduction policies for City operations.
- Implement waste reduction measurement system.
- Curbside residential recyclables collection.
- Enhance existing programs for commercial customers.
- Curbside collection of food waste by commercial sector.
- Encourage food waste management by commercial sector.
- Curbside commercial collection of green yard waste.
- Encourage food waste management by commercial sector.

SECTION 7

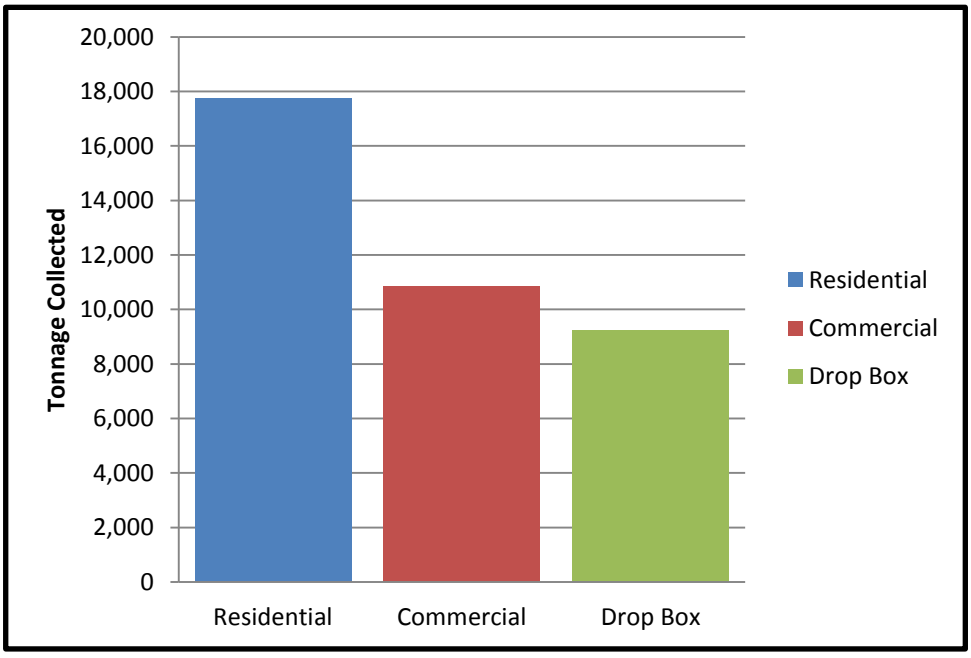
COLLECTION, TRANSFER AND DISPOSAL

7.1 COLLECTION

7.1.1 Existing Conditions

The City of Richland's Public Works Department, Solid Waste Division provides residential, commercial and roll-off box collection services in the city. A breakdown of the tonnage collected by service type in 2010 is shown in **Exhibit 7-1**. As indicated, residential customers comprise approximately 47% of the collection (by weight), and commercial and roll-off customers each contribute about 28% and 24%. The City's collection vehicles haul all of the waste directly to the Horn Rapids landfill.

Exhibit 7-1. City of Richland 2010 Collection Tonnage by Service Type



Residential

Richland city crews collect garbage on a Monday through Friday schedule. The City utilizes automated curbside collection vehicles. The current monthly rate for basic refuse collection service which includes a container for household waste and container of green yard waste is $16.90 per month. To participate in the curbside recycling program is an additional $5.70 per month.

Commercial/Roll-off

The City provides collection services to commercial businesses in the City. Approximately 800 tons per month, or 10,000 tons per year was collected from 845 commercial accounts in 2010. Approximately 800 tons per month, or 9,200 tons per year was collected from roll-off accounts in 2010. Private haulers provide recycling services to some City businesses.

The existing commercial rates are indicated in **Table 7-1**.

Table 7-1 COMMERCIAL COLLECTION RATES

Container Size	Collection Frequency per Week					Unscheduled Pickup	Commercial Call Back	Container Size Change Fee
	1X	2X	3X	4X	5X			
100 gallon	$18.95	$37.90	$56.85	$75.80	$94.75	$18.20	$26.00	$50.00
1 yard – 300 gallon	52.25	104.45	156.65	208.75	261.00	49.20	26.00	50.00
2 yard	80.00	160.05	240.05	320.05	400.05	28.20	26.00	50.00
4 yard	145.00	290.00	435.00	579.90	724.90	48.10	26.00	50.00
5 yard	168.80	337.70	506.60	675.40	884.25	58.30	26.00	50.00
6 yard	192.75	385.50	578.15	770.85	963.55	68.35	26.00	50.00
8 yard	221.75	443.50	665.25	887.00	1,108.75	88.40	26.00	50.00
Commercial Cardboard Recycling	40.30	80.55	20.80	160.95	201.25	24.35	26.00	50.00

* Compacted front and rear loader refuse will be charged at two times (double) the uncompacted rate.

7.1.2 Key Issues

The City collects residential waste five days per week using automated collection vehicles. Over the past five years, the number of residential customers has increased as the city has experienced population and housing growth. As a result, in 2008 the City evaluated its residential routes and re-routed the collection routes; approximately 6,700 of the customers (or 42%) had a change in their collection day. The new route structure incorporated a fifth trash truck, and represented the first increase in 15 years. The change was implemented to reduce collection time and help contain fuel and maintenance costs for the City.

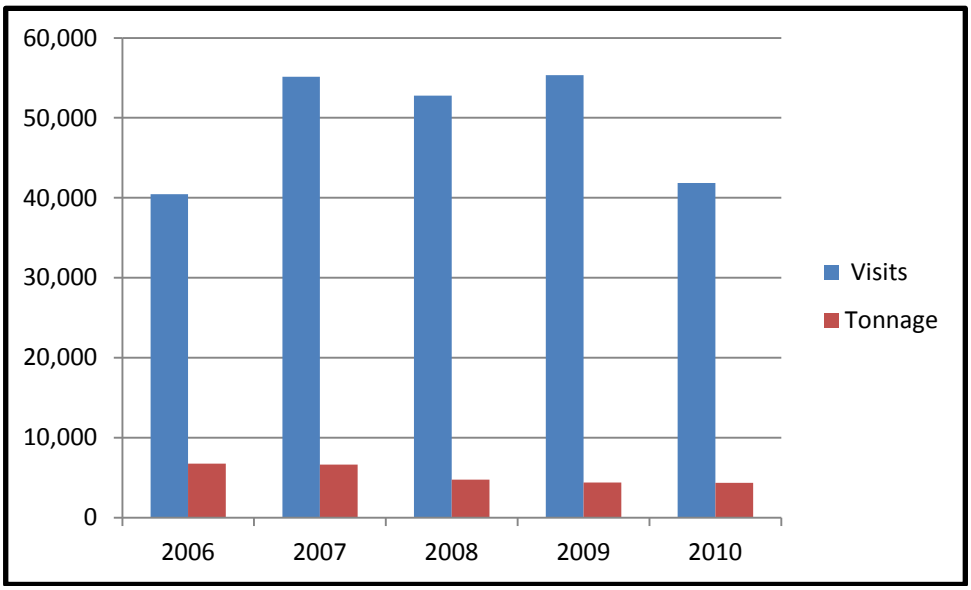
7.2 TRANSFER

7.2.1 Existing Conditions

The City operates a transfer station at the Horn Rapids Landfill. The transfer station is utilized by self-haulers for the disposal of waste, and eliminates the need for these customers to access the operation area of the landfill.

Historical data for the transfer station use (number of users and tonnage) is shown in **Exhibit 7-2**. The number of visits has averaged over 49,000 per year over the past six years, and tonnage has averaged 5,400 tons per year.

Exhibit 7-2. Horn Rapids Transfer Station Visits and Tonnage



7.2.2 Key Issues

Presently, all of the waste collected by City crews is transferred directly from the routes to the Horn Rapids Landfill. Trucks proceed to the landfill when they reach their capacity. As the City has experienced growth, particularly in the southern portions, the time and distance it takes to travel to the landfill, unload, and then resume collection has increased. Therefore, the City considered the need to construct and operate a new transfer station somewhere in the City. A new transfer station could potentially reduce travel time, costs, operations and maintenance of the City's collection vehicles, and therefore provide cost savings to the City. As part of the previous Solid Waste Plan, the consultant prepared an independent review of the economic factors associated with the construction and operation of a new transfer station in the City. It was determined a new transfer station was not economically feasible at this time.

7.3 DISPOSAL

7.3.1 Existing Conditions

The City of Richland owns and operates the Horn Rapids Landfill, a 114-acre site. Approximately 46 acres are permitted for solid waste disposal. Adjacent to the permitted area is a separately permitted area of approximately 25 acres for the land application of biosolids, including 5 acres for the compost facility plus approximately 14 acres which are occupied with facilities that include:

- An office/toll booth and a scale for weighing incoming loads.
- A transfer station for use by self-haul residential and small commercial waste and recyclables haulers.
- An area for wood waste, yard waste, electronics, metals
- An area for land farming of petroleum contaminated soils generated in Benton County.

The landfill operates under a solid waste disposal permit issued by the Benton-Franklin Health District in compliance with provisions of Chapter 173-351 WAC. The existing landfill was constructed prior to Subtitle D regulations, and therefore was not designed with a bottom liner or leachate collection system. A 4-acre vadose monitoring zone has been established within the northeast corner of the permitted 46-acre disposal area. Small amounts of organic contamination have appeared in the water samples collected at the property boundary. Additional wells were installed in 1998 closer to the active disposal area to further define concentration levels of contaminates. The City of Richland has finished the remedial investigation, as required by the Toxics Control Act, and designed a landfill gas extraction system that has been approved by the Department of Ecology. Part of the gas system design also includes a modified closure design that extends the landfill's capacity to December 2013, which has been approved by Ecology. Due to the advent of the voluntary recycling program the landfill's capacity has been extended to December 2018. Landfill staff has performed detection monitoring to determine the origin and extent of the contamination and monitoring wells for methane gas dispersion have been installed. Waste disposal activities within the currently permitted area are projected to continue until 2018. The City's financial assurance for Closure/Post-Closure is being funded by a surcharge collected against each ton of waste crossing the scales. The City has completed a Master Plan for the future of the site.

The Landfill is open to city and non-city residents. City residents are allowed to dispose of waste at the Landfill for $10 a visit. Residents must be present, have proper identification and show their City of Richland utility bill in order to dispose of their waste. Richland commercial and non-Richland residential and commercial customers are charged for disposal according to the rate schedule established at the Landfill. The rates are assigned by vehicle type for residential waste, and by vehicle type and weight for commercial and construction debris. Some exceptions can be made for Richland residential waste hauled in a commercial vehicle, as determined by the Landfill site superintendent. In addition, rates are also established for different types of wastes. The 2010 rate schedule is shown in **Table 7-2**.

Table 7-2 SELF-HAUL TO RICHLAND LANDFILL
RESIDENTIAL

Customer	Load Size	Rate	Description/Qualifiers
Richland Resident	Up to 1,200 lbs. Over 1,200 lbs.	$10.00 See Commercial Rate	Ordinary residential waste including, but not limited to, construction and demolition waste and extra refuse.
Richland Resident	All	$0.00	Clean yard waste.
Non-Richland Resident	Up to 1,200 lbs. Over 1,200 lbs.	$20.00 See Commercial Rate	Ordinary residential waste including, but not limited to, construction and demolition waste and extra refuse.
Non-Richland Resident	Up to 1,200 lbs.	$10.00	Clean yard waste.
Appliances Containing CFCs – Benton County Residents Only	Per appliance	$43.00 each	Appliances containing chlorofluorocarbons, including, but not limited to, refrigerators and air conditioning units.
White Goods – Benton County Residents Only	Per appliance	$5.70 each	Appliances including, but not limited to, stoves, washers, dryers, microwaves, and hot water tanks.
Dead Animals – Benton County Residents Only	Small Animals Large Animals	$75.00 or $150.00 each	Small Animals – dogs, cats, etc., generally less than 100 lbs. Large Animals – horses, cattle, etc., approximately 100 lbs. or more

Table 7-3 SELF-HAUL TO RICHLAND LANDFILL
COMMERCIAL

Customer	Load Size	Rate	Description/Qualifiers
Richland Commercial	Up to 1,200 lbs.	$28.00 per load	Garbage, refuse, rubbish and construction remodel demolition waste.
Non-Richland Commercial	Up to 1,200 lbs.	52.00 per load	
Richland Commercial	Over 1,200 lbs.	49.00 per load	
Non-Richland Commercial	Over 1,200 lbs.	73.00 per load	
Richland Commercial	Per ton	25.00	Commercial disposal of concrete, asphalt, rock or dirt.
Non-Richland Commercial	Per ton	49.00	
Richland Commercial	Per ton	20.00	Clean yard waste.
Non-Richland Commercial	Per ton	25.00	
Tires Only	Car tires	2.60	Disposal of tires. Cost is the charge per tire and the same charge applies to all customers.
	Truck tires	6.50	
	Heavy equipment	22.10	
Tires with Rims	Car tires	5.20	
	Truck tires	9.10	

Table 7-3 SELF-HAUL TO RICHLAND LANDFILL
COMMERCIAL

Customer	Load Size	Rate	Description/Qualifiers
	Heavy equipment	22.10	

The rate schedule, existing in the previous Plan had been cumbersome for the Landfill operations and administration to implement due to its complexity and subjectivity. The revised rate structure in Tables 7-2 and 7-3 simplifies implementation at the scale house and is the result of a rate study completed in 2010.

Data on the use of the landfill is available for the past 5 years, including number and types of users, and volume and weight of materials disposed. Historical data for landfill transactions and disposal for the last 5 years is summarized in **Table 7-4**.

Table 7-4. Horn Rapids Landfill Annual Visits and Tonnage

Year	Visits	Tons
2005	44,089	63,435
2006	51,356	66,186
2007	55,145	68,183
2008	51,947	65,932
2009	75,151	58,327
2010	57,393	52,521

As indicated in the above table and chart, customer visits to the landfill and annual tonnage had increased during the period from 2005 to 2007. That increase is most likely as a result of a similar increase in the City's population over this time period, between 2 and 4%. There was a decline in use during 2008, which is attributable to the economic downturn that has been experienced in most if not all sectors of the economy, including solid waste. In 2009 residential visits of loads under 1,200 pounds swelled to over 47,000 while self-haul commercial visits declined slightly.

This number of visits was likely to require increased staffing at the transfer station so the City considered and adopted a minimum fee of $10.00 for small loads at the transfer station. In 2010 residential visits declined to 35,600 visits and allowed the City reduce the new residential base collection rate from a proposed $17.80 per service to $16.90.

The large decrease in tons from 2008 through 2010 is largely concrete that has been diverted from the landfill to recycling.

7.3.2 Key Issues

Landfill Capacity

The current Landfill site has approximately 6.5 years of space left for disposal. The current space will be used up sometime in 2018 at the City's current rate of waste placement. Expanding diversion programs to commercial customers and to further expand construction and demolition recycling will add more time to the use to the current facility. After the current facility is full the City will need to develop and use a new permitted space or long haul waste to a regional landfill.

Long-Haul to Regional Landfill

If the City chooses to close the Horn Rapids Landfill, the City's waste will need to be transferred to a regional landfill for disposal. Regional landfills considered as viable options for the City to utilize are included in **Table 7-5**. The data on the table indicates the estimated per ton charge for the City to dispose of waste at one of the regional landfills. Additional costs would be incurred for transfer of the materials from Richland collection trucks to transfer trucks, as well as transportation to and from the remote landfill.

Table 7-5. Regional Landfills

Facility Name	Operator	Location	Disposal Fee ($/Ton)
Columbia Ridge	Waste Management	Arlington, OR	$25.00
Roosevelt	Rabanco	Klickitat County, WA	$22.75
Finley Buttes	Waste Connections	Morrow County, OR	$30.00
Greater Wenatchee	Waste Management	Douglas County, WA	$45.32

Landfill Rate Structure

The landfill self-haul fee structure had been in effect for many years. The structure was confusing and burdensome for users and operator alike. Furthermore, free disposal for residents has been a practice since the landfill opened. The rate structure did not put any "value" on the landfill capacity, nor incentivize diversion (source reduction or recycling) by residents. The City conducted a rate study in 2009 with implementation in 2010 that evaluated the existing landfill and collection rates, and determined optimum rates to be charged for the existing and future operations.

At this time the landfill is open to city and non-city residents. City residents are allowed to dispose of non-green waste at the landfill for $10 a visit, with no charge for green waste. Residents must be present and have proof of residency. Richland commercial and Non-Richland residential and commercial customers are charged for disposal according to the rate schedule established in the City Municipal Code. The rates are assigned by vehicle type for residential waste, and by vehicle type and weight for commercial and construction debris.

7.4 OPTIONS

1. Expand Horn Rapids Landfill

The City is evaluating the feasibility of expanding the Horn Rapids Landfill. Initial studies indicate the landfill could be expanded to accommodate seven million tons, or approximately 65,000 tons per year for 66 years, depending on the quantity of material disposed per year. The landfill would be constructed in compliance with Subtitle D regulations for sanitary landfills, and would accept municipal solid waste for disposal. The expanded facility would provide convenient disposal opportunity for residents and businesses at the same level of service as the existing facility. The estimated cost to expand the Landfill is $33 million over the 53 year life of the new facility. The first phase of the new Landfill will be about $6 million to begin operations. Operations and maintenance costs would be similar to existing costs. Expansion would maintain the system operations within the City, and provide a level of independence to the City from the vulnerabilities to the private sector.

2. Close Horn Rapids and Long-Haul MSW Out of City of Richland

Without expansion, the Horn Rapids Landfill will reach capacity sometime by December 2018 At that time, the Landfill would be required to cease accepting municipal solid waste for disposal. Waste would then be transferred to regional landfills in either Washington or Oregon. The City would either enter into an agreement with a private hauler for transfer of the waste, or the City could purchase transfer vehicles and long-haul the waste to a disposal site.

7.5 RECOMMENDATIONS

The Solid Waste Advisory Committee reviewed the options discussed above and has recommended the following option:

- Expand Horn Rapids Landfill
- Create rates to support Plan goals
- Provide collection services to all City residents consistent with adopted service levels and plan goals and objectives.

SECTION 8

MISCELLANEOUS WASTES

8.1 INTRODUCTION

This section includes discussions of various waste types generated in the City of Richland that are categorized, processed, handled, or otherwise addressed separately or differently than the wastes that are addressed in the other sections of this plan. Waste types examined in this section include:

- Construction, demolition, and land clearing inert debris.
- Wood waste.
- Agricultural waste.
- Tires.
- Biomedical waste.
- Petroleum contaminated soils.
- Asbestos.
- Electronic waste

Each strategy for the management and handling of these miscellaneous waste types is designed to be consistent with policies and programs for other waste types, as well as with the general solid waste management goals expressed in this Plan. The analysis of each miscellaneous waste type includes a description of existing practices, key issues, management options, and recommendations.

Management goals for these waste types are similar to those for other waste materials:

- Satisfy state priorities for waste management.
- Provide for efficient collection and transfer of waste materials.
- Continue public outreach and education efforts regarding waste reuse, reduction, and disposal.

Under the Washington State Dangerous Waste Regulations (WAC 173-303-073), certain hazardous wastes may be classified as "special wastes" if they pose a relatively low risk to human health and the environment. These special wastes are exempt from some of the provisions of the Dangerous Waste Regulations and may be handled with a level of protection that is intermediate between regulated hazardous waste and nonhazardous waste. Under certain conditions, these special wastes may be handled through municipal solid waste transfer stations and landfills.

To qualify as "special waste" under the Dangerous Waste Regulations, the waste must be in a solid form only and must not be regulated by the EPA as a hazardous waste. Certain corrosive or low-toxicity wastes (for instance, ash from operations involving wood burning) may qualify as special wastes. Special wastes are typically not accepted at municipal solid waste facilities. For example, when landfilled, asbestos requires special permitting provisions.

Under Washington State law, any generator wishing to manage hazardous wastes as special wastes should consult with the Ecology and, as appropriate, solicit the services of qualified waste management contractors for handling and managing the wastes. Hazardous wastes are not accepted at municipal solid waste facilities unless they are household hazardous waste or from small waste generators, and in those cases, the waste is collected at County operated Moderate Risk Waste facilities located at the Horn Rapids Landfills and other locations in Benton County.

8.2 CONSTRUCTION DEMOLITION, LANDCLEARING AND INERT DEBRIS

Construction, demolition, and land clearing (CDL) inert debris consists of the materials generated during the construction, renovation, and demolition of buildings, roads, and bridges. The primary difference between demolition and inert waste is that demolition waste is considered susceptible to decomposition, whereas inert waste is considered resistant to decomposition. This waste stream often contains:

- Concrete.
- Wood (from buildings).
- Asphalt (from roads and roofing shingles).
- Gypsum (the main component of drywall).
- Metals.
- Bricks.
- Glass.
- Plastics.
- Salvaged building components (doors, windows, and plumbing fixtures).
- Trees, stumps, earth, and rock from clearing sites.

That is why the new regulations WAC 173-350 require liners and leachate collection systems for Limited Purpose Landfills that dispose of CDL, while liners and leachate collection is not required of inert landfills. Under WAC 173-350-400, Limited Purpose Landfills include, but are not limited to, landfills that receive segregated industrial solid waste, construction, demolition and landclearing debris, wood waste, ash (other than special incinerator ash), and dredged material. Limited Purpose Landfills do not include Inert Waste Landfills, Municipal Solid Waste (MSW) landfills regulated under WAC 173-351, landfills disposing of special incinerator ash landfills regulated under Dangerous Waste Regulations, or chemical waste landfills. Inert Waste Landfills are landfills that receive only inert wastes regulated under WAC 173-350-410.

In general, various types of materials come from CDL activities and those materials are managed and regulated differently. **Table 8-1** lists the types of waste, their definition and the regulations that apply to each type of waste.

Table 8-1. CDL&I Waste Definitions

Type of Waste	Washington Administrative Code Definition
Demolition/Construction Disposed in Limited Purpose Landfills per WAC 173-350-400	Washington State Regulations define demolition waste as "consisting of, but not limited to, concrete, brick, bituminous concrete, wood and masonry, composition roofing and roofing paper, steel, and minor amounts of other metal like copper. Plaster (i.e., sheetrock or plaster board) or any other material other than wood, that is likely to produce gases or a leachate during the decomposition process and asbestos wastes are not considered to be demolition waste."
Inert Disposed in Inert Landfills per WAC 173-350-410	Cured concrete that has been used for structural and construction purposes, including embedded steel reinforcing and wood, that was produced from mixtures of portland cement and sand, gravel, or other similar materials; asphaltic materials that have been used for structural and construction purposes (e.g., roads, dikes, paving) that were produced from mixtures of petroleum asphalt and sand, gravel, or other similar materials. Waste roofing materials are not presumed to be inert; brick and masonry that have been used for structural and construction purposes; ceramic materials produced from fired clay or porcelain; glass, composed primarily of sodium, calcium, silica, boric oxide, magnesium oxide, lithium oxide or aluminum oxide. Glass presumed to be inert includes, but is not limited to, window glass, glass containers, glass fiber, glasses resistant to thermal shock, and glass-ceramics. Glass containing significant concentrations of lead, mercury, or other toxic substance is not presumed to be inert; and stainless steel and aluminum.
Solid Disposed as municipal solid waste per WAC 173-351	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.
Hazardous Disposed in hazardous waste facilities per WAC 173-303	All dangerous and extremely hazardous waste, including substances composed of both radioactive and hazardous components.
Wood (Landclearing) Disposed in Limited Purpose Landfills per WAC 173-350-400	Solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, Demolition, handling, and storage of or particles containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome0-arsenate.

State law prohibits the open or unregulated burning of "treated wood, metal, and construction debris," among other things. Landclearing materials may be burned outside specified urban boundaries, but within the County, only with a special permit. Burn regulations apply to "open" burning, not to regulated facilities such as a WTE Facility.

8.2.1 Existing Conditions

A study conducted by the City of Richland in 2005, estimated that 22.7% of the waste brought to the Horn Rapids Landfill was C&D.[2] This estimate was derived using two methodologies. One method used construction permit data combined with average generation rates. The second method used landfill data for accounts likely to dispose of C&D, including commercial roll-off customers and self-haulers, both Richland and non-Richland residents. The average of the estimates generated by both methodologies was used for the report. Applying the 22.7% to the total amount of waste disposed at the landfill in 2007, it is estimated that nearly 15,500 tons of C&D waste was disposed at the landfill.

There are limited recycling and reuse opportunities for C&D waste in Richland. It is estimated the majority of C&D materials are delivered to the Horn Rapids Landfill, where the materials are either reused, recycled, or disposed. The City uses a tub grinder to pulverize wood material for use as intermediate cover material at the Landfill.

The Graham Road Limited Purpose Landfill, located in Spokane County, is owned and operated by Waste Management of Washington, Inc. Graham Road is a Limited Purpose Landfill that accepts construction and demolition debris, asbestos, tires, wood, concrete, asphalt, special waste, petroleum-contaminated soils, creosote-contaminated wood, and railroad ties.

Opportunities do exist for scrap metals, asphalt, and concrete recycling in the City and region. **Table 8-2** contains a list of facilities in the region that accept C&D materials. Concrete and asphalt pavement is crushed and used as base material for new construction or as aggregate in new asphalt. Wood waste is processed and sold for landscaping mulch or used to produce new wood products. It is often used for hog fuel for steam-generated electricity. Gypsum from wallboard is ground and used to manufacture new wallboard, and fertilizer. Architecturally valuable timbers, hardware, doors and windows are salvaged and reused with minimal or no processing. When recovered, these materials are not regulated as disposed waste.

[2] City of Richland, *Construction and Demolition Waste Feasibility Study*, July 2005.

Table 8-2. C&D Facilities

Facility	City	Materials
Ray Poland and Sons, Inc.	Kennewick	Concrete, rebar
Pacific Steel and Recycling	Kennewick	All grades of construction metals
Twin City Metals	Kennewick	Aluminum, Brass , Copper, Ferrous scrap, Lead, Nonferrous, Porcelain/cast-iron, Stainless steel, Wire (ferrous, bare wire, insulated)
HVAC Recovery / Pick Up	Kennewick	Copper
R S Davis Recycling Incorporated	Hermiston, OR	Scrap metal
Ross Scrap Yard	Hermiston, OR	Scap metal
Super Scrap	Kennewick	Scrap metal
DLC Recycling	Yakima	Scrap metal
DRS	Richland	Clean drywall
Mayflower Metals	Prosser	Scrap metal
Tommy's Steel and Salvage	Pasco	Ferrous and non-ferrous metals
Central Pre-Mix	Pasco	Clean concrete block, bricks, rock, and gravel
Inland Asphalt	Richland	Concrete and asphalt
American Rock Products	Richland	Concrete (No metal or asphalt)

8.2.2 Key Issues

CDL&I waste consists largely of common materials, such as wood, asphalt, concrete, rock, gypsum, and various metals, that have multiple potential uses. Many of these materials are cost-effectively recovered, processed, and used as raw materials for new (or renewed) end uses. As described above, concrete and asphalt pavement is crushed and used as base material for new construction or as aggregate in new asphalt. Wood waste is processed and sold for landscaping mulch or used to produce new wood products. It is often used for hog fuel for steam-generated electricity. Gypsum from wallboard is ground and used to manufacture new wallboard, and fertilizer. Architecturally valuable timbers, hardware, doors and windows are salvaged and reused with minimal or no processing. When recovered, these materials are not regulated as disposed waste. Such activities reduce pressure on waste disposal facilities, reduce dependence on "virgin" raw materials, and decrease energy use. In addition, the economic value of this market activity is enormous. CDL&I materials are now recognized as having significant potential to contribute to recycling goals and reduce waste overall.

8.3 WOOD WASTES

Wood waste is defined as solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, and the handling and storage of raw materials, trees, and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hog fuel, and yard waste, but it does not include wood pieces or particles containing chemical preservations such as creosote, pentachlorophenol, or copper-chrome-arsenate.

Excess wood is a commonly generated waste in industrial and residential areas. Wood that is not used, sold, or burned to recover energy is excess and can be considered waste.

8.3.1 Existing Conditions

The major sources of wood waste in the City include wood from pallets, construction and demolition activities, and residential yard debris. Recycling, composting, burning in an incinerator or boiler, or landfilling typically handles many of these wastes. Approximately 982 tons of wood waste was delivered to the Landfill and converted to hog fuel in 2010. The City uses a tub grinder to pulverize wood material for use in the biosolids operation at the landfill. Boise Cascade in Walla Walla County takes wood wastes to burn as hog fuel in their boilers. They are supplied with wood material from Waste Management of Kennewick's transfer station.

8.3.2 Key Issues

Additional wood waste could be diverted from disposal at the Landfill for mulching, composting, or alternative landfill cover. Landfill tip fees that encourage clean loads of wood waste to be delivered to the Landfill would enable the facility to handle more of this material in an efficient and cost-effective manner. In addition, information on other diversion opportunities for wood waste should be provided to City residents and businesses.

8.4 AGRICULTURAL WASTES

Agricultural wastes are by-products of farming and ranching that include crop harvesting waste and manure.

8.4.1 Existing Conditions

As presented in the economics discussion in Section 1, agriculture is important to both Richland and the Tri-Cities area. In fact, Richland lies on the center of a flourishing viticulture area, and is the home of six wineries, including, but not limited to Barnard Griffin, Bookwalter Winery, and Tagaris Winery. Another 20 wineries lie within a 15-minute drive from Richland. Richland also hosts an important food processor, Con Agra/Lamb-Weston, which processes potatoes and other foods.

Agricultural wastes consist of primarily crop residues and manure. A rural waste characterization study conducted for the Washington State Department of Ecology attempted to quantify and characterize the types of waste disposed, recycled, or reused for four agricultural groups (field crops, orchards, vegetables, and livestock). The study found that less than 1% of the waste generated by these agricultural groups was landfilled. The primary means of handling waste generated by agriculture was through beneficial use, such as replenishment of soil nutrients.

8.4.2 Key Issues

The 2005 biomass inventory and bioenergy assessment completed for Washington State was seen as a first step toward a sustainable energy policy and vision within the state. Electrical energy production was the calculated product for this study; however, the report notes the need for additional study for other products such as fuels and chemical bioproducts.

8.5 TIRES

The term "tires" refers to tires from automobiles, trucks, tractors, or any other use. They are formed from rubber and usually reinforced with cords of nylon, fiberglass, or steel. Tires do not include the metal wheel to which they are usually fastened.

Refuse tires are an inevitable by-product of normal vehicle use. A tire becomes refuse when it wears out and is not retreaded or used in some other way. With its useful life over, it must be stored (temporarily) or disposed of. Tire dealerships remove most old tires in the process of selling new ones. Individuals may also accumulate old tires. When vehicles are junked, the tires on the vehicle, spares, and snow tires may be stored by the owner or wrecking yard.

8.5.1 Existing Conditions

The Horn Rapids Landfill accepts tires for a fee. The tires are no longer buried, but are transported out of State to a permitted facility. In 2010, 1,567 tires were delivered to the Landfill.

Most large tire retailers contract with a tire collector for transport away from the site and eventual disposal/recycling. The majority of tires are transported out of the county or state.

8.5.2 Key Issues

At present, tire disposal does not appear to be a significant problem although beneficial uses are still scarce in Eastern Washington. Tires will continue to be accepted at the Horn Rapids Landfill for offsite disposal at a permitted facility, currently Waste Connections at Boardman, Oregon. Scrap tires can be used in a number of productive and environmentally safe applications. The three most common uses are:

- **Civil Engineering Applications:** Scrap tire material replaces some other material currently used in construction, such as lightweight fill materials that include expanded shale or polystyrene insulation blocks, drainage aggregate, or even soil or clean fill. Some of the applications include: subgrade fill and embankments, backfill for wall and bridge abutments, subgrade insulation for roads, and septic system drain fields.
- **Ground Rubber Applications:** Tires are processed to a small particle size and the finished product, crumb rubber, can be used in a variety of applications, from loose fill (e.g., playground cover) to molded products to rubberized asphalt.
- **Tire Derived Fuel:** Scrap tires are used as fuel because of their high heating value. Using scrap tires is not recycling, but is considered a beneficial use. Typical tire derived fuel users include the cement industry, the pulp and paper industry, electric utilities, and certain industrial boilers.

The Solid Waste Management and Reduction and Recycling Act (RCW 70.95.500, et seq.) addresses the storage and handling of tires. The law requires haulers (more than five tires) to obtain a license and post a $10,000 bond, and storage pile owners (800 or more tires) to obtain a solid waste handling permit and obtain a financial assurance mechanism for closure of the site. Penalties for unlicensed haulers and site owners are a misdemeanor charge with a maximum one-year in jail and a $5,000 fine.

RCW 70.95.510 was amended to reinstate the tire fee, effective July 1, 2005. The original tire fee, which had expired in 1994, was used to clean up tire dumps, fund a study of tires, and conduct other activities. The new fee is also intended to clean up unauthorized tire dumps and help prevent future accumulations of tires. The fee is expected to raise $4.4 million per year and expired in 2010. Other amendments provide for stricter licensing requirements and make tire transporters (licensed or not) liable for the cost of cleaning up illegally stored or dumped tires. The amendments also directed Ecology to conduct a study of unauthorized tire piles.

The Benton Franklin Health Department will identify tire piles that do not comply with state regulations and require compliance with these regulations. Presently, the City of Richland has a tire facility located next to the landfill that has been permitted in the past but is not currently permitted . This may be a candidate for cleanup if the managers of the facility are not able to acquire another operating permit and move forward with a viable plan for moving tires off the property towards beneficial use or disposal.

8.6 BIOMEDICAL WASTES

Medical treatment and research facilities generate a wide range of special wastes that require handling and disposal. Because of the variety of waste streams, several different regulatory agencies at the local, regional, state, and federal level have regulations pertaining to best management practices, and apply their own definitions to waste types. For the purpose of this Plan, biomedical waste means, and is limited to the following types of waste in accordance with RCW 70.95K.010:

- **Animal Waste:** Waste animal carcasses, body parts, and bedding of animals that are known to be infected with or that have been inoculated with, human pathogenic microorganisms infectious to humans.
- **Biosafety Level 4 Disease Waste:** Waste contaminated with blood, excretions, exudates, or secretions from humans or animals which are isolated to protect others from highly communicable infectious diseases that are identified as pathogenic organisms assigned to biosafety Level 4 by the Centers of Disease Control, National Institute of Health, Biosafety in Microbiological and Biomedical Laboratories, current edition.
- **Cultures and Stocks:** Wastes infectious to humans, includes 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, inoculate, and mix cultures.
- **Human Blood and Blood Products:** Discarded waste human blood and blood components, and materials containing free-flowing blood and blood products.
- **Pathological Waste:** Waste human source biopsy materials, tissues, and anatomical parts that emanate from surgery, obstetrical procedures, and autopsy. "Pathological waste" does not include teeth, human corpses, remains, and anatomical parts that are intended for interment or cremation.

- **Sharps Waste:** All hypodermic needles, syringes with needles attached, IV tubing with needles attached, scalpel blades, and lancets that have been removed from the original sterile package.

The handling, transport, treatment, and disposal of infectious waste are regulated in some fashion by the following entities:

- US Environmental Protection Agency.
- Washington Department of Ecology.
- Washington Department of Health.
- Washington Department of Transportation.
- Washington Utilities and Transportation Commission (WUTC).
- Benton-Franklin Health District.
- National Hospital Certification Association.

Under the Medical Waste Tracking Act of 1988 (MWTA), the EPA gives states the responsibility of permitting infectious waste treatment technologies. Treatment technologies must be consistent with the requirements of Title V of the Federal Clean Air Amendments.

Washington State agencies most directly involved in this process are Ecology, the Department of Health, and the WUTC. Ecology administers permits for the following biomedical wastes treatment alternatives:

- Incineration.
- Autoclaving.
- Chemical disinfection.
- Microwaving.
- Macrowaving (for off-site treatment only).
- Gas vapor and irradiation sterilization.

8.6.1 Existing Conditions

The Kadlec Medical Center in Richland no longer incinerates its biomedical wastes. One franchise hauler, Stericycle, has a certificate granted by the WUTC (certificate G-244) to collect biomedical throughout the state. The collection service is provided on an on-call and regular basis.

8.6.2 Key Issues

While medical and disposal facilities and emergency responders are informed about proper management of biomedical wastes, residential household generators may not be informed about proper management for sharps or pharmaceuticals. Pharmaceutical wastes present both wastewater and solid waste management issues. Often, residents flush unwanted pharmaceuticals down toilets or pour them down drains, leading to potential contamination of

surface waters, ground waters, and biosolids. Proper disposal is also an issue for solid waste collection workers who must handle the waste.

Furthermore, a large-scale pandemic could create unsafe conditions, should infectious diseases cause widespread death among the population. In an emergency situation, response for human pandemic diseases is organized under existing federal, state, and local health district policies.

Large-scale need for diseased animal disposal is handled through policies from the United States Department of Agriculture; Washington State Department of Agriculture, Department of Fish and Wildlife, Department of Ecology; and in coordination with the Benton Franklin Health District. Policies and procedures depend on the type of disease, its presentation, and consensus between agencies and facility operators to determine adequate final disposition at any given incident.

8.7 PETROLEUM-CONTAMINATED SOILS

Petroleum-contaminated soils (PCS) are soils that have been contaminated by a petroleum product through leaks from petroleum product storage tanks or spills. Some PCS can be contaminated with lead, benzene, solvents, and PCBs and therefore may be considered hazardous. This section discusses only non-hazardous PCS.

PCS requires clean up when hydrocarbon contamination levels exceed those specified in Ecology's Model Toxics Control Act Cleanup Regulation (MTCA) (WAC 173-340). Under the MTCA, there are separate cleanup levels for industrial verses non-industrial zoned land along with maximum allowable levels for each individual constituent. PCS above MTCA cleanup levels can be treated in-situ, in place, or excavated and treated onsite or at an approved treatment facility.

8.7.1 Existing Conditions

PCS generated in Richland may be disposed of in several ways. One option is for the generator to remediate and dispose of the soil on site. Another option is to haul the PCS to the Horn Rapids Landfill, where the wastes are landfarmed, disked in with native soils, and then used as cover and road-building materials at the landfill. Historically, approximately 25 tons per year of PCS is disposed at the Horn Rapids site. The Benton-Franklin Health District monitors the acceptance of PCS at the landfill and requires testing of the material before it is used at the landfill at least 6 months after it was first landfarmed. The Horn Rapids Landfill uses a special form and procedure to track PCS through the treatment process.

8.7.2 Key Issues

Proper disposal of PCS is largely the responsibility of the generator. Generators have several options, including treating their soils onsite, disposing of them at a regional treatment center, or disposing of them at a permitted landfill. The generator must select a method approved by Ecology and will use cost to make the final selection of disposal method. The BFHD approves and monitors PCS delivered to the Horn Rapids Landfill for treatment and re-use; however, on-site landfarming of PCS is monitored by Ecology. Generators with PCS designated as dangerous

wastes must find other methods of appropriately disposing of their wastes that complies with all local, state, and federal regulations.

Volumes of PCS that are generated and require disposal are highly variable and dependent on the number and size of remedial activities taking place. However, most efforts to remove and upgrade aging gasoline or fuel tanks have been accomplished and volumes of PCS originating from these activities are expected to decrease. In 2007, only 15 tons were disposed at the landfill, which may be a sign of a decline in the amount of PCS generated. Present disposal and treatment options for PCS appear to be adequate and will continue to be disposed at the Horn Rapids Landfill.

8.8 ASBESTOS

Asbestos waste is any waste that contains more than 1% asbestos by weight (40 CFR Part 763, Appendix A, Subpart F). A Waste Shipment Record that meets EPA guidelines must accompany all asbestos-containing waste. In a November 1990 amendment, the National Emission Standards for Hazardous Air Pollutants (NESHAP) established record-keeping and operational requirements for disposal facilities accepting asbestos waste.

Asbestos containing materials (ACM) can only be disposed of in approved waste disposal sites and must be sealed in leak-tight containers while wet, or put into leak-tight wrappings. Labels are required on all ACM containers and must contain name and location of generation. Transport vehicles must be marked and accompanied by a waste shipment record to be provided to the disposal site owner or operator upon receipt.

The Benton Clean Air Authority (BCAA) is the local agency responsible for enforcing federal, state, and local asbestos regulations. The Authority has adopted local regulations, consistent with existing federal and state regulations, for the removal, encapsulation, and disposal of ACM. In its regulations, BCAA has lowered the limits for notification and emission control from 260 linear feet (or 160 square feet) to 10 linear feet (or 48 square feet). Asbestos may only be removed by licensed asbestos contractors or by homeowners after a notice is provided to BCAA. Asbestos contractors are licensed by the Washington State Department of Labor and Industries.

8.8.1 Existing Conditions

Municipal solid waste landfills can accept non-friable asbestos wastes if acceptance and disposal procedures are in compliance with federal, state, and local regulations. The Horn Rapids Landfill has modified their waste policy to accept ACM (non-friable asbestos). No data is available on the quantity of material disposed at the landfill. Asbestos waste generators can also haul their waste to either the Columbia Ridge Landfill (Oregon) or the Roosevelt Regional Landfill (located in Klickitat County) for disposal. Both sites have approved programs for asbestos waste disposal.

8.8.2 Key Issues

Asbestos containing materials can be disposed of in solid waste landfills if they are encapsulated, packaged, and covered for disposal in accordance with the local, state, and federal asbestos regulations described previously. Acceptance of asbestos at a landfill facility requires special

handling of the material, additional paper work, and additional training of personnel. These requirements increase asbestos waste disposal costs. The Horn Rapids landfill is the only local facility that can accept non-friable ACM for disposal.

8.9 ELECTRONIC WASTE

Electronic waste refers to discarded computers, monitors, printers, fax machines, cell phones, electronic cables, and other electronic products. In 2006, the Washington State Legislature passed Engrossed Substitute Senate Bill 6428, which established the Washington State Electronics Product Recycling Law. The law requires manufacturers of electronic products sold in Washington State to finance and implement electronics collection, transportation, and recycling programs in Washington State no later than January 1, 2009. This program is available to households, small governments, small businesses, and charities. Ecology will oversee this program. Electronic products that are covered in the legislation include cathode ray tube (CRT) and flat panel computer monitors having a viewable area greater than 4 inches when measured diagonally, desktop computers, laptops, and portable computers.

8.9.1 Existing Conditions

Used TV's, computers, monitors, and laptops are accepted for safe disposal at no charge to residents at the Horn Rapids Landfill. Mid-Columbia businesses are partnering with Ecology to launch the new E-Cycle Washington. The business locations that accept and recycle or reuse electronic materials in Richland and the surrounding region include:

- Clayton Ward Recycling, 1936 Saint Street, Richland
- Horn Rapids Landfill, 3120 Twin Bridges Road, Richland
- Packs Auction Service, 511 9th Street, Benton City
- Stay Tan West, 3680 W. Van Giesen, West Richland

In addition, there are a number of opportunities to recycle electronics:

- **RECA Foundation, Kennewick:** Accepts Pentium III's, mice, keyboard, speakers, video cards, laptop computers, monitors, printer, printers.
- **Columbia Basin College, Pasco Campus:** Students have hands-on training to learn to repair and update computers. The computers are then donated to Pasco High School for software upgrades and when complete, are donated to students in need.
- **Staples Office Supply Stores, Richland:** Acceptable items include copiers, printers, computer hard drives, monitors (including flat screens), laptop computers, and all-in-one machines for a fee of $10 per item. This fee covers the processing and shipping costs. The electronics are shipped to the Staples distribution center in Rialto, CA, where hard drives are shredded to protect consumers' personal information. Shredded hard drives are then disposed of in an ecologically friendly way. Other electronics are processed and then sent off for further recycling.

- **Office Depot, Inc., Richland:** Office Depot has launched an electronics recycling program at all of its North American retail locations. The "Tech Recycling Service" is where customers can recycle all types of personal electronics, from digital cameras to computers, by buying the appropriate-sized Tech Recycling Box at Office Depot stores. The boxes sell for $5, $10, and $15 and include all shipping and handling. Customers take the box home and fill it with used electronic devices, including cords and cables, and return the unsealed box to the store.
- **Costco.com** has a new Trade-In/Recycle program for electronics. The Trade-In Program is available to all customers of Costco who elect to trade in or recycle qualifying consumer electronic products currently offered by the program.
- **Manufacturer Take-Back Programs:** Several computer manufacturers will take back their outdated computer equipment.

8.9.2 Key Issues

Strong environmental and economic benefits are generated from electronics recycling initiatives:

- Conservation of landfill space.
- Recovery and reuse of valuable recyclable materials.
- Increase to local jobs and tax base through new or expanded recycling business activities from collection to reconditioning or deconstruction.
- Utilization of previously unused or underutilized warehouse and manufacturing sites.
- Containment of hazardous material releases from inappropriately disposed electronics here and abroad.

While end-of-life electronics currently comprise only a small amount of the municipal waste stream, that percentage is expected to grow dramatically in the next few years. The average life span of a personal computer is currently about 2 to 3 years. Electronics that break often are not repaired due to the relatively low price of replacement equipment. When the equipment breaks or becomes obsolete, it is commonly discarded. Many state and local government agencies are concerned about how to ensure proper management of older electronic equipment.

8.10 OPTIONS

The following options were considered by the SWAC for each of the miscellaneous waste types included in this section of the Plan.

Construction and Demolition Debris

1. Establish C&D facility at Horn Rapids Landfill

The City will develop and operate a facility for processing and recycling construction and demolition material generated from building and demolition projects in the City. The facility would handle all types of construction and demolition materials, including aggregates, wood, drywall and metals. The facility will divert these materials from the landfill and will save valuable landfill capacity.

The Solid Waste Division is currently diverting construction and demolition wood to processing for "hog fuel" for energy recovery. A concrete diversion program has also been started that diverts concrete for crushing to be used for projects at the landfill and other City Departments. Metal from construction and demolition projects is also collected at landfill and sent to a vendor for recycling.

The City will find markets for other waste streams as opportunities arise.

2. Establish C&D and inert waste diversion specifications for County or City projects

Another method for encouraging C&D and inert waste diversion is to include C&D and inert waste diversion requirements/procedures into project specifications, which are part of the contract between the contractor and the project owner. Because specifications are a major communications tool to convey the requirements of a construction or demolition project, specifications that contractors are required to follow could also include conditions and requirements for diverting C&D and inert materials. If the conditions are no met, the contractor could be held accountable.

The California Integrated Waste Management Board has developed sample construction and demolition (C&D) specifications for use by architects and engineers. This sample specification requires the contractor to submit a C&D waste management plan to the project owner and architect which will recover 75% of the C&D wastes for reuse and recycling. The plan must include a list of reuse and recycling facilities that will be used and materials that will be recovered. At the end of the project, the contractor must provide a final accounting of the disposition of recovered materials, including submittal of receipts to receive final payments. This sample C&D specification could be modified for use by the City in its future construction, renovation or demolition projects.

3. Provide education programs for contractors

A straightforward method to help divert C&D and inert waste is to provide general contractors with educational material and information about alternative facilities that take C&D and inert waste. This could be as simple as providing a brochure listing the diversion facilities in the region, with hours, location, cost, and material types accepted. Providing information on reuse opportunities, such as exchange programs, can also be useful. A key opportunity for informing contractors about reduction and recycling opportunities is during the permitting process.

In addition to general reduction and recycling opportunities, contractors could be provided information about deconstruction and green building practices:

- **Deconstruction:** This involves dismantling of a structure, salvaging building contents and components, and finding viable markets and outlets for materials. This practice can be used to varying degrees, which can range from reuse of an entire structure or foundation, to select assemblies and systems, to the careful removal of specific materials or items.
- **Green Building:** A green building, also known as a sustainable building, is a structure that is designed, built, renovated, operated, or reused in an ecological and resource-

efficient manner. Green buildings are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment. Builders could be provided with information on methods to incorporate environmentally friendly practices into the construction of a home.

4. Use recycled content building specifications for City projects

To generate demand and promote the reuse of C&D and inert materials in their present and recycled form, the City may want to require the use of recovered and recycled materials for building and renovation projects. Specifications for incorporating environmentally friendly materials, including recycled products, into building projects are available commercially. Additional tools available to the City are the Comprehensive Procurement Guidelines developed by EPA. Several guidelines have been developed for construction products containing recycled materials.

The State Beyond Waste plan addresses construction and demolition wastes in one of the five initiatives established in that plan, "making green building practices mainstream." The short term goal of the Green Building Initiative is "to dramatically increase adoption of environmentally preferable building construction, operation and deconstruction practices throughout the state and the region." The long-term goal of this initiative is "for green building to be a mainstream and usual practice throughout the state."

Other governmental actions are being taken on the state and local level. The High Performance Green Building Bill was signed in to law by Governor Gregoire on April 8, 2005. This bill adopts LEED (Leadership in Energy and Environmental Design) standards for state-owned buildings. State assisted major school construction projects are required to use green building standards. The Washington Sustainable Schools Protocol (WSSP) was developed to provide the criteria for guidance on construction of high performance schools.

5. Develop a Disaster Management Plan for the City of Richland

In the aftermath of a disaster, the primary focus of government response teams is to restore and maintain public health and safety. As a result, debris diversion programs such as recycling and reuse can quickly become secondary. Advance planning, through a Disaster Management Plan, can help the City identify options for collecting, handling, storing, processing, transporting, diverting, and disposing of debris. Preparing a plan before an emergency happens can save valuable time and resources if it is needed.

To assist local government agencies in preparing debris management plans, the California Integrated Waste Management Board has developed a model debris management plan.[3] This model plan includes 17 chapters that cover the various aspects of a debris management strategy. The four major parts of the plan include:

- Government coordination, pre-disaster planning, and debris management programs.
- The emergency management system.

[3] More information available at: *http://www.ciwmb.ca.gov/Disaster/*.

- Case studies.
- Checklists that summarize the tasks to be undertaken by the local government, primarily the designated debris manager and team.

Wood Waste

1. Support diversion at transfer station and landfill

This option would provide incentives at the landfill for users to bring in clean loads of wood waste for diversion. The landfill rates could be structured to allow users to pay a reduced fee or free disposal for clean loads. Clean loads would facilitate the efficient recycling or diversion of the material, and landfill costs associated with handling of this material would be reduced.

2. Provide public education on wood waste diversion

Information should be provided to the public on the benefits of reusing, reducing, or recycling wood waste, and facilities that accept clean wood waste for recycling or composting, including the Horn Rapids Landfill site and other regional facilities.

Agricultural Wastes

1. Remove barriers to, and support research and development of alternative energy industries using agricultural waste

Options are available to the City to support research and development of alternative energy industries through economic incentives such as tax incentives or land use designations. The City could offer incentives to attract businesses to the region, and could provide technical assistance and free product marketing to businesses. Additional incentives could include less stringent building codes and zoning laws, streamlined local permit processes and siting assistance, and reduced taxes and licensing.

The City is partnering with the Biological Sciences and Engineering Lab (BSEL) at Washington State University, Tri Cities to test different technologies to extract energy from organic waste material. The City will provide wastes such as yard refuse and commercial food waste for the Lab to use in it testing.

Tires

1. Implement City program to reduce tire waste

Good tire maintenance can extend the life of a tire significantly. Windshield stickers are used to remind maintenance facilities to check tires just as stickers are used for oil changes. Tires are repaired, if damaged, to increase their life span. Tire waste also can be reduced by purchasing longer-life tires.

2. Implement public education programs for proper maintenance of tires, and handling of old tires

Consumers can be educated on tire maintenance, tire repair, and lifecycle costs to encourage purchase of longer-life tires. One specific target for educational materials is companies that operate commercial fleets. Information can also be provided on facilities that accept old tires, to eliminate illegal dumping or tire piles.

Biomedical Wastes

1. Develop and distribute education materials for correct management of residential medical waste

Educational materials should inform residents about the risks associated with their wastes and the services available to properly store and dispose of them. Residential sharps generators can use information about correct containers and collection opportunities. Information should be developed and distributed explaining the environmental and health consequences of disposing of pharmaceuticals through the wastewater system.

Petroleum-Contaminated Soils

1. Continue PCS program at Horn Rapids Landfill

Asbestos

1. Educate homeowners on proper handling methods

There may be a need to educate homeowners about proper identification of asbestos-containing materials and proper handling and disposal methods. The City should continue to develop more comprehensive information and outreach strategies.

Electronic Wastes

1. Inventory available opportunities for e-waste collection and recycling

This information is on the City's website. The City should regularly update the information to ensure it is accurate.

2. Continue relationships with recyclers and programs to recycle e-waste

The City is working with the Washington Materials Management and Financing Authority (WMMFA) to identify e-waste recyclers in the area. WMMFA is the manufacturer board-directed authority created by state law to handle the recycling of certain electronics in Washington. The organization is charged with creating a standard plan that manufacturers will participate in and finance, and to coordinate collectors, transporters and processors to recycle covered electronics, then bill participating member manufacturers for the costs.

8.11 RECOMMENDATIONS

The Solid Waste Advisory Committee reviewed the options discussed above and has recommended the following options:

- Establish C&D and inert waste diversion specifications for public and private projects.
- Provide education programs for contractors.
- Use recycled content building specifications for public projects.
- Support diversion of wood waste at transfer station and landfill.
- Provide public education on wood waste diversion.
- Remove barriers to, and support research and development of alternative energy industries using agricultural waste.

- Implement public education programs for proper disposal of old tires.
- Develop and distribute education materials for correct management of residential medical waste.
- Inventory available opportunities for e-waste collection and recycling.
- Expand relationships with recyclers and programs to recycle e-waste.
- Expand public outreach to businesses on e-waste recycling.
- Expand diversion of construction and demolition materials at Horn Rapids Landfill as markets allow.

SECTION 9

MODERATE RISK WASTE

9.1 MODERATE RISK WASTES

Local governments are required by the Washington State Hazardous Waste Management Act (HWMA, Chapter 70.105 RCW) to address moderate risk waste management in their jurisdictions. Moderate risk wastes are hazardous wastes produced by households, and by businesses and institutions in small quantities. Commercial and institutional generators of hazardous waste are conditionally exempt from full regulation under the HWMA, provided that they do not produce or accumulate hazardous waste above specified quantities defined by Ecology (quantity exclusion limits). These "small quantity generators" produce hazardous wastes in quantities that do not exceed the following State regulatory limits:

- 220 pounds (100 kg) of dangerous waste per month or per batch.
- 2.2 pounds (1 kg) of acute or extremely hazardous waste per month or per batch.

In addition, to maintain its status as a small quantity generator, a business or institution may not accumulate more than 2,200 pounds of dangerous waste or more than 2.2 pounds of acute or extremely hazardous waste at one time.

Businesses or institutions producing or accumulating hazardous waste above the quantity exclusion limits are required to meet a stringent set of regulations when storing, handling, and disposing of their hazardous wastes. In addition, these fully regulated hazardous waste generators must comply with extensive waste tracking and reporting requirements. Small-quantity generators must meet certain requirements for identifying and managing their hazardous wastes, but are exempt from portions of the waste tracking and reporting requirements.

9.2 EXISTING CONDITIONS

As a result of the 1993 Benton County Interlocal Agreement on Household Hazardous Wastes, a permanent facility was cited and constructed at the Horn Rapids Landfill. The Moderate Risk Waste facility opened on May 31, 1995. The facility was staffed with two full time personnel and accepted waste from the households and small quantity generators in Benton County.

The facility was destroyed in a fire in June 2010 and has not been re-built as of the updating of this Plan. The City, with the County, is investigating the future location of the facility and funding sources to build the facility.

The Benton County Solid Waste Division provides a central informational resource center and serves as a second educational tool containing information on a variety of commercial moderate risk waste management as well as household hazardous waste issues.

Pending the direction of the Benton County Solid Waste Advisory Committee, the City of Richland may participate in periodic collection events, operate a facility with Benton County and the partner cities as before, or construct and operate its own facility in the absence of a fixed facility in Benton County.

SECTION 10

REGULATORY REVIEW

10.1 REGULATORY REVIEW

This regulatory review outlines the federal, State and local laws and regulations that affect the use, handling, storage, transporting and disposal of solid waste within the City of Richland. This section is an overview of the regulations affecting solid waste. For specific legal requirements, criteria, standards, etc., consult the regulations referenced.

10.2 FEDERAL REGULATORY REVIEW

10.2.1 Solid Waste Disposal Act

The Solid Waste Disposal Act (SWDA) requires that manufacturers comply with federal, state, interstate, and local requirements concerning the management and disposal of solid wastes. These requirements include permitting, licensing, and reporting. 40 CFR 240 regulates incinerators processing a minimum of 50 tons per day. 40 CFR 243 addresses requirements for the storage and collection of solid waste materials. 40 CFR 244, 40 CFR 245, and 40 CFR 246 deal with beverage containers, resource recovery, and source separation, respectively. The Environmental Protection Agency (EPA) is primarily responsible for implementing the SWDA.

10.2.2 Resource Conservation and Recovery Act

The EPA is primarily responsible for implementing the Resource Conservation and Recovery Act (RCRA), including the development of national regulations and standards, and nationwide administration of the hazardous waste program. Because RCRA was adopted as amendments to the earlier SWDA, the legislation defines all hazardous wastes as a subset of solid waste. The relationship between the two pieces of legislation ensures that provisions applied to solid wastes also control hazardous waste regulation. RCRA also defines some materials as solid wastes; but nevertheless, exempts them from regulations as hazardous wastes. These non-hazardous solid wastes include wastes from "household sources", certain agricultural wastes, and specified "high-volume, low-toxicity" wastes. RCRA also excludes a number of waste materials, including solid or dissolved materials in domestic sewage, point source industrial discharges into waterways, and spent nuclear waste materials; these are not considered solid wastes, and so cannot be regulated as hazardous waste.

10.2.3 Comprehensive Environmental Response, Compensation and Liability Act

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), known as the Superfund Law, is administered by the EPA. CERCLA creates national policy and procedures to identify and clean up sites contaminated by releases of hazardous substances, and to finance these remedial activities. For purposes of CERCLA, hazardous substances include all substances treated as hazardous by the Clean Water Act, hazardous wastes regulated under RCRA and chemicals regulated as "imminently hazardous" under the Toxic Substances Control Act.

10.2.4 Emergency Planning and Community Right-to-Know Act

The Emergency Planning and Community Right-To-Know Act (EPCRA), also known as Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III, is administered by the EPA. It requires that certain businesses file notifications and reports on their activities involving various hazardous chemicals. The specific implementing requirements are in 40 CFR 350 to 372. The states have comparable legislation and regulations that allow them to implement the EPCRA notification, reporting, and emergency response requirements. In addition, EPCRA requires that local emergency planning committees be formed to plan for response to hazardous chemical related emergencies in the community.

10.2.5 Occupation Safety and Health Act

The principal national law providing for worker safety and right-to-know is the Occupation Safety and Health Act (OSHA). The broad policy goal of the OSHA is to assure so far as possible every working man and woman in the nation a safe and healthful working environment. Most OSHA requirements are overseen by the Occupational Safety and Health Administration (OSHA), which is part of the Department of Labor. OSHA's responsibilities include developing and promulgating occupational safety and health standards, and assuring that these standards are administered and enforced nationwide.

10.2.6 Federal Insecticide, Fungicide and Rodenticide Act

The basic national framework for pesticide control is provided by the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), which is administered by the Office of Pesticide Programs within the EPA. EPA uses FIFRA authority to collect information necessary to register and control the active ingredients in pesticides, and to impose comprehensive licensing, certification, and permitting requirements. FIFRA also provides for regulation of pesticide applicators.

10.2.7 Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) declares a national policy to develop adequate data regarding the effects of chemical substances and mixtures on human health and the environment. TSCA also contains provisions that address specific chemicals, including asbestos, polychlorinated biphenyl (PCBs), and radon. TSCA is administered by the EPA Office of Pollution Prevention and Toxics.

10.2.8 Hazardous Materials Transportation Uniform Safety Act

The Hazardous Materials Transportation Uniform Safety Act (HMTA) imposes comprehensive requirements on the transportation of both hazardous materials and hazardous wastes. Primary responsibility is assigned to the Department of Transportation (DOT), which administers the federal law covering the transportation of hazardous materials. The Research and Special Projects Administration (RSPA) defines hazardous materials and promulgates most technical and procedural standards targeted specifically to hazardous material transport.

Although the HMTA applies to both hazardous materials and hazardous waste, the EPA also regulates hazardous waste transport as part of the EPA's administration of the RCRA. RCRA authorizes EPA to issue additional requirements to meet the special risks associated with

hazardous waste transport. However, EPA must ensure that its regulations are consistent with those published by the DOT.

10.2.9 Clean Air Act

The Clean Air Act (CAA) creates a comprehensive national framework for maintaining and enhancing air quality. The regulatory elements of the CAA are comprised of the following Title numbers:

10.2.10 Clean Water Act

The Clean Water Act (CWA) provides the basic national framework for water pollution control and water quality management throughout the United States (US). In tandem with the Rivers and Harbors Act, protection is extended to protection of the nation's waters to the fragile remnants of our coastal and inland wetlands. The EPA has nationwide authority to implement the CWA. The EPA and the US Army Corps of Engineers share authority for the protection of wetlands, and the EPA and the US Coast Guard implement the Oil Pollution Act (OPA).

10.2.11 Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) creates a comprehensive national framework designed to ensure the quality and safety of our drinking water supplies. SDWA assigns primary enforcement authority to the EPA. The EPA's chief regulatory responsibility under the SDWA is to establish and maintain national primary drinking water standards and regulations. In addition, EPA uses its regulatory authority under SDWA to address specific problems such as lead in the drinking water supply and contamination of groundwater sources.

10.3 STATE REGULATORY REVIEW

10.3.1 RCW 7.48 Public Nuisances Enumerated

It is the purpose of this statute to prevent the annoyance, injury or endangering of the comfort, repose, health and safety of others; that which offends the decency of, or unlawfully interferes with, obstructs or tends to obstruct, or render dangerous for passage, any lake or navigable river, bay, stream, canal or basin, or any public park, square, street or highway; or in any way render other persons insecure in life, or in the use of property.

10.3.2 RCW 15.54 Fertilizers, Minerals and Limes

The Legislature intends to strengthen the state's fertilizer adulteration laws to protect human health and the environment by: (a) Ensuring that all fertilizers meet standards for allowable metals; (b) Allowing fertilizer purchasers and users to know about the contents of fertilizer products; and (c) Clarifying the DOE oversight authority over waste-derived fertilizers. The Legislature intends to provide better information to the public on fertilizers, soils, and potential health effects by authorizing additional studies o plant uptake of metals and levels of dioxins in soils and products.

10.3.3 RCW 15.58 Washington Pesticide Control Act

The purpose of this chapter is to establish a statewide program for the formulation, distribution, storage, transportation, and disposal of any pesticide and the dissemination of accurate scientific information as to the proper use, or nonuse, of any pesticide. This program is important and vital

to the maintenance of a high level of public health and welfare both immediate and future, and is hereby declared to be a business affected with the public interest. The provisions of this chapter are enacted in the exercise of the police powers of the state for the purpose of protecting the immediate and future health and welfare of the people of the state.

10.3.4 RCW 17.21 Washington Pesticide Application Act

It is the purpose of this chapter to protect the immediate and future health and welfare of the people of the state with regard to the application and control of various pesticides.

10.3.5 RCW 35.13.280 Cancellation, Acquisition of Franchise or Permit for Operation of Public Service Business in Territory Annexed – Regulation of Solid Waste Collection

The annexation by any city or town of any territory pursuant to those provisions of Chapter 35.10 RCW which relate to the annexation of a city or town to a city or town, or pursuant to the provisions of Chapter 35.13 RCW shall cancel, as of the effective date of such annexation, any franchise or permit therefore granted to any person, firm or corporation by the State of Washington, or by the governing body of such annexed territory, authorizing or other wise permitting the operation of any public transportation, garbage disposal or other similar public service business or facility within the limits of the annexed territory, but the holder of any such franchise or permit canceled pursuant to this section shall be forthwith granted by the annexing city or town a franchise to continue such business within the annexed territory for a term of not less than seven years from the date of issuance thereof, and the annexing city or town, by franchise, permit or public operation, shall not extend similar or competing services to the annexed territory except upon a proper showing of the inability or refusal of such person, firm or corporation to adequately service said annexed territory at a reasonable price: PROVIDED, That the provisions of this section shall not preclude the purchase by the annexing city or town of said franchise, business, or facilities at an agreed or negotiated price, or from acquiring the same by condemnation upon payment of damages, including a seasonable amount for the loss of the franchise or permit. In the event that any person, firm or corporation whose franchise or permit has been canceled by the terms of this section shall suffer any measurable damages as a result of any annexation pursuant to the provisions of the laws above-mentioned, such person, firm or corporation shall have a right of action against any city or town causing such damages.

After an annexation by a city or town, the Washington Utilities and Transportation Commission (WUTC) shall continue to regulate solid waste collection within the limits of the annexed territory until such time as the city or town notifies the WUTC, in writing, of its decision to contract for solid waste collection or provide solid waste collection itself pursuant to RCW 81.77.020. In the event the annexing city or town at any time decides to contract for solid waste collection or decide to undertake solid waste collection itself, the holder of any such franchise or permit that is not cancelled in whole or in part shall be forthwith granted by the annexing city or town a franchise to continue such business within the annexed territory for a term of not less than the remaining term of the original franchise or permit, or not less than seven years, whichever is the shorter period, and the city or town, by franchise, permit, or public operation, shall not extend similar or competing services to the annexed territory except upon a proper showing of the inability or refusal of such person, firm or corporation to adequately service the annexed territory at a reasonable price. Upon the effective dates specified by the city or town council's

ordinance or resolution to have the city or town contract for solid waste collection or undertake solid waste collection itself, the transition period specified in this section begins to run. This section does not preclude the purchase by the annexing city or town of the franchise, business, or facilities at an agreed or negotiated price, or from acquiring the same by condemnation upon payment of damages, including a reasonable amount for the loss of the franchise or permit. In the event that any person, firm or corporation whose franchise or permit has been cancelled by the terms of this section suffers any measurable damages as a result of any annexation pursuant to this chapter, such person, firm or corporation has a right of action against any city or town causing such damages.

10.3.6 RCW 35.21.120-158 Cities and Towns Solid Waste Provisions

It is the purpose of these sections to permit cities and towns to establish and manage a solid waste handling system. Specifically addressed are; contracts and agreements; ordinances; curbside recycling; vendor selection process; establishments of rates and increases and the collection and transportation of recyclable materials by recycling companies or non-profit entities

10.3.7 RCW 35A.21.152 Rate Increase Notice

A city that contracts for the collection of solid waste, or provides for the collection of solid waste directly, shall notify the public of each proposed rate increase for a solid waste handling service. The notice may be mailed to each affected ratepayer or published once a week for two consecutive weeks in a newspaper of general circulation in the collection area. The notice shall be available to affected ratepayers at least forty-five days prior to the proposed effective date of the rate increase.

10.3.8 RCW 36.58 Solid Waste Disposal

It is the purpose of this chapter to permit counties under limited conditions to manage the disposal of their solid waste. Specifically addressed are; solid waste handling systems; solid waste collection service fees; transfer stations; contracts with vendors of solid waste handling systems; solid waste disposal districts and the collection and transportation of recyclable materials by recycling companies and non-profit entities.

10.3.9 RCW 36.58A Solid Waste Collection Districts

It is the purpose of this chapter to authorize the creation, modification and dissolution of a solid waste collection district

10.3.10 RCW 39.34 Interlocal Cooperation Act

It is the purpose of this chapter to permit local governmental units to make the most efficient use of their powers by enabling them to cooperate with other localities on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population, and other factors influencing the needs and development of local communities.

10.3.11 RCW 43.19A Recycled Product Procurement

It is the purpose of this chapter to:

- substantially increase the procurement of recycled content products by all local governmental agencies and public schools, and provide a model to encourage a

comparable commitment by Washington State citizens and businesses in their purchasing practices;

- target government procurement policies and goals toward those recycled products for which there are significant market development needs or that may substantially contribute to solutions to the state's waste management problems;
- provide standards for recycled products for use in procurement programs by all governmental agencies;
- provide the authority for all governmental agencies to adopt preferential purchasing policies for recycled products;
- direct state agencies to develop strategies to increase recycled product purchases, and to provide specific goals for procurement of recycled paper products and organic recoverable materials;
- provide guidance and direction for local governments and other public agencies to develop plans for increasing the procurement of recycled content products.

10.3.12 RCW 43.70.190 Public Health Violations

It is the purpose of this section to allow local health officers to bring an action to enjoin a violation or the threatened violation of any provisions of the public health laws of this state or any rules or regulations made by the state board of health or the department of health pursuant to said laws, or may bring any legal proceeding authorized by law, including, but not limited to, the special proceedings authorized in Title 7 RCW, in the superior court in the county in which the violation occurs or is about to occur.

10.3.13 RCW 46.48 Transportation of Hazardous Materials

It is the purpose of this chapter to authorize the Washington State Patrol (WSP) to adopt and enforce the regulations promulgated by the DOT, as these regulations apply to motor carriers. The WSP shall confer with the emergency management council, under RCW 38.52.040, and may make rules and regulations pertaining thereto, sufficient to protect persons and property from unreasonable risk of harm or damage.

10.3.14 RCW 46.55 Towing and Impoundment

It is the purpose of this chapter to establish requirements for tow truck operators, vehicle storage areas, sale of unredeemed property, junk vehicle removal, disposal, sale and authorization for local regulations concerning unauthorized, abandoned, or impounded vehicles. Under this chapter the abandonment of any vehicle creates a prima facie presumption that the last registered owner of record is responsible for the abandonment and is liable for costs incurred in removing, storing, and disposing of the abandoned vehicle. Additionally it is illegal under this chapter for a registered owner to abandon a junk vehicle within the incorporated and unincorporated areas of the state.

10.3.15 RCW 46.61.655 Dropping Load other Materials – Covering

It is the purpose of this section to establish provisions on how vehicles shall be driven or moved on any public highway with regard to how to prevent any of its loads from dropping, sifting, leaking, or otherwise escaping from the vehicle. Additionally it establishes penalties for persons guilty of failing to secure their load.

10.3.16 RCW 70.05.060 Powers and Duties of Local Board of Health

It is the purpose of this section to outline the powers and duties of the local board of health in all matters pertaining to the preservation of the life and health of the people within its jurisdiction and shall:

- Enforce, through the local health officer or the administrative officer appointed under RCW 70.05.040, if any, the public health statutes of the state and rules promulgated by the state board of health and the secretary of health; supervise the maintenance of all health and sanitary measures for the protection of the public health within its jurisdiction;
- enact such local rules and regulations as are necessary in order to preserve, promote, and improve the public health and provide for the enforcement thereof;
- provide for the control and prevention of any dangerous, contagious, or infectious disease within the jurisdiction of the local health department;
- provide for the prevention, control, and abatement of nuisances detrimental to the public health;
- make such reports to the state board of health through the local health officer or the administrative officer as the state board of health may require;
- establish fee schedules for issuing or renewing licenses or permits or for such other services as are authorized by the law and the rules of the state board of health; PROVIDED, that such fees for service shall not exceed the actual cost of providing any such services.

10.3.17 RCW 70.76 Polybrominated Diphenyl Ethers – Flame Retardants

After January 1st, 2008, no person may manufacture, knowingly sell, offer for sale, distribute for sale, or distribute for use in this state noncomestible products containing PBDEs. Exemptions from the prohibition in this section are limited to the following:

- products containing deca-BDE, except as provided in RCW 70.76.030;
- the sale or distribution of any used transportation vehicle manufactured before January 1st, 2008, with component parts containing PBDEs;
- the sale or distribution of any used transportation vehicle parts or new transportation vehicle parts manufactured before January 1st, 2008, that contain PBDEs;
- the manufacture, sale, repair, distribution, maintenance, refurbishment, or modification of equipment containing PBDEs and used primarily for military or federally funded space program applications. The exemption in this subsection does not cover consumer-based goods with broad applicability;

- federal aviation administration fire worthiness requirements and recommendations;
- the manufacture, sale, repair, distribution, maintenance, refurbishment, or modification of any new material or component part used in a transportation vehicle with component parts, including original spare parts, containing deca-BDE;
- the use of commercial deca-BDE in the maintenance, refurbishment, or modification of transportation equipment;
- the sale or distribution of any product containing PBDEs that has been previously owned, purchased, or sold in commerce, provided it was manufactured before the effective date of the prohibition;
- the manufacture, sale, or distribution of any new product or product component consisting of recycled or used materials containing deca-BDE;
- the sale or purchase of any previously owned product containing PBDEs made in casual or isolated sales as defined in RCW 82.04.040 and to sales by nonprofit organizations;
- the manufacture, sale, or distribution of new carpet cushion made from recycled foam containing less than one-tenth of one percent penta-BDE; and
- medical devices.

10.3.18 RCW 70.93 Waste Reduction Recycling and Model Litter Control Act

It is the purpose of this chapter to accomplish litter control, increase waste reduction, and stimulate all components of recycling throughout this state by delegating to the Department of Ecology (DOE) the authority to:

- conduct a permanent and continuous program to control and remove litter from this state to maximum practical extent possible;
- recover and recycle waste materials related to litter and littering;
- foster public and private recycling of recyclable materials;
- increase public awareness of the need for waste reduction, recycling, and litter control;
- coordinate the litter collection efforts and expenditure of funds for litter collection by other agencies identified in this chapter.

It is further the intent and purpose of this chapter to create jobs for employment of youth in litter cleanup and related activities and to stimulate and encourage small, private recycling centers. This program shall include the compatible goal of recovery of recyclable materials to conserve energy and natural resources wherever practicable. Every other department of state government and all local governmental units and agencies of this state shall cooperate with the DOE in the administration and enforcement of this chapter. The intent of this chapter is to add to and coordinate existing recycling and litter control and removal efforts and not terminate or supplant such efforts.

RCW 70.93 makes it a misdemeanor for a person to litter in an amount greater than one cubic foot but less than one cubic yard in an unincorporated area of a county. Persons found guilty shall pay a litter cleanup restitution payment equal to twice the actual cost of cleanup, or fifty dollars per cubic foot of litter, whichever is greater. RCW 70.93 makes it is a gross misdemeanor for a person to litter in an amount of one cubic yard or more in an unincorporated area of a county. Persons found guilty shall pay a litter cleanup restitution payment equal to twice the actual cost of cleanup, or one hundred dollars per cubic foot of litter, whichever is greater. Additionally, it is a gross misdemeanor for a person to abandon a junk vehicle on property located in an unincorporated area. If a junk vehicle is abandoned in an unincorporated area, the vehicle's registered owner shall also pay a cleanup restitution payment equal to twice the cost incurred in the removal of the junk vehicle.

RCW 70.93.093 requires a recycling program at every official gathering and sports facility in which vendors are selling beverage in single-use aluminum cans, and/or glass and/or plastic bottles and where there is a commercial curbside recycling collection program. The beverage vendors are responsible for providing and funding the recycling program at the official gathering/sports facility.

10.3.19 RCW 70.94 Washington Clean Air Act

It is the purpose of this chapter to preserve, protect, and enhance the air quality for current and future generations. Air is an essential resource that must be protected from harmful levels of pollution. Improving air quality is a matter of statewide concern and is in the public interest. It is the intent of this chapter to secure and maintain levels of air quality that protect human health and safety, including the most sensitive members of the population, to comply with the requirements of the federal clean air act, to prevent injury to plant, animal life, and property, to foster the comfort and convenience of Washington's inhabitants, to promote the economic and social development of the state, and to facilitate the enjoyment of the natural attractions of the state.

It is further the intent of this chapter to protect the public welfare, to preserve visibility, to protect scenic, aesthetic, historic, and cultural values, and to prevent air pollution problems that interfere with the enjoyment of life, property, or natural attractions.

Because of the extent of the air pollution problem, the legislature finds it necessary to return areas with poor air quality to levels adequate to protect health and the environment as expeditiously as possible. Further, it is the intent of this chapter to prevent any areas of the state with acceptable air quality from reaching air contaminant levels that are not protective of human health and the environment. The legislature recognizes that air pollution control projects may affect other environmental media. In selecting air pollution control strategies, state and local agencies shall support those strategies that lessen the negative environmental impact of the project on all environmental media, including air, water, and land. The legislature further recognizes that energy efficiency and energy conservation can help to reduce air pollution and shall therefore be considered when making decisions on air pollution control strategies and projects.

It is the policy of the state that the costs of protecting the air resource and operating state and local air pollution control programs shall be shared as equitably as possible among all sources whose emissions cause air pollution. It is also declared as public policy that regional air pollution control programs are to be encouraged and supported to the extent practicable as essential instruments for the securing and maintenance of appropriate levels of air quality. To these ends it is the purpose of this chapter to safeguard the public interest through an intensive, progressive, and coordinated state-wide program of air pollution prevention and control, to provide for an appropriate distribution of responsibilities, and to encourage coordination and cooperation between the state, regional, and local units of government, to improve cooperation between state and federal government, public and private organizations, and the concerned individual, as well as to provide for the use of all known, available, and reasonable methods to reduce, prevent, and control air pollution.

The legislature recognizes that the problems and effects of air pollution that cross political boundaries, are frequently regional or inter-jurisdictional in nature, and are dependent upon the existence of human activity in areas having common topography and weather conditions conducive to the buildup of air contaminants. In addition, the legislature recognizes that air pollution levels are aggravated and compounded by increased population, and its consequences. These changes often result in increasingly serious problems for the public and the environment. The legislature further recognizes that air emissions from thousands of small individual sources are major contributors to air pollution in many regions of the state. As the population of a region grows, small sources may contribute an increasing proportion of that region's total air emissions. It is declared to be the policy of the state to achieve significant reductions in emissions from those small sources whose aggregate emissions constitute a significant contribution to air pollution in a particular region.

It is the intent of the legislature that air pollution goals be incorporated in the missions and actions of state agencies

10.3.20 RCW 70.95 Solid Waste Management - Reduction and Recycling

The purpose of this chapter is to establish a comprehensive state-wide program for solid waste handling, and solid waste recovery and/or recycling which will prevent land, air, and water pollution and conserve the natural, economic, and energy resources of this state. To this end it is the purpose of this chapter to:

- assign primary responsibility for adequate solid waste handling to local government, reserving to the state; however, those functions necessary to assure effective programs throughout the state;
- provide for adequate planning for solid waste handling by local government;
- provide for the adoption and enforcement of basic minimum performance standards for solid waste handling;
- encourage the development and operation of waste recycling facilities needed to accomplish the management priority of waste recycling, and to promote consistency in the requirements for such facilities throughout the state;

- provide technical and financial assistance to local governments in the planning, development, and conduct of solid waste handling programs;
- encourage storage, proper disposal, and recycling of discarded vehicle tires and to stimulate private recycling programs throughout the state;
- encourage the development and operation of waste recycling facilities and activities needed to accomplish the management priority of waste recycling and to promote consistency in the permitting requirements for such facilities and activities throughout the state.

It is the intent of the legislature that local governments are encouraged to use the expertise of private industry and to contract with private industry to the fullest extent possible to carry out solid waste recovery and/or recycling programs.

10.3.21 RCW 70.95.510 Tire Replacement Fees

There is levied a one dollar per tire fee on the retail sale of each new replacement tires. The fee imposed must be paid by the buyer to the seller and each seller shall collect from the buyer the full amount of the fee. The fee collected less the ten percent amount retained by the seller must be paid to the department of revenue.

10.3.22 RCW 70.95C Waste Reduction

It is the purpose of this chapter to encourage reduction in the use of hazardous substances and reduction in the generation of hazardous waste whenever economically and technically practicable. Additionally, state government should undertake an aggressive program designed to reduce and recycle solid and hazardous wastes produced in the operations of state buildings and facilities to the maximum extent possible.

10.3.23 RCW 70.95D Solid Waste Incinerator and Landfill Operators

It is the purpose of this chapter to require all owners or operators of solid waste incineration facilities and landfills to employ a certified operator. Additionally, the chapter establishes a process for operator certification.

10.3.24 RCW 70.95E Hazardous Waste Fees

It is the purpose of this chapter to impose an annual fee upon every hazardous waste generator doing business in the state. A hazardous waste generator shall be exempt from the fee imposed under this chapter if the value of the products, gross proceeds of sales, or gross income of the business, from all business activities of the hazardous waste generator, is less than twelve thousand dollars in the current calendar year.

10.3.25 RCW 70.95F Labeling of Plastics

It is the purpose of this chapter to adopt nation-wide plastics industry standards. No person may distribute, sell, or offer for sale, in this state, a plastic bottle or rigid plastic container unless the container is labeled with a code identifying the appropriate resin type used to produce the structure of the container. The code shall consist of a number placed within three triangulated arrows and letters placed below the triangle of arrows. The triangulated arrows shall be equilateral, formed by three arrows with the apex of each point of the triangle at the midpoint of each arrow, rounded with a short radius. The pointer (arrowhead) of each arrow shall be at the

midpoint of each side of the triangle with a short gap separating the pointer from the base of the adjacent arrow. The triangle, formed by the three arrows curved at their midpoints shall depict a clockwise path around the code number. The number and letters used shall be as follows:

- 1 = PETE (polyethylene terephthalate)
- 2 = HDPE (high density polyethylene)
- 3 = V (vinyl)
- 4 = LDPE (low density polyethylene)
- 5 = PP (polypropylene)
- 6 = PS (polystyrene)
- 7 = OTHER

10.3.26 RCW 70.95G Packages Containing Metals

It is the purpose of this chapter to achieve a reduction in toxicity without impeding or discouraging the expanded use of post-consumer materials in the production of packaging and its components. The sum of the concentration levels of lead, cadmium, mercury, and hexavalent chromium present in any package or packaging component shall not exceed 100 parts per million by weight. This shall apply only to lead, cadmium, mercury, and hexavalent chromium that have been intentionally introduced as an element during manufacturing or distribution. Manufacturers must certify that a package or packaging component is in compliance with the requirements of this chapter.

10.3.27 RCW 70.95I Used Oil Recycling

It is the purpose of this chapter to encourage the collection, reuse and recycling of used oil by households and businesses. To this end, each local government must develop a used oil recycling plan containing the following elements:

- establish a local goal for household used oil recycling,
- sign and container ordinances enforcing the requirements of RCW 70.95I.040,
- conduct a used oil recycling public education program,
- establish a funding mechanism to implement the adopted used oil recycling plan.

Additionally, this chapter prohibits the use of used oil for dust suppression or weed abatement and prohibits owners or operators of solid waste landfills from knowingly accepting used oil for disposal in the landfill.

10.3.28 RCW 70.95J Municipal Sewage Sludge – Biosolids

The purpose of this chapter is to provide the DOE and local governments with the authority and direction to meet federal regulatory requirements for municipal sewage sludge. Additionally, it establishes a statewide program to manage municipal sewage sludge to the maximum extent

possible to ensure that it is reused as a beneficial commodity and is managed in a manner that minimizes risk to the public health and safety and the environment.

10.29 RCW 70.95K Biomedical Waste

The purpose of this chapter is to establish a uniform statewide definition of biomedical waste to simplify compliance with local regulations while preserving local control of biomedical waste management. Additionally, it prohibits a person from intentionally placing unprotected sharps or a sharps waste container into:

- recycling containers provided by a city, county, or solid waste collection company, or any other recycling collection site unless that site is specifically designated by a local health department as a drop-off site for sharps waste containers;
- cans, carts, drop boxes, or other containers in which refuse, trash, or solid waste has been placed for collection if a source separated collection service is provided for residential sharps waste.

It is not a violation of this chapter to place a sharps waste container into a household refuse receptacle.

10.3.30 RCW 70.95L Detergent Phosphorus Content

The purpose of this chapter is to impose a statewide limit on the phosphorus content of household detergents to prevent the phosphorus loading of surface waters which can stimulate growth of weeds and algae, and have adverse environmental, health, and aesthetic effects. Additionally, it is to reduce the discharge of phosphorus into the state's surface and grounds waters by limiting the amount of phosphorus contained within detergents.

10.3.31 RCW 70.95M Mercury

Under this chapter, the Department of General Administration must revise its rules, policies, and guidelines to give priority and preference to the purchase of equipment, supplies, and other products that contain no mercury-added compounds or components, unless: (a) there is no economically feasible nonmercury-added alternative that performs a similar functions; or (b) the product containing mercury is designed to reduce electricity consumption by at least forty percent and there is no nonmercury or lower mercury alternative available that saves the same or a greater amount of electricity as the exempted product. In circumstances where a nonmercury-added product is not available, preference must be given to the purchase of products that contain the least amount of mercury added to the product necessary for the required performance.

10.3.32 RCW 70.95N Electronic Products Recycling

The purpose of this chapter is to require electronic manufactures of electronic products to provide consumer-convenient recycling services throughout the state no later than January 1, 2009. Products covered include televisions, desktop computers, computer monitors, laptop or portable computers sold or given to any household, charity, school district, small business, or small government located within the state. Televisions and computer monitors include both cathode ray tubes and flat screens having a viewing area greater than four inches when measured diagonally.

10.3.33 RCW 70.103 Lead-Based Paint

The Legislature finds that lead hazards associated with lead-based paint represents a significant and preventable environmental health problem. Lead-based paint is the most widespread of the various sources of lead exposure to the public. For the welfare of the people of the State of Washington, this chapter establishes a lead-based paint activities program within the Department of Community, Trade, and Economic Development (CTED) to protect the general public from exposure to lead hazards and to ensure the availability of a trained and qualified workforce to identify and address lead-based paint hazards. The Legislature recognizes that CTED is not a regulatory agency and may delegate enforcement responsibilities under this Chapter 322, Laws of 2003 to local governments or private entities.

10.3.34 RCW 70.105 Hazardous Waste Management

The purpose of this chapter is to establish a comprehensive state-wide framework for the planning, regulation, control, and management of hazardous waste which will prevent land, air, and water pollution and conserve the natural, economic, and energy resources of the state. To this end, it is the purpose of this chapter to:

- provide broad powers of regulation to the DOE relating to management of hazardous wastes and releases of hazardous substances,
- promote waste reduction and to encourage other improvements in waste management practices,
- promote cooperation between state and local governments by assigning responsibilities for planning for hazardous wastes to the state and planning for moderate-risk waste to local government,
- provide for prevention of problems related to improper management of hazardous substances before such problems occur,
- assure that needed hazardous waste management facilities may be sited in the state, and to ensure the safe operation of the facilities.

10.3.35 RCW 70.105D Hazardous Waste Cleanup – Model Toxics Control Act

The purpose of this chapter is to raise sufficient funds to clean up all hazardous waste sites within the state and to prevent the creation of future hazards due to improper disposal of toxic wastes into the state's land and waters. Specifically, two toxic control accounts are created within the state treasury from revenues raised by the tax imposed under RCW 82.21.030.

State Toxic Control Account

Moneys in this account may be used only to carry out the purpose of this chapter, including, but not limited to the following activities:

- the state's responsibility for hazardous waste planning, management, regulation, enforcement, technical assistance, and public education required under Chapter 70.105 RCW,
- the state's responsibility for solid waste planning, management, regulation, enforcement, and public education required under Chapter 70.95 RCW,

- the hazardous waste clean up program required under this chapter,
- state matching funds required under the federal cleanup law,
- financial assistance for local programs in accordance with Chapters 70.95, 70.95C, 70.95I, and 70.105 RCW,
- state government programs for the safe reduction, recycling, or disposal of hazardous waste from households, small businesses, and agriculture,
- hazardous materials emergency response training,
- water and environmental health protection and monitoring programs;
- programs authorized under Chapter 70.146 RCW,
- a public participation program, including regional citizen advisory committees,
- public funding to assist potentially liable persons to pay for the costs of remedial action in compliance with cleanup standards under RCW 70.105D.030(2)(e) but only when the amount and terms of such funding are established under a settlement agreement under RCW 70.105D.040(4) and when the director has found that the funding will achieve both (A) a substantially more expeditious or enhanced cleanup than could otherwise occur, and (B) the prevention or mitigation of unfair economic hardship,
- development and demonstration of alternative management technologies designed to carry out the top two hazardous waste management priorities of RCW 70.105.150.

Local Toxic Control Account
Moneys deposited in this account shall be used by the DOE for grants or loans to local governments for the following purposes in the descending order of priority:

- remedial actions;
- hazardous waste plans and programs under Chapter 70.105 RCW;
- solid waste plans and programs under Chapters 70.95, 70.95C, 70.95I, and 70.105 RCW;
- funds for a program to assist in the assessment and cleanup of sites of methamphetamine production, but not to be used for the initial contamination of such sites, consistent with the responsibilities and intent of RCW 69.50.511.

No moneys deposited into either the state or local toxic control accounts may be used for solid waste incineration feasibility studies, construction, maintenance, or operation.

10.3.36 RCW 70.106 Poison Prevention – Labeling and Packaging

The purpose of this chapter is to provide for special packaging to protect children from personal injury, serious illness, or death resulting from handling, using, or ingesting of household substances, and to provide penalties.

10.3.37 RCW 70.240 Children's Safe Products

Beginning July 1st, 2009, no manufacturer, wholesalers, or retailer may manufacture, knowingly sell, offer for sale, distribute for sale, or distribute for use in this sate a children's product or product containing the following:

- except as provided within subsection of this section, lead at more than .009 percent by weight (ninety parts per million);
- cadmium at more than .004 percent by weight (forty parts per million); or
- phthalates, individually or in combination, at more than 0.10 percent by eight (one thousand parts per million.

If determined feasible for manufacturers to achieve and necessary to protect children's health, the DOE, in consultation with the Washington State Department of Health (DOH), may by rule require that no manufacturer, wholesalers, or retailer may manufacture, knowingly sell, offer for sale, distribute for sale, or distribute for use in this state a children's product or product component containing lead at more than .004 percent by weight (forty parts per million).

10.3.38 RCW 70.270 Replacement of Lead Wheel Weights

Requires the DOE to: (1) Prepare and distribute information to person that replace or balance motor vehicle tires in this state and persons in the tire and wheel weight manufacturing, distribution, wholesale, and retail industries, to maximum extent practicable, to assist them in identifying environmentally preferred wheel weights; and (2) Issue a warning letter to a person who fails to comply with section 3 of the act and offer information or other appropriate assistance. Requires a person whose business includes replacing or balancing motor vehicle tires to: (1) Replace lead wheel weights with environmentally preferred wheel weights beginning January 1st, 2011; and (2) Recycle the lead weights that they remove.

10.3.39 RCW 70.275 Mercury Containing Lights – Proper Disposal

Requires all mercury-containing lights collected in the state by product stewardship programs or other collection programs to be recycled. Requires all persons, residents, government, commercial, industrial, and retail facilities and office buildings to recycle their end-of-life mercury-containing lights. Require producers of mercury-containing lights sold in or into the state for residential use to fully finance and participate in a product stewardship program and to pay annual fees to the DOE for enforcement and administration costs. Requires product producers to play a significant role in financing no-cost collection and processing programs for mercury-containing lights. Prohibits the distribution, sale or offer of mercury containing lights for residential use unless the producer is participating in a product stewardship program. Requires the DOE to publish certain information on its web site regarding product stewardship programs. Creates the product stewardship program.

10.3.40 RCW 70.280 Bisphenol A – Restrictions on Sale

Prohibits a manufacturer, wholesaler, or retailer from knowingly manufacturing, selling, offering for sale, or distributing for sale or use in this state sports bottles that contain bisphenol A or certain containers that contain bisphenol A if the container is designed or intended to be filled with any liquid, food or beverage primarily for consumption by children three years of age or younger. Requires a manufacturer of products that are restricted under the act to: (1) Notify

persons that sell the manufacture's product in this state about the provisions of the act no less than ninety days before the effective date of the restrictions; and (2) Recall the product and reimburse the retailer or any other purchaser for the product. Directs expenses to cover administration of the act to be paid from the toxic control account.

10.3.41 RCW 70.285 Brake Friction Material

Limits the use of certain substances in brake friction material. Requires the DOE to: (1) Review risk assessments, scientific studies, and other relevant analyses regarding alternative brake friction material and its availability; (2) Consider any new science with regard to the bioavailability and toxicity of copper; (3) Convene a brake friction material advisory committee if it finds that the material may be available; and (4) Enforce the act.

10.3.42 RCW 72.09.260 Litter Cleanup Programs - Requirements

The Legislature finds that the amount of litter along the state's roadways is increasing at an alarming rate and that local governments often lack the human and fiscal resources to remove litter from public roads. The Legislature also finds that persons committing nonviolent, drug-related offenses can often be productively engaged through programs to remove litter from county and municipal roads. It is therefore the intent of the Legislature to assist local units of government in establishing community restitution programs for litter cleanup and to establish a funding source for such programs.

The DOE shall assist local units of government in establishing community restitution programs for litter cleanup. Community restitution litter cleanup programs must include the following:

- procedures for documenting the number of community restitution hours worked in litter cleanup by each offender;
- plans to coordinate litter cleanup activities with local governmental entities responsible for roadside and park maintenance;
- insurance coverage for offenders during litter cleanup activities pursuant to RCW 51.12.045;
- provision of adequate safety equipment and, if needed, weather protection gear; and
- provision for including felons and misdemeanants in the program.

10.3.43 RCW 81.77 Solid Waste Collection Companies

No person, his lessees, receivers, or trustees, shall engage in the business of operating as a solid waste collection company in this state, except in accordance with this chapter; provided, that the provisions of this chapter shall not apply to the operations of any solid waste collection company under a contract of solid waste disposal with any city or town, nor to any city or town which itself undertakes the disposal of solid waste.

The WUTC shall supervise and regulate every solid waste collection company in the state by:

- fixing and altering its rates, charges, classifications, rules, and regulations,

- regulating the accounts, services, and safety of operations,
- requiring the filing of annual and other reports and data,
- supervising and regulating such persons or companies in all other matters affecting the relationship between them and the public which they serve,
- requiring compliance with local solid waste management plans and related implementation ordinances,
- 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.

No solid waste collection company shall hereafter operate for the hauling of solid waste for compensation without first having obtained from the WUTC a certification declaring that public convenience and necessity requires such operation.

10.3.44 RCW 81.80 Motor Freight Carriers

The business of operating as a motor carrier of freight for compensation along the highways of this state is declared to be a business affected with a public interest. The rapid increase of motor carrier freight traffic, and the fact that, under the existing law many motor trucks are not effectively regulated, have increased the dangers and hazards on public highways and make it imperative that more complete regulation should be employed to the end that the highways may be rendered safer for the use of the general public; that the wear of such highways may be reduced; that congestion on highways may be minimized; that the shippers of the state may be provided with a stabilized service and rate structure; that sound economic conditions in such transportation and among such carriers may be fostered in the public interest; that adequate, economical, and efficient service by motor carriers, and reasonable charges therefor, without unjust discrimination, undue preferences or advantages, or unfair or destructive competitive practices may be promoted; that the common carriage of commodities by motor carrier may be preserved in the public interest; that the relations between, and transportation by and regulation of, motor carriers and other carriers may be improved and coordinated so that the highways of the state of Washington may be properly developed and preserved, and the public may be assured adequate, complete, dependable, and stable transportation service in all its phases.

10.3.45 RCW 82.19 Litter Tax

The purpose of this chapter is to accomplish effective litter control within the state and to allocate a portion of the cost of administering this chapter to those industries whose products, including the packages, wrapping, and containers thereof, are reasonably related to the litter problem. The tax imposed in this chapter shall only apply to the value of products or the gross proceeds of sales of products falling into the following categories:

- food for human or pet consumption
- groceries

- cigarettes and tobacco products
- soft drinks and carbonated waters
- beer and other malt beverages
- wine
- newspapers and magazines
- household paper and paper products
- glass containers
- metal containers
- plastic or fiber containers made of synthetic materials;
- cleaning agents and toiletries
- non-drug drugstore sundry products.

Taxes collected under this chapter shall be deposited in the waste reduction, recycling, and litter control account under RCW 70.93.180.

10.3.46 RCW 82.21 Hazardous Substance Tax – Model Toxic Control Act

It is the intent of this chapter to impose a tax only once for each hazardous substance possessed in this state and to tax the first possession of all hazardous substances, including substance and products that the DOE determines to present a threat to human health or the environment. However, it is not intended to impose a tax on the first possession of small amounts of any hazardous substance (other than petroleum and pesticide products) that is first possessed by a retailer for the purpose of sale to ultimate consumers. This chapter is not intended to exempt any person from tax liability under any other law.

10.3.47 RCW 90.48 Water Pollution Control

It is the purpose of this chapter to control and prevent the pollution of streams, lakes, rivers, ponds, inland waters, salt waters, watercourses, and other surface and underground waters of the State of Washington.

10.3.48 RCW 90.54 Water Resource Act of 1971

It is the purpose of this chapter to set forth fundamentals of water resource policy for the state to ensure that waters of the state are protected and fully utilized for the greatest benefit to the people of the State of Washington and, in relation thereto, to provide direction to the DOE, other state agencies and officials, and local government in carrying out water and related resource programs.

10.3.49 RCW 90.76 Underground Storage Tanks

It is the intent of this chapter to establish an underground storage tank program designed, operated, and enforced in a manner that, at a minimum, meets the requirements for delegation of the federal underground storage tank program for the RCRA.

10.3.50 WAC 16-228 General Pesticide Rules

This chapter promulgated under Chapter 15.58 RCW, the Waste Pesticide Control Act (WPCA) authorizes the Washington State Department of Agriculture (WSDA) to implement the provisions of that act. These regulations establish requirements, standards and criteria to protect the immediate and future health and welfare of the people of the state with regard to the application and control of various pesticides.

10.3.51 WAC 173-200 Water Quality Standards for Ground Waters

This chapter implements Chapter 90.48 RCW and Chapter 90.54 RCW of the State of Washington. The purpose of this chapter is to maintain the highest quality of the state's ground water and protect existing and future beneficial uses of the ground water through the reduction or elimination of the discharge of contaminants to the state's ground waters.

10.3.52 WAC 173-300 Certification of Operators of Solid Waste Incinerator and Landfill Facilities

This regulation requires the owner or operator in responsible charge of a solid waste incinerator or solid waste landfill to be certified in the operation and maintenance of the facility. To achieve this, the DOE shall, to the greatest extent possible, rely on the certification standards and procedures developed by national organizations and the federal government. Certification under this act is available to all individuals who can meet the minimum qualifications for a given type of facility. Operating personnel not required to be certified by Chapter 70.95D RCW are encouraged to become certified on a voluntary basis.

10.3.53 WAC 17-303 Dangerous Waste Regulations

This regulation implements Chapter 70.105 RCW, the Hazardous Waste Management Act (HWMA) of 1976 as amended in 1980 and 1983, and implements, in part, Chapter 70.105A RCW in Subtitle C of Public Law 94.580, the RCRA, which the legislature has empowered the DOE to implement. The purpose of this regulation is to:

- designate those solid wastes which are dangerous or extremely hazardous to the public health and environment;
- provide for surveillance and monitoring of dangerous and extremely hazardous wastes until they are detoxified, reclaimed, neutralized, or disposed of safely;
- provide the form and rules necessary to establish a system for manifesting, tracking, reporting, monitoring, record keeping, sampling, and labeling dangerous and extremely hazardous wastes;
- establish the siting, design, operation, closure, post-closure, financial, and monitoring requirements for dangerous and extremely hazardous waste transfer, treatment, storage, and disposal facilities;
- establish design, operation, and monitoring requirements for managing the state's extremely hazardous waste disposal facility;
- establish and administer a program for permitting dangerous and extremely hazardous waste management facilities;

- encourage recycling, reuse, reclamation, and recovery to the maximum extent possible.

10.3.54 WAC 173-304 Minimum Functional Standards for Solid Waste Handling

This regulation is promulgated under the authority of Chapter 70.95 RCW to protect public health, to prevent land, air, and water pollution, and conserve the state's natural, economic, and energy resources by:

- setting minimum functional performance standards for the proper handling of all solid waste materials originating from residences, commercial, agricultural and industrial operations and other sources;
- identifying those functions necessary to assure effective solid waste handling programs at both the state and local level;
- following the direction set by the legislature for the management of solid waste in order of descending priority as applicable:
  - (a) waste reduction;
  - (b) waste recycling;
  - (c) energy recovery or incineration;
  - (d) land filling.
- describing the responsibility of persons, municipalities, regional agencies, state and local government under existing laws and regulations related to solid waste;
- requiring use of the best available technology for siting, and all known available and reasonable methods for designating, constructing, operating and closing solid waste handling facilities;
- establishing these standards as minimum standards for solid waste handling to provide a statewide consistency and expectation as to the level at which solid waste is managed throughout the state. Local ordinances setting standards for solid waste handling shall not be less stringent than these minimum standards, and shall be adopted not later than one year after the effective date of this regulation. Local ordinances need not adopt WAC 173-304-011, County planning requirements, but shall otherwise comply with the requirements of WAC 173-304-011. Solid waste regulations or ordinances adopted by counties, cities, or jurisdictional boards of health shall be filed with the department ninety days following adoption.

Note: WAC 173-304 is primarily applicable at this time to landfills that were closed under this regulation.

10.3.55 WAC 173-308 Biosolids Management

The purpose of this chapter is to protect human health and the environment when biosolids are applied to the land. This chapter encourages the maximum beneficial use of biosolids, and is intended to conform to all applicable federal rules adopted under the Clean Water Act (CWA) as

it existed on February 4, 1987. This chapter establishes permitting requirements for treatment works treating domestic sewage that engage in applicable biosolids treatment or management practices, including any person, site, or facility that has been designated as a treatment works treating domestic sewage.

This chapter establishes standards for the treatment, quality, and management of municipal sewage sludge and domestic septage that are directly enforceable, and that allow these materials to be classified and managed as biosolids.

This chapter establishes requirements, standards, management practices, monitoring, record keeping and reporting requirements that are applicable when biosolids are applied to the land and when municipal sewage sludge is disposed in a municipal solid waste landfill unit as defined in WAC 173.351.100.

This chapter establishes fees for permits issued to facilities that engage in applicable biosolids management activities. Fees under WAC 173.308.320 do not apply to persons whose activity is limited to pumping, hauling, temporarily storing, or delivering septage or biosolids to other facilities or land application sites, if:

- they do not engage in the treatment of the septage or biosolids;
- they have not been designated as a treatment works for treating domestic sewage;
- the generating and receiving facility or land application site is in compliance with the requirements of WAC 173.308.310.

10.3.56 WAC 173-310 Litter Receptacles

By the provisions of Chapter 70.93 RCW, the DOE has been delegated authority to conduct a permanent and continuous program to control and remove litter from this state to the maximum practical extent possible. The purpose of this chapter is to provide minimum standards for litter receptacles and to prescribe the use, placement and distribution of litter receptacles throughout the state, under the authority set forth in RCW 70.93.040 and 70.93.090.

10.3.57 WAC 173-312 Coordinated Prevention Grants

The purpose of this chapter is to set forth requirements for the conduct of a financial assistance program to provide grants to local governments for local hazardous waste plans and programs and solid waste plans and programs, pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.070(3). The plans and programs referenced in RCW 70.105D.070(3) are designated to prevent or minimize environmental contamination. Therefore, the grants are designated "coordinated prevention grants" under this chapter.

A further purpose of this chapter is to establish a structure for the administration of coordinated prevention grants funded from the Local Toxic Control Account (LTCA) authorized by RCW 82.21.030. The administrative structure may be extended to other waste management grant programs using other funding sources including the 1972 waste disposal facilities bonds authorized by Chapter 43.83A RCW, the 1980 waste disposal facilities bonds authorized by Chapter 43.99 RCW, the litter control account authorized by Chapter 70.93 RCW, the vehicle tire recycling account authorized by Chapter 70.95 RCW, the solid waste management account authorized by Chapter 70.95 RCW, the hazardous waste assistance account authorized by

Chapter 70.95E RCW, and other waste management funding sources that may be established in the future by the legislature.

The purposes of the coordinated prevention grants program are to:

- consolidate all grant programs funded from the local toxics control account and such other programs in the second paragraph of this section as may be selected, into a single program, except for remedial action, public participation, and citizen proponent negotiations grants;
- promote regional solutions and intergovernmental cooperation;
- prevent or minimize environmental contamination by providing financial assistance to local governments to help them comply with state solid and hazardous waste laws and regulations;
- provide funding assistance for local solid and hazardous waste planning and for implementation of some programs and projects in those plans;
- encourage local responsibility for solid and hazardous waste management;
- improve efficiency, consistency, reliability, and accountability of grant administration.

10.3.58 WAC 173-321 Public Participation Grants

The DOE is directed by the MTCA to provide grants up to sixty thousand dollars to persons who may be adversely affected by a release or threatened release of a hazardous substance and not-for-profit public interest groups. These grants shall be used to facilitate public participation in the investigation and remediation of a release or threatened release of a hazardous substance and to facilitate public participation in the implementation of the state's solid and hazardous waste management priorities.

10.3.59 WAC 173-322 Remedial Action Grants and Loans

This chapter recognizes that the state contains hundreds of hazardous waste sites which threaten the state's water resources, including those used for public drinking water; that many of our municipal landfills are current or potential hazardous waste sites and present serious threats to human health and the environment; and that the costs of eliminating these threats in many cases are beyond the financial means of local governments and ratepayers.

This chapter establishes requirements for a program of grants to local governments for remedial action pursuant to RCW 70.105D.070 (3) (a) and (7). The DOE may provide grants to local governments for remedial actions including site hazard assessments, site studies and remediations, and safe drinking water actions.

10.3.60 WAC 173-331 Vehicle Battery Recycling

The DOE has been authorized under RCW 70.95.670 to implement and enforce a vehicle battery recycling program. The purpose of this chapter is to establish procedures for implementation and enforcement of RCW 70.95.610 through 70.95.660, which is designed to accomplish the recycling of used vehicle batteries through a system of exchanging batteries at the point of sale.

10.3.61 WAC 173-333 Persistent, Bioaccumulative Toxins (PBTs)

The goal of this chapter is to reduce and phase-out PBTs uses, releases and exposures in Washington. The DOE recognizes that many factors will influence whether and when this goal can be attained and that those factors will often vary depending on the PBT and the uses of the PBT. These factors include environmental and human health benefits, economic and social costs, technical feasibility, availability of safer substitutes, and consistency with other regulatory requirements. This chapter establishes a process that the DOE will use to evaluate and identify actions that should be taken for particular PBTs. This process is designed to enhance actions being taken under other environmental laws and regulations.

10.3.62 WAC 173-340 Model Toxics Control Act - Cleanup

This chapter is promulgated under the MTCA. It establishes administrative processes and standards to identify, investigate, and clean up facilities where hazardous substances have come to be located. It defines the role of the DOE and encourages public involvement in decision making at these facilities. The goal of this chapter is to implement the policy declared by Chapter 70.105D RCW. This chapter provides a workable process to accomplish effective and expeditious cleanups in a manner that protects human health and the environment. This chapter is primarily intended to address releases of hazardous substances caused by past activities, although its provisions may be applied to potential and ongoing releases of hazardous substances from current activities.

10.3.63 WAC 173-345 Transportation of Recyclable Materials

The purpose of this chapter is to establish minimum standards for the transportation of recyclables materials; establish notice and reporting standards for recycling facilities and material recovery facilities (MRFs); ensure that recyclable materials are not delivered for disposal; establish penalties for transporters of recyclable materials, recycling facilities, and MRFs that do not meet the standards of this chapter.

10.3.64 WAC 173-350 Solid Waste Handling Standards

This chapter is adopted under the authority of Chapter 70.95 RCW, Solid Waste Management – Reduction and Recycling, to protect public health, to prevent land, air, and water pollution, and conserve the state's natural, economic, and energy resources by:

- setting minimum functional performance standards for the proper handling and disposal of solid waste originating from residences, commercial, agricultural and industrial operations, and other sources;
- identifying whose functions necessary to assure effective solid waste handling programs at both the state and local level;
- following the priorities for the management of solid waste as set by the legislature in Chapter 70.95 RCW, Solid Waste Management – Reduction and Recycling;
- describing the responsibility of persons, municipalities, regional agencies, state and local governments related to solid waste;
- requiring solid waste handling facilities to be located, designed, constructed, operated, and closed in accordance with this chapter;

- promoting regulatory consistency by establishing statewide minimum standards for solid waste handling; and
- encouraging the development and operation of waste recycling facilities and activities needed to accomplish the management priority of waste recycling.

This chapter superseded many of the citations in WAC 173-304.

10.3.65 WAC 173-350-990 Criteria for Inert Waste

Provides the criteria for deterring if a solid waste is an inert waste.

10.3.66 WAC 173-351 Criteria for Municipal Solid Waste Landfills

The purpose of this regulation is to establish minimum state-wide standards for all municipal solid waste landfill (MSWLF) units under the authority of Chapter 70.95 RCW, as amended, in order that jurisdictional health authorities can enact ordinances equally as or more stringent than this regulation and to have jurisdictional health authorities implement such ordinances through a permit system set forth in Section 700. It is also the purpose of this regulation to implement rule making by the EPA under the authority of subtitle D of the RCRA, as amended in 1984, and under the authority of Section 405(d) of the CWA, as amended. The CWA required RPAs "to establish standards for sewage sludge that is co-disposed with municipal solid waste." EPA satisfied both statutory requirements with the publication of 40 CFR Part 258-Criteria for Municipal Solid Waste Landfills on October 9, 1991. These minimum statewide criteria ensure the protection of human health and the environment.

10.3.67 WAC 173-360 Underground Storage Tank Regulations

The purpose of this chapter is to address the serious threat posed to human health and the environment by leaking underground storage systems containing petroleum and other regulated substances. The DOE is directed by Chapter 90.76 RCW to establish an underground storage tank program designed, operated and enforced in a manner that, at a minimum, meets the requirements for delegation of the Federal Underground Storage Tank Program of the RCRA. The legislative intent is that statewide requirements for underground storage tanks adopted by the DOE be consistent with and no less stringent than the objectives outlined in the federal regulations. Because certain areas of the state possess physical characteristics that make them especially vulnerable to threats from leaking underground storage tanks, local requirements more stringent than the state-wide requirements may apply in these environmentally sensitive areas.

10.3.68 WAC 173-425 Outdoor Burning

This chapter promulgated under Chapter 70.94 RCW, the Washington Clean Air Act (WCAA), authorizes the DOE to implement the provisions of that act. This rule establishes controls for open burning in the state in order to:

- reduce open burning to the greatest extent practical by eliminating it in:
  - (a) areas that exceed ambient air quality standards for PM-10 and/or carbon monoxide;
  - (b) urban growth areas or cities with a population of 10,000 or more by 12/31/00;
  - (c) UGAs for cities of 5000 or more by 12/31/00;

(d) UGAs that are contiguous with (b) by 12/31/00;

(e) A UGA not associated with an incorporated city by 12/31/06;

(f) UGAs for cities with a population of less than 5000 by 12/31/06.

- establish a limited burning program (for areas where open burning is allowed), including procedures by which open burning may be conducted;
- encourage the development and use of alternate methods of debris disposal.

10.3.69 WAC 173-430 Agricultural Burning

This chapter promulgated under Chapter 70.94 RCW, the Washington Clean Air Act (WCAA), authorizes the DOE to implement the provisions of that act. This rule establishes controls for agricultural burning in the state in order to minimize adverse health and the environmental affects from agricultural burning. The control strategies include:

- establishing a permit program with minimum statewide requirements;
- providing for implementation of a research program to explore and identify economical and practical alternatives to agricultural burning;
- encouraging and developing economically feasible alternative methods to agricultural burning;
- limiting the scope of the rule to agricultural burning and distinguishing between agricultural burning and other types of burning;
- providing for local administration of the permitting program through delegation.

10.3.70 WAC 173-900 Electronic Products Recycling Program

The purpose of this chapter is to address the serious threat posed to human health and the environment by the improper disposal of electronic products. This rule would require manufactures of covered electronic products to:

- register with the DOE before selling their products in Washington,
- pay an annual administrative fee to cover the DOE's oversight costs, and
- brand all of their electronic products sold in or into Washington State.

The rule requires Washington retailers to sell branded products. The rule's registration requirements also apply to collectors and transporters of covered electronic products.

10.3.71 WAC 480-70 Solid Waste and/or Refuse Collection Companies

WAC 480-70, sections 500 through 570, specifies how regulated solid waste collection companies handle biohazardous or biomedical waste. Specifically, section 500 establishes operational requirements for handling and transporting, section 510 describes training requirements, section 530 describes packaging and containment requirements, section 540

describes the transfer to off-site treatment and disposal facilities, section 550 describes the shipping paper requirements, section 560 describes the insurance requirements and section 570 describes the reporting of accidents.

The majority of WAC 480-70, however, discusses contracts, equipment, certificates, and service regulation pertaining to solid waste in general. Because biomedical waste is more dangerous, it requires closer attention, thus, it is given more requirements and discussion within the chapter.

10.4 LOCAL REGULATORY REVIEW

10.4.1 Benton-Franklin Health District

As authorized within RCW 70.05.070, the local health officer, acting under the direction of the local board of health or under direction of the administrative officer appointed under RCW 70.05.040 or 70.05.035, if any, shall:

- enforce the public health statutes of the state, rules of the state board of health and the secretary of health, and all local health rules, regulations and ordinances within his or her jurisdiction including imposition of penalties authorized under RCW 70.119A.030 and filing of actions authorized by RCW 43.70.190;
- take such action as is necessary to maintain health and sanitation supervision over the territory within his or her jurisdiction;
- control and prevent the spread of any dangerous, contagious or infectious diseases that may occur within his or her jurisdiction;
- inform the public as to the causes, nature, and prevention of disease and disability and the prevention, promotion, and improvement of health within his or her jurisdiction;
- prevent, control, or abate nuisances which are detrimental to the public health;
- attend all conferences called by the secretary of health or his or her authorized representative;
- collect such fees as are established by the state board of health or the local board of health for the issuance or renewal of licenses or permits or such other fees as may be authorized by law or by the rules of the state board of health
- inspect, as necessary, expansion or modification of existing public water systems, and the construction of new public water systems, to assure that the expansion, modification, or construction conforms to system design and plans;
- take such measures as he or she deem necessary in order to promote the public health, to participate in the establishment of health education or training activities, and to authorize the attendance of employees of the local health department or individual engaged in community health programs related to or part of the programs of the local health department.

10.4.2 Benton County Emergency Management

This Hazardous Materials Emergency Response Plan (HMERP) is required under federal and state law as part of the Community Right-to-Know Act (PL 99-499, 40 CFR 355, and WAC 118.40). This HMERP is written to cover the required jurisdictional boundaries for the Benton County Local Emergency Planning Committee (LEPC) described in the Washington Administrative Code (WAC).

This HMERP compliments and expands on sections in the Benton County Comprehensive Emergency Management Plan. It is intended to assist governmental agencies, businesses, and response entities in their response to the release of hazardous materials within the boundaries of Benton County resulting from naturally occurring events, industrial accidents, terrorism, or illegal activities.

The required scope of the plan identified under Chapter 118.40 WAC is restricted to fixed facilities with specific quantities of reportable materials. Releases of hazardous materials, however, may occur as the result of transportation activities on land, or in the marine environment, and at facilities exempt from reporting under SARA Title III. The HMERP endeavors to include contingencies for all types of events. The HMERP applies to all political subdivisions, and facilities covered by the Emergency Planning/Community Right-to-Know Act, unless exempted under state or federal law. The HMERP is intended to be coordinated with federal, state, and other local plans, should the event require inter-jurisdictional coordination.

10.4.3 Benton County Solid Waste Management Plan

In 2005, the City of Richland entered into an interlocal agreement with Benton County and all of the incorporated cities for the purpose of solid waste management planning and implementation. Interlocal Agreements are developed in accordance with Chapter 39.34 RCW, Interlocal Cooperation Act, for the purpose of permitting local governments to cooperate with one another in the performance of tasks. The Interlocal Agreement is signed by the Mayor, and specifies the services and/or facilities to be provided and any compensation between the local governments for such services and/or facilities. The Interlocal Agreements between Benton County and the City will remain in effect until 2012.

The Benton County Public Works Department, Solid Waste program has the responsibility for developing and implementing the solid waste management plan, formulating interlocal agreements, administering public education programs, and providing staff support for the County SWAC. The County updated the Solid Waste Management Plan in 2005.

10.4.4 Benton Clean Air Agency

The Benton Clean Air Authority is responsible for controlling the emission of air contaminants from sources in the Benton County with authority derived from federal and Washington State Clean Air Acts. Relevant laws are the Code of Federal Regulations (40 CFR) and RCW 70.94, respectively. The WAC 173-400 series of the administrative code is the principal source of regulatory implementation of Washington State air pollution laws. In addition, there are a limited number of local regulations in the Benton Clean Air Authority Regulation 1.

In terms of solid waste management, the compliance and enforcement responsibilities of BCAA are related to open burning of leaves and grass, odor, hazardous and toxic emissions, fugitive

dust from composting facilities, landfills, and wastewater treatment plants. The BCAA also has the responsibility of monitoring the emission of air contaminants from sources in Benton County and is responsible for enforcement of emissions standards. The Authority also regulates asbestos handling and open burning in the County.

10.4.5 City of Richland Municipal Code

The City of Richland code governing Solid Waste is Title 15 and can be found in Appendix 4.

SECTION 11

ADMINISTRATION OF PLAN

COMMUNITY EDUCATION

11.1 ADMINISTRATION

The Washington State Solid Waste Management Act, RCW 70.95, assigns local government the primary responsibility for managing solid waste. This chapter describes the administrative structure for solid waste management planning and permitting in the City of Richland and Benton County.

11.1.1 Existing Conditions

Administrative responsibility for solid waste management in the City of Richland and Benton County is divided among several agencies and jurisdictions. The administrative responsibilities of each organization are described below.

City of Richland Department of Public Works, Solid Waste Division

The City of Richland Department of Public Works, Solid Waste Division is responsible for the solid waste operations in the City. The City provides solid waste collection services, owns and operates the Horn Rapids Landfill site, provides public outreach and education, and manages all solid waste services for the City residents and businesses. RCW 35.21.152 allows cities to develop, own, and operate solid waste handling systems and to provide for solid waste collection services within their jurisdictions. Of the five incorporated cities and towns in Benton County, the City of Richland is the only city to operate a solid waste handling system.

Richland Solid Waste Advisory Committee

In conjunction with the update of this Solid Waste Management Plan, a Solid Waste Advisory Committee (SWAC) was established. The SWAC has nine members is made up of members comprising business, environmental, legislative and citizen interests. The members were selected based on recommendations by City council members and City staff. The SWAC has participated in the update of the Plan, including the review of data and descriptions on the existing solid waste system in the City, the analysis of needs and opportunities, and the evaluation and recommendations of policy and program options. Following adoption of the Plan, it is anticipated the UAC will replace the SWAC in the active role of implementing and monitoring the Plan. (Refer to City Code section 2.10, included in Appendix 4). When necessary, the SWAC will be reconstituted for regular required updates or consideration of major initiatives.

Benton County Public Works Department Solid Waste Program

In 2005, the City of Richland entered into an interlocal agreement with Benton County and all of the incorporated cities in Benton County for the purpose of solid waste management planning and implementation. The Interlocal Agreement was signed by the Mayor, and specified the services and/or facilities to be provided and any compensation between the local governments for such services and/or facilities. The Interlocal Agreements between Benton County and the City will remain in effect until 2012.

The Benton County Public Works Department, Solid Waste program has the responsibility for developing and implementing the solid waste management plan, formulating interlocal agreements, administering public education programs, and providing staff support for the County SWAC. The County last updated the Solid Waste Management Plan in 2005.

11.2 COMMUNITY EDUCATION

Public education and outreach goals adopted for this Plan include the following:

- Promote programs and provide incentives that encourage and support waste reduction, reuse, and recycling.
- Educate the public on the importance of waste reduction, reuse, and recycling.

11.2.1 Existing Programs

The City of Richland has developed a variety of public education and outreach programs supporting waste reduction, recycling and organics management activities. The programs are aimed at youth, the general public, local businesses, and home composters.

- **Website E-mails and Updates:** Monthly environmental updates include information on upcoming events and activities, recycling tips, successes stories, and articles that promote conservation.
- **Composting:** Two free composting and waste reduction workshop are held annually. A free composting bin and sixty-four page softbound book is given to each trained participant. Promotional materials include two brochures: Composting Instructional and How to Compost with Worms.
- **Local Media Outlet:** The City has local programming on channel 13. The City is given 20, 30-minute time slots monthly to showcase environmental programs. Waste reduction and recycling programs are typically shown 6 times per year.
- **Electronic Reader Board:** The City operates an outdoor electronic message board and waste reduction and recycling information are uploaded to the message board for passing motorists to see.
- **Tabletop Display with Pictures, Signs, and Plastic Holders for Handout:** The tabletop is displayed at events throughout the community including the Richland City Fair, children's events, educational fairs, and gifted education programs.
- **Mailers and Advertisements:** Waste reduction and recycling mailings and advertisements are produced for utility bill stuffers and direct mailers, depending on budget. A newspaper insert titled "Talking Trash" is produced once a year. Additional inserts are also used as promotional items.
- **Green Recognition Program:** The Green Recognition Program is an opportunity for businesses, schools, organizations, groups or individuals to showcase their efforts that are improving Richland's environment. Honorees are widely recognized and encouraged to share their knowledge with the community. Award applications are due in July.
    - **Social Networking:** The city uses Facebook, Twitter and writes a blog. The blog is www.gogreenrichland.blogspot.com
    - **Media Outreach:** Radio, TV, newsprint, Tri-Cities Journal of Business and a variety of other resources are used for environmental messaging.

- **Local TV Programming:** The City has a government access channel dedicated entirely to Richland issues. A 30-minute time slot is dedicated to environmental programming, replaying 4 times a week, 16-20 times each month. The program changes monthly.

- **Website:** Information to help residents live greener can be found on the City's Green Living webpage. Conservation information, recycling, composting, proper disposal of hazardous waste, litter laws, and more can be found at www.ci.richland.wa.us/greenliving.

- **Presentations:** Local and statewide speaking engagements are offered to service organization, businesses, non-profit organizations and students/schools.

- **Outreach material:** The Green Living Office offers a number of books, videos, curriculum material and hands-on activities that are available for citizens and teachers to check out. A comprehensive list is available at www.ci.richland.wa.us/greenliving link to Outreach.

11.3 RECOMMENDATIONS

The Solid Waste Advisory Committee reviewed the options discussed above and has recommended the following option:

- Phone book section inserts.
- Additional program advertisement.
- Website improvements.