Spokane County

2009 Comprehensive Solid Waste Management Plan

Adopted by Spokane Board of County Commissioners September 15, 2009

Approved by Washington State Department of Ecology April 15, 2011

Spokane Regional
Solid Waste System

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
4601 N Monroe Street • Spokane, Washington 99205-1295 • (509)329-3400

March 24, 2011

Mr. Russ Menke, Director
Spokane Regional Solid Waste Services
221 N. Wall St., Suite 410
Spokane, WA. 99201

Dear Mr. Menke:

RE: Final review of *Spokane County 2007 Comprehensive Solid Waste Management Plan,*

On March 17, 2011, Ecology received your formal submittal of the of *Spokane County 2007 Comprehensive Solid Waste Management Plan,* and a request for final review.

Review will commence immediately. If you have not received a response by April, 29, 2011, your plan will be considered approved by Ecology by default.

Final review will deal only with the question of whether or not responses to Ecology's review of the preliminary draft are adequate to warrant approval.

Sincerely,

James V. Wavada II
Solid Waste Planner
Waste 2 Resources Program – Eastern Regional Office

cc: Wayne Krafft

JVW:

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Exhibits

Acronyms

ACM	Asbestos Containing Materials
BCAA	Benton County Clean Air Authority
BFHD	Benton-Franklin Health District
DEQ	(Oregon) Department of Environmental Quality
ORS	Oregon Statutes
SW/MRWMP	Solid Waste/Moderate Risk Waste Management Plan
CDL	Construction, Demolition, and Landclearing Waste
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIWMB	California Integrated Waste Management Board
CPI	Consumer Price Index
CRT	Cathode Ray Tube
CY	Cubic Yard
DOE	(U.S.) Department of Energy
Ecology	Washington State Department of Ecology
EDC	(Spokane) Economic Development Council
EPA	(U.S.) Environmental Protection Agency
EPP	Environmentally Preferable Purchasing
FTE	Full-Time Equivalent
HDPE	High-Density Polyethylene
HHW	Household Hazardous Waste
HWMA	(Washington) Hazardous Waste Management Act
LDPE	Low-Density Polyethylene
MFS	Minimum Functional Standards for Solid Waste Handling
MRW	Moderate Risk Waste
MRWMP	Moderate Risk Waste Management Plan
MSW	Municipal Solid Waste
MTCA	Model Toxics Control Act
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industrial Classification System
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NOC	Notice of Construction
NSLF	Northside Landfill
OFM	Office of Financial Management (State of Washington)
ONP	Old Newsprint

PAYT	Pay As You Throw
PETE	Polyethylene Terephthalate
PS	Polystyrene
PVC	Polyvinyl Chloride
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RPWRF	Riverside Park Water Reclamation Facility
RRLF	Roosevelt Regional Landfill
SCAPCA	Spokane County Air Pollution Control Authority, now know as Spokane Regional Clean Air Agency
SEPA	(Washington) State Environmental Policy Act
SNAP	Spokane Neighborhood Action Program
SQG	Small Quantity Generators
SRHD	Spokane Regional Health District
SWAC	Solid Waste Advisory Committee
SWMP	Solid Waste Management Plan
System	Spokane Regional Solid Waste System
TPD	Tons Per Day
UGA	Urban Growth Area
USGBC	U.S. Green Building Council
WAC	Washington Administrative Code
WUTC	Washington Utilities and Transportation Commission

Definitions

Aerobic Decomposition: Degradation of Organic Wastes in the presence of oxygen by microorganisms and bacteria, releasing carbon dioxide gas and heat and producing solid material (compost) that can be used as a soil amendment. An example of Aerobic Decomposition is the waste degradation that occurs in a compost pile. See "Composting." Contrast "Anaerobic Digestion."

Anaerobic Digestion: Degradation of Organic Wastes in the absence of oxygen by microorganisms and bacteria, releasing methane that can be collected and used as a fuel and producing relatively inert solid materials that can be processed for use as a soil amendment. An example of Anaerobic Digestion is the waste degradation that occurs in a landfill. Contrast "Aerobic Decomposition."

Asbestos Waste: Any waste that contains more than 1 percent asbestos by weight (40 CRF Part 763, Appendix A, Subpart F).

Automated Collection: Solid Waste collection by mechanical means, where arms or other devices extend from the collection vehicle, grasp or otherwise manipulate containers, lift them overhead, tip them to empty solid waste into the vehicle, and set them back down on the ground. Fully Automated Collection requires no manual labor to grasp containers; semi-Automated Collection requires manual labor to position containers for mechanical grasping.

Beneficial Use: Utilization or reuse of a material that would otherwise become Solid Waste. Examples include landfill cover, aggregate substitute, fuel substitute, or the feedstock in a manufacturing process.

Biodegradable: Describes waste materials capable of being biologically decomposed by microorganisms and bacteria. For example, Organic Wastes such as paper, wood, food, and plants are biodegradable; metals, glass and most plastics are not.

Biodiesel: Is manufactured from vegetables oils, animal fats, and recycled restaurant greases.

Biofuels: Liquid fuels for transportation, such as ethanol and biodiesel.

Biopower: The use of biomass feedstocks instead of conventional fossil fuels (natural gas or coal) to generate electricity or industrial process heat and steam. Biomass is burned and the resultant heat is used to turn water into steam, which is then used to turn turbines that are connected to electric generators.

Bioproduct: A chemical, material, or other product derived from renewable biomass resources.

Bioreactor Landfill: Engineered landfill or landfill cell where liquid and gas are actively managed in order to accelerate or enhance Biostabilization of waste. Example management includes controlled addition and recirculation of water and capture of methane gas in a piping network.

Bottle Bill: Law that requires payment of a deposit on specified beverage containers, (such as aluminum cans or glass beverage bottles), by consumers at time of purchase, and subsequent refund of the deposit by the product retailer or other entity when consumers return the containers for redemption. Bottle Bills encourage container recycling and discourage littering.

Buyback Center: Facility that refunds deposits on containers subject to Bottle Bill redemption and/or purchases Recyclable Materials.

Buy Recycled: Purchasing Recycled Products. Buy Recycled programs often emphasize purchase of products that contain a specified or maximum level of Post Consumer content and/or Recyclable Materials content without affecting the intended use of the product.

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S. C Section 9601 et seq., referred to colloquially as "Superfund," providing for clean up and remediation of uncontrolled or abandoned Hazardous Waste sites and response to accidents, spills and other emergency releases of hazardous substances. CERCLA provides EPA with enforcement authority to ensure that responsible parties pay the cleanup costs ("PRP's" are Potentially Responsible Parties).

CESQG (pronounced SQUEEGY): Conditionally Exempt Small Quantity Generators, which are facilities that produce less than 100 kg (220 pounds) of Hazardous Waste (or less than 1 kg of acutely Hazardous Waste) per calendar month. CESQG's are exempt from many of the requirements applicable to Hazardous Waste generators, provided they comply with certain conditions specified in Subtitle C regulations.

Closure: Cessation of operations at a Solid Waste Management facility (especially a Sanitary Landfill) and implementing plans promulgated in accordance with provisions of RCRA in order to ensure future protection of human health and the environment. An example closure requirement is providing specified grading and final cover of a Sanitary Landfill. See "Cover - final cover" and "Post Closure Care."

Commingled Recyclables: Recyclable Materials designated for Recycling either by (1) generators' placement with other Recyclable Materials mixed in a single, common container for collection, or (2) collectors' sorting and placement in a single, common compartment on the collection vehicle. See "Single Stream Recyclables." Contrast "Source Separated Recyclables."

Composted Material: Solid waste that has been subjected to controlled aerobic degradation at a solid waste facility. Natural decay of organic solid waste under uncontrolled conditions does not result in composted material.

Composting: Biological decomposition or decay of Organic Wastes (sometimes including mixed Solid Waste) under controlled conditions. Composting takes place under aerobic conditions, typically in an open pile (called a windrow) or in a tank or container (called in-vessel composting). See "Aerobic Decomposition" and "Anaerobic Digestion."

Corrective Action: Action taken to investigate, describe, evaluate, correct, and clean up contamination from Solid Waste Management facilities as prescribed in accordance with law, including CERCLA and RCRA.

Dangerous Wastes: Any discarded, useless, unwanted, or abandoned substances, including but not limited to certain pesticides, or any residues or containers of such substances which are disposed of in such quantity or concentration as to pose a substantial present or potential hazard to human health, wildlife, or the environment because such wastes or constituents or combinations of such wastes:

(a) Have short-lived, toxic properties that may cause death, injury, or illness or have mutagenic, teratogenic, or carcinogenic properties; or

(b) Are corrosive, explosive, flammable, or may generate pressure through decomposition or other means.

Disposal Site: Location where any final treatment, utilization, processing, or deposit of solid waste occurs.

Diversion: Re-direction of Recyclable Materials from disposal through Resource Recovery.

Diversion Rate: The recovery of "non-MSW" waste streams; most notable asphalt, concrete, and other construction, demolition, and land clearing debris. The diversion rate is an overall measure which includes materials that fall under the "MSW Recycling Rate."

Drop-Off Center: Containers such as bins and Roll-Off Boxes placed at collection sites designated for deposit by generators of specified materials such as Recyclable Materials or Solid Waste.

EIS: Environmental Impact Statement, a document that identifies and analyzes in detail the environmental impacts of a proposed action, including in some instances, the construction of Solid Waste Management facilities, prepared in compliance with the National Environmental Policy Act or state and provincial laws.

Energy Recovery: A process operating under federal and state environmental laws and regulations for converting solid waste into usable energy and for reducing the volume of solid waste.

Environmentally Preferable Purchasing: Buying environmentally preferable products or services that have a less or reduced adverse effect on human health and the environment than competing products or services that serve the same purpose, considering life cycle impacts: raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal.

Ethanol: An alcohol that is made using a process similar to brewing beer where starch crops (such as corn) are converted into sugars, the sugars are fermented into ethanol, and then the ethanol is distilled into its final form. Ethanol made from cellulosic or hemi cellulosic biomass materials (such as agricultural and forestry residues) instead of traditional feedstocks (starch crops) is called bioethanol.

Extremely Hazardous: Any dangerous waste which:

(a) Will persist in a hazardous form for several years or more at a disposal site, and which in its persistent form:

(i) Presents a significant environmental hazard and may be concentrated by living organisms through a food chain or may affect the genetic make-up of man or wildlife; and

(ii) Is highly toxic to man or wildlife;

(b) If disposed of at a disposal site in such quantities as would present an extreme hazard to man or the environment.

Franchise: Right or privilege conferred by a local government on one or more private entities for the collection, transportation or other handling of Solid Waste or Recyclable Materials. A Franchise may extend throughout the corporate limits of the local government or may be limited to a specified area. Local power to grant Franchises typically stems from state or provincial law, municipal charter, or home rule authority. Franchisees may be required to secure certificates, licenses, or permits in order to perform franchised services.

Functional Standards: Criteria for solid waste handling expressed in terms of expected performance or solid waste handling functions.

Hazardous Waste: All dangerous and extremely hazardous wastes, not including radioactive wastes or a substance composed of both radioactive and hazardous components and does not include any hazardous waste generated as a result of a remedial action under state or federal law.

HDPE: High-Density Polyethylene, a plastic used to make a variety of products including milk jugs and landfill liners. HDPE containers are often identified by the number "2" inside the recycling arrows stamped on the container.

Incineration: A process of reducing the volume of solid waste operating under federal and state environmental laws and regulations by use of an enclosed device using controlled flame combustion.

Incinerator: A facility which has the primary purpose of burning or which is designed with the primary purpose of burning solid waste or solid waste derived fuel, but excludes facilities that have the primary purpose of burning hog fuel.

Inerts: Materials such as concrete, fully cured asphalt paving, glass, plastics, fiberglass, asphalt or fiberglass roofing shingles, brick, slag, ceramics, plaster, clay and clay and clay products that do not degrade or putrefy and are not Hazardous Waste.

Inert Waste Landfill: A landfill that receives only inert waste, as determined under RCW 70.95.065, and includes facilities that use inert wastes as a component of fill.

Landfill: A disposal facility or part of a facility at which solid waste is placed in or on land and which is not a land treatment facility.

Manual Collection: Solid Waste collection by hand rather than machine, where workers grasp, lift and empty cans or toss bags into hoppers or buckets on a collection vehicle. Contrast "Automated Collection."

Materials Recovery Facility (MRF): Building where Commingled Recyclables are separated and processed (including sorting, baling, and crushing) or where Source Separated Recyclables are processed for sale to various markets. See "Intermediate Processing Center." In a Dirty MRF, the incoming Recyclable Materials are co-collected and commingled with other non-Recyclable portions of Solid Waste. See "Mixed Waste Processing."

Mixed Waste Processing: Picking, sorting and otherwise separating Recyclable Materials from commingled Refuse and Garbage, as opposed to picking, sorting and otherwise separating one type of Commingled Recyclables (such as fiber) that was separated and collected separately from Solid Waste from another type of Commingled Recyclable (such as containers). See "MRF."

MRF (pronounced MURF): See "Materials Recovery Facility."

Municipal Solid Waste: See "Solid Waste."

MSW Recycling Rate: To determine a recycling rate that is consistent and comparable to past years, Ecology has measured a very specific part of the solid waste stream since 1986. It is roughly the part of the waste stream defined as municipal solid waste by the Environmental Protection Agency. It includes durable good, nondurable good, containers and packaging, food wastes, and yard trimmings. It does not include industrial waste, inert debris, asbestos, biosolids, petroleum-contaminated soils, or construction, demolition, and land clearing debris recycled or disposed of at municipal solid waste landfills and incinerators.

NIMBY (Not In My Backyard): Neighborhood, community, or local political opposition to the siting and development of Solid Waste Management facilities.

Oil/Water Separator Sludges: Semi-solid after decanting the liquid; sludges usually come from holding tanks associated with sewer systems that contain small amounts of petroleum hydrocarbons and heavy metals.

Participation Rate: Ratio of generators (e.g., individuals, households or businesses) of Recyclables Materials that actually participate in a Recycling Program by setting out Recyclables for collection during a prescribed period of time, to generators who are served by the Recycling Program and could participate in the Recycling Program.

PAYT (Pay As You Throw): See "Variable Rates."

PET (Polyethylene Terephthalate): Plastic commonly used to make containers such as soft drink bottles. PET containers are often identified by the number "1" inside the recycling arrows stamped on the container.

Petroleum-Contaminated Soils (PCS): Soils that have been contaminated by a petroleum product through leaks from petroleum product storage tanks or spills.

Post-Consumer: Products purchased and used by consumers, then discarded or recycled, such as a newspaper that has been purchased and read, Recycled, then used to make newsprint. Contrast "Pre Consumer."

Pre-Consumer: Feedstock used in manufacturing, fabrication or industrial production, then discarded or recycled, comprised of scrap, trimmings, cuttings and other post-production discards such as overruns, over issue publications, and obsolete inventories. Contrast "Post-Consumer."

Product Stewardship: Involves the actions taken to improve the design and manufacture of products to facilitate either their reuse, recycling or disposal, as well as actions to establish programs to collect, process and Reuse or Recycle products when they are discarded.

Pyrolysis: Thermal and chemical decomposition of Organic Waste in a furnace operated without sufficient oxygen to allow combustion. Pyrolitic products include combustible gases, oils, charcoal and mineral matter. Contrast "Incineration."

Rail Haul: Transportation of Solid Waste (generally long distances) by railroad.

RCRA (pronounced RECK RAA): Resource Conservation and Recovery Act, 42 S.S. C. Section 6901 et seq., as amended, the major U.S. Federal legislation first adopted in 1976 that governs the management of Solid Waste and Hazardous Waste in the United States.

Recyclable Materials: Solid wastes that are separated for recycling or reuse, such as papers, metals, and glass, which are identified as recyclable material pursuant to a local comprehensive solid waste plan. Prior to the adoption of the local comprehensive solid waste plan, adopted pursuant to RCW 70.95.110(2), local governments may identify recyclable materials by ordinance from July 23, 1989.

Recycled Content: Portion of a product's or package's weight that is composed of materials re-manufactured from a Recyclable Product or packaging material, including Pre-Consumer Materials or Post-Consumer Materials.

Recycling: Transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration.

Reuse: Use of a product more than once in its same form for the same or different purpose without substantial alteration. See "Recycled Product."

Septage: Semisolids consisting of settled sewage solids combined with varying amounts of water and dissolved materials generated in a septic tank system.

Sewage Sludge: A semisolid substance consisting of settled sewage solids combined with varying amounts of water and dissolved materials, generated from a wastewater treatment system, that does not meet the requirements of Chapter 70.95J RCW.

Small Quantity Generator (pronounced SQEEGY): Facilities that generate very small quantities of Hazardous Waste, between 100 kg (220 pounds) and 1,000 kg (2,200 pounds) per calendar month. The regulatory requirements for Small Quantity Generators are less stringent than persons who, or entities that, generate larger quantities of Hazardous Waste.

Soil Amendment: Any substance that is intended to improve the physical characteristics of the soil, except composted material, commercial fertilizers, agricultural liming agents, unmanipulated animal manures, unmanipulated vegetable manures, food wastes, food processing wastes, and materials exempted by rule of the department, such as biosolids as defined in chapter 70.95J RCW and wastewater as regulated in chapter 90.48 RCW.

Solid Waste or Wastes: 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.

Solid Waste Disposal: The discharge, deposit, injection, dumping, spilling, leaking, or placing of Solid Waste on or in the land or water. This definition may vary under diverse local, state, provincial, and national laws.

Solid Waste Management: Planned and organized handling of Solid Waste and Recyclable Materials in an environmentally and economically sound manner, encompassing the generation, storage, collection, transfer, transportation, processing, Resource Recovery, Reuse, and disposal of Solid Waste and Recyclable Materials and including all administrative, financial, educational, environmental, legal, planning, marketing and operational aspects thereof.

Source Reduction (or Waste Reduction): Actions taken to reduce Solid Waste toxicity or disposal, including (1) manufacturers' redesign and management of products and packaging to extend product life, and facilitating repair, (2) consumers' reduced purchase and consumption of products that become wastes; and (3) manufacturers' and consumers' reuse of products.

Source Separation: The separation of different kinds of solid waste at the place where the waste originates.

Subtitle C: Section of RCRA that authorizes U.S. EPA to establish regulations regarding Hazardous Waste management.

Subtitle D: Section of RCRA that authorizes U.S. EPA to establish regulations for Sanitary Landfills.

Superfund: Common name for CERCLA, including generally the entire CERCLA program as well as specifically the trust fund established to fund cleanup of contaminated sites. See "CERCLA."

TCLP: Toxicity Characteristic Leaching Procedure, a lab test designed to determine whether a Solid Waste is a Hazardous Waste because it releases toxic chemicals in Leachate.

Tipping Fee: Fee charged for accepting Recyclable Materials or Solid Waste at a Solid Waste Management facility (such as a transfer station, Solid Waste Combustor, MRF, or Landfill.).

Transfer Station: Facility that receives and consolidates Solid Waste or Recyclable Materials from municipal or commercial collection trucks and self-haulers' vehicles and

loads the Solid Waste onto tractor trailers, railcars, or barges for long-haul transport to a distant disposal facility.

Universal Wastes: Several widely generated Hazardous Wastes identified by US EPA (such as batteries, pesticides, thermostats and mercury containing lamps and equipment) that are subject to streamlined requirements for collection, storage and processing if they are Recycled in accordance with law rather than disposed.

Used oil: Includes:

(a) Lubricating fluids that have been removed from an engine crankcase, transmission, gearbox, hydraulic device, or differential of an automobile, bus, truck, vessel, plane, heavy equipment, or machinery powered by an internal combustion engine;

(b) Any oil that has been refined from crude oil, used, and as a result of use, has been contaminated with physical or chemical impurities; and

(c) Any oil that has been refined from crude oil and, as a consequence of extended storage, spillage, or contamination, is no longer useful to the original purchaser. "Used oil" does not include used oil to which hazardous wastes have been added.

Variable Rates (or PAYT / Pay as You Throw): Charges for Solid Waste collection services that incrementally increase with disposed Refuse and Garbage volume (such as 32-, 64-, or 96-gallon carts) or weight, with lesser or no charges for Recyclables collection services, to encourage Recycling and discourage disposal. Variable rates do not necessarily reflect actual operational costs but rather constitute behavioral incentives (or disincentives).

Waste-Derived Soil Amendment: Any soil amendment as defined in this chapter that is derived from solid waste as defined in RCW 70.95.030, but does not include biosolids or biosolids products regulated under chapter 70.95J RCW or wastewaters regulated under chapter 90.48 RCW.

Waste Exchange: Organization or service that facilitates or arranges for Recyclable Materials or discarded materials from various generators or industries to be Recycled or Reused by others.

Waste Generation: Total amount of disposed Solid Waste and diverted Recyclables.

Waste Reduction: All in-plant practices that reduce, avoid, or eliminate the generation of wastes or the toxicity of wastes, prior to generation, without creating substantial new risks to human health or the environment. As used in RCW 70.95C.200 through 70.95C.240, "waste reduction" refers to hazardous waste only.

Waste-to-Energy: Controlled combustion of Solid Waste in Solid Waste Combustors having state-of-the-art pollution controls, and Energy Recovery therefrom. Types of Waste-to-Energy facilities include mass burn units that incinerate mixed Solid Waste with little or no prior separation, and RDF (Refuse Derived Fuel) units that separate combustible Solid Waste from noncombustible Solid Waste prior to combustion. See "Incinerators."

Yard Debris: Plant material commonly created in the course of maintaining yards and gardens, and through horticulture, gardening, landscaping, or similar activities. Yard debris includes, but is not limited to, grass clippings, leaves, branches, brush, weeds, flowers, roots, windfall fruit, vegetable garden debris, holiday trees, and tree prunings that are 4 inches or less in diameter.

Zero Waste: Efforts to reduce Solid Waste generation waste to nothing, or as close to nothing as possible, by minimizing excess consumption and maximizing the recovery of Solid Wastes through Recycling and Composting.

SECTION 1

Introduction

Under Washington State law (Chapter 70.95 RCW), each county, in cooperation with the cities located within, is required to prepare a coordinated, comprehensive solid waste management plan. Municipalities located within a county must fulfill their own solid waste planning responsibilities and submit them for inclusion in the county plan. Cities may do this by preparing their own plan, participating jointly with the County in the planning process, or by authorizing the County or another city to prepare a plan for them as part of the comprehensive county plan. Municipalities must adopt a complete plan through a formal adoption process. In Spokane County, these cities are Cheney, Airway Heights, Deer Park, Fairfield, Latah, Liberty Lake, Medical Lake, Millwood, Rockford, Spangle, Spokane, Spokane Valley, and Waverly. If a city elects to prepare its own plan, it must obtain its own funding and arrange for the disposal of the waste generated within the jurisdiction.

Solid waste management plans in Washington State must be kept in a current condition. Plans are required to be reviewed every five years and updated or revised as necessary. Plans must consider a 20-year planning horizon. This *2009 Spokane County Comprehensive Solid Waste Management Plan* (2009 Plan) documents existing waste management policies and handling methods. It establishes a waste management framework that will guide Spokane County in the years ahead. The 2009 Plan is the result of an extensive public process conducted during 2005, 2006, and 2007. The 2009 Plan updates the County's previous plan, the *1998 Spokane County Comprehensive Solid Waste Management Plan*.

1.1 Overview of Institutional Structure and Planning Process

In Spokane County, the Spokane Regional Solid Waste System (System) is designated through regional interlocal agreements to prepare the county solid waste management plan. The System, a department of the City of Spokane, administers county-wide solid waste planning activities and programs and manages operations at System facilities.

The timing of the 2009 Plan is unique because recommendations must satisfy regional bond obligations as well as explore foundations for new solid waste management opportunities after those bonds are retired. Funding to close non-compliant landfills and construct new and compliant System solid waste, recycling, and moderate risk waste facilities was acquired through a grant from the Washington State Department of Ecology (Ecology) and municipal bonds. System facilities and programs are designed to serve the needs of residents and businesses countywide, but the City of Spokane is responsible for repayment of the bonds, scheduled for retirement in 2011. The 2009 Plan supports both near-term needs related to current regional responsibilities, and longer-term recommendations to develop foundations for new opportunities in solid waste management.

The 2009 Plan update was prepared under the direction of the System. Guidance and recommendations were provided by representatives from regional cities and the County, the Spokane Regional Solid Waste Liaison Board (Liaison Board), the Solid Waste Advisory Committee (SWAC), the Stakeholder Input Committee (SIC), and the general public. Ecology provided additional guidance during the planning process.

1.1.05 Planning Update or Revision Criteria

When service levels or cost of service to Plan signatories change materially, a Plan update would be required, whether as part of the five year Plan review process or outside of that process timeline.

An exception to these criteria would be changes to the list of Designated Recyclable Materials (See Appendix G). Items may be added or deleted from this list within the process described in Section 5 without engaging in a formal Plan update or revision process. Adding or deleting individual items from/to the list is not considered a change in level of recycling service.

1.1.1 Spokane County, Regional Cities, and the Spokane Regional Solid Waste System

The Spokane Regional Solid Waste System (System) was formed in 1988 by an interlocal agreement between Spokane County and the City of Spokane. The purpose of the System is to operate System's disposal, recycling, and moderate risk waste facilities, provide for effective implementation of regional solid waste policies, and to develop solutions to regional and solid waste management needs. The System is owned and managed by the City of Spokane. The System is directed to perform regional planning and operations functions through that 1988 agreement as well as additional interlocal agreements and amendments between Spokane County and the City of Spokane and each of the other regional cities and Fairchild Air Force Base (see Appendix A). In 2001 and 2003, respectively, two additional cities (City of Liberty Lake and City of Spokane Valley) incorporated. These new cities also signed solid waste management interlocal agreements with the City of Spokane and Spokane County. These interlocal agreements assign the System to conduct solid waste disposal, and planning activities for these jurisdictions.

The System is responsible for operating System facilities and making all operational and administrative decisions, except for the following major decisions which must be made with agreement between the City of Spokane and Spokane County:

- An expansion of the System's service territory to include use of the System by persons or interests outside of Spokane County.
- Any discretionary modification of the System costing more than $1,000,000.
- Major changes in the Waste-to-Energy (WTE) Facility construction contract of more than $1,000,000 or increases in annual operating costs of more than 5 percent.
- Changes in the tipping fees other than those necessary to fulfill the bonding of the WTE Facility or to cover landfill closure costs.

- Siting and selection of any publicly owned transfer stations.
- Adoption and implementation of a County-wide solid waste reduction, recycling, litter control, or dangerous waste disposal program.
- Siting and selection of any regional landfill used for solid waste.
- The adoption, development, and implementation of a County-wide dangerous waste disposal program.

Policies and issues of interest to all governments are brought forward to the Spokane Regional Solid Waste Liaison Board for discussion.

1.1.2 Spokane Regional Solid Waste Liaison Board

The Spokane Regional Solid Waste Liaison Board (Liaison Board) is the policy board regarding System operations and County-wide solid waste issues. The Liaison Board consists of two representatives from the City of Spokane, two from Spokane County, one from the City of Spokane Valley, and one representative for the small remaining cities. This board does not have legislative decision-making powers but makes recommendations to the Spokane City Council and the Board of County Commissioners when legislative authority is required.

The terms of Liaison Board members are not set for a specific period of time. The members are elected officials, shown in Exhibit 1-1, that serve at the discretion of their respective legislative bodies, except for the small city representative who is selected by consensus by the small city mayors. Presentations were made at each Liaison Board meeting during the preparation of the Plan update to keep the board informed and to obtain input into the planning process. The Liaison Board was presented with regular updates of the 2009 Plan process by System staff as well as formal presentations by the consultants.

EXHIBIT 1-1
Liaison Board Members, 2005

Name	Representing	Appointed
Bob Apple	City of Spokane	January 2007
Richard Rush	City of Spokane	January 2008
Bonnie Mager	Spokane County	January 2007
Mark Richard	Spokane County	January 2005
Gary Schimmels	City of Spokane Valley	July 2003
Doug Nixon	Remaining Towns/Cities	January 2008

1.1.3 Solid Waste Advisory Committee

The Solid Waste Management – Reduction and Recycling Act (Ch.70.95.165 RCW) specifies the formation, roles, and membership of County SWACs. SWAC members are appointed by County Commissioners, who limit membership to two 4-year terms. The SWAC provides a forum for the concerns and interests of constituents of the planning area to be heard and included in the planning process. The SWAC reviews and actively participates in preparation

of the Plan in an advisory capacity, and facilitates the Plan's adoption by jurisdictions and acceptance by the public. The SWAC may also review and comment upon proposed rules, policies, or ordinances prior to their adoption. Spokane County has had a standing SWAC since preparation of the *1984 Spokane County Solid Waste Management Plan* (Parametrix, 1984). In October 2006, the County passed a revised resolution establishing a Solid Waste Advisory committee to increase membership from 9 to 15 members, 3 from each of five categories: citizens, business, waste management industry, local elected public officials, and public interest groups. The membership on the Spokane County SWAC effective October 2006 is shown in Exhibit 1-2.

EXHIBIT 1-2
Solid Waste Advisory Committee Members, 2008

Name	Date Appointed	Re-Appointed	Expires
Dave Alvarado	07-12-05	--	07-12-09
Frank Etter	07-12-05	--	07-12-09
Thomas Flanagan	06-05-07	--	06-05-07
Ken Gimpel	02-08-05	--	02-08-09
Clyde Haase	11-28-06	--	11-28-10
Joe Jacobs	07-12-05	--	07-12-09
Bonnie Mager	03-06-07		12-31-10
Mike Noder	07-12-05	--	07-12-09
Sheila Pachernegg	06-10-03	06-19-07	06-19-11
Richard Rush	01-14-08	--	01-14-08
KC Traver, Chair	04-08-03	03-27-07	03-27-11
Steve Taylor	01-16-07	--	01-16-07

1.1.4 Stakeholder Input Committee

A Stakeholder Input Committee (SIC) was formed to broaden participation, engage various viewpoints, obtain comments, and provide an additional opportunity for interested parties to be involved in the decision-making process related to the Plan update. SIC workshops were designed for the region's political, professional, and technical solid waste stakeholders. Core participants of the SIC consisted of regional government representatives, SWAC members, and System staff. Broader technical input was solicited from other organizations such as waste management and recycling industries, public agencies, the scientific community, environmental groups, and other pertinent community and business interests as topics of their expertise were discussed. Workshops were held on a monthly basis prior to SWAC meetings, furnishing an opportunity for SIC members to provide input to be shared and considered in SWAC's evaluation of draft Plan chapters.

1.1.5 Public Involvement

Involving the public in solid waste management planning is an important element of developing and updating solid waste management plans.

Two general public meetings were held. The first one was held to obtain public comments on the list of solid waste management alternatives that were developed during the planning process. The second public meeting was held for public review of the preliminary draft Plan update.

1.1.6 County and Regional City Input

Presentations were made to the Board of County Commissioners and each City and Town Council updating them on the planning process and seeking their input on alternatives and recommendations.

1.2 Plan Goals and Objectives

A statement of priorities was prepared by the SWAC to identify their key interests during the planning process.

- Involve public and stakeholders.
- Consider variable tipping fees on specific wastes:
  - Construction and demolition (for example, asphalt shingles), wood waste.
  - Other WTE applicable wastes (for example, tires).
- Reevaluate curbside recycling collection:
  - Within existing service areas.
  - Based on material types.
- Evaluate existing recycling goals and methods.
- Evaluate markets for recyclables.
- Evaluate material recovery facilities (MRFs) and material separation methods.
- Evaluate new technologies.
- Review and evaluate system administration and management.
- Review and evaluate interlocal agreements.
- Review and evaluate flow control agreements.

In addition, the SWAC and SIC identified specific goals and objectives for the Plan for managing solid waste in Spokane County. This overview helped to focus the Plan on the specific needs of Spokane County, and led the development and the final conclusions reached by this Plan.

- **Goal: Satisfy State priorities for waste management.**

  Objectives:

  - Reduce disposal through waste reduction and reuse.
  - Measure progress in achieving goals and objectives.

- **Goal: Ensure future financial integrity of solid waste management in the county.**

  Objectives:

  – Ensure financial clarity and establish measures for accountability.
  – Maintain sufficient funding mechanisms.

- **Goal: Provide for efficient collection and transfer of MSW and recyclables.**

  Objectives:

  – Ensure access to collection services for residences, businesses, and industry.
  – Locate recycling facilities and System transfer stations to optimize service levels and transportation efficiencies.
  – Recycle prior to WTE processing or landfill disposal.
  – Encourage competition to reduce costs of collection and processing.

- **Goal: Ensure adequate disposal capacity.**

  Objectives:

  – Promote research opportunities for new solid waste management technologies.
  – Provide adequate disposal capacity for municipal solid waste and, as needed, WTE ash through 2027.

- **Goal: Establish guidelines and strategies for management of specific waste streams.**

- **Goal: Continue public outreach and education efforts.**

- **Goal: Maintain proper monitoring and regulatory procedures.**

Chapters 4 through 13 incorporate these goals and objectives for solid waste management. Key issues are considered for each element of the solid waste system. Alternatives for addressing these issues are then described and evaluated. Finally, the evaluation of alternatives leads to a specific set of recommendations to support Spokane County in meeting its solid waste management goals.

1.3 Summary of Recommendations

At the outset of the planning process, the SWAC and SIC adopted on a list of screening criteria for use in the evaluation of the plan alternatives. Although the criteria ultimately were not utilized in the alternatives selection process, they provided a tool for evaluating the different attributes of each alternative. The list of screening criteria is included as Exhibit 1-3.

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. The process included voting, whereby the participants were asked to vote on each alternative by placing a green (yes), red (no) or yellow (undecided) dot next to each alternative. The votes were then tallied and utilized in the final recommendations. The results of this exercise are included in Exhibit 1-4.

Evaluations and comparisons of the alternatives discussed in each section leads this Plan to recommend implementing a progressive but monitored approach to solid waste reduction, reuse, recycling, and disposal. This approach will provide for continued progress toward meeting Washington State's diversion goal while maintaining a balance of costs and diversion benefits to Spokane County residents and businesses. Not all alternatives advanced as recommendations. Some alternatives were modified to allow for the assessment or monitoring of an issue as a recommendation (the numbering of the individual recommendations reflects their order as alternatives described in the full text of each section). The recommendations are summarized in Exhibit 1-5.

EXHIBIT 1-3
Alternatives Screening Criteria

	Preliminary Screening Criteria	Key Questions
I	Environmental Impacts	• Determine environmental impacts, both positive and negative associated with the alternative. On a general level, are the negative environmental impacts associated with the alternative localized, of short duration, and concentrated on one or two elements? Do positive and/or long-range environmental impacts out weigh any or all of the negative environmental impacts? Positive environmental impacts should significantly outweigh negative environmental impacts to receive a rating of 3.
II	Impact on System/System Costs	• Will implementation of the alternative result in an increase in the long-term net present value of system costs (capital, present and future maintenance costs, revenues, residual value)? The alternative should decrease or not unreasonably increase long-term levelized tipping fees or user rates without providing a greater residual value to receive a rating of 3.
III	Economic Development	• Does the alternative have the potential for generating growth opportunities for local businesses, industries, and entrepreneurs? The alternative should encourage local and regional growth opportunities to receive a rating of 3.
IV	Risk	• If there are risks (for example, financial, operational, legal, regulatory compliance, market availability, market competitiveness) as a result of implementing a proposed site, facility, or program, can they be controlled and managed with the resources and staff expertise of the System, County, local jurisdictions, or other public and private entities? Risk exposure should be minimized to receive a rating of 3.
V	Level of Service	• Does the alternative have the ability to improve service for residents and businesses? The alternative should provide a higher level of service to receive a rating of 3.
VI	Consistency with State Waste Management Priorities	• Will implementation of the alternative promote consistency between solid waste management goals and objectives in Spokane County, Washington State priorities, regional obligations, and local conditions? The alternative should not cause inconsistency with county goals, State priorities, regional obligations, or local conditions to receive a rating of 3.

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
Section 4. Source Reduction								
Product Stewardship - *Product stewardship is a product-centered approach that emphasizes a shared responsibility by all affected parties for reducing the environmental impacts of products during their manufacture, use, reuse, recycling, and eventual disposal.*								
1	Develop partnerships with private sector organizations to provide reuse and recycling options for select products.	6	5	13	0	1	19	6
2	Use purchasing power to encourage product stewardship.	2	4	4	0	0	6	4
3	Support product stewardship efforts.	5	1	9	0	0	14	1
Procurement - *Local, state, and federal government, and businesses can and do use their tremendous purchasing power to influence the products that manufacturers bring to the marketplace. The Environmental Protection Agency (EPA) has developed a list of designated products and associated recycled-content recommendations for federal agencies to use when making purchases. These are known as Comprehensive Procurement Guidelines.*							0	0
4	Use purchasing power to influence markets for recovered materials.	6	1	9	0	0	15	1
5	Incorporate environmental performance into purchasing decisions.	1	6	2	0	0	3	6
Internal Government Waste Reduction Practices - *Implement waste reduction practices in local government policies and procedures whenever practicable and cost-effective.*							0	0
6	Implement in-house waste reduction programs and practices.	5	2	6	0	0	11	2

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
Waste Reduction Education - *Messages stress increasing product life, choosing reusable and durable products, selecting products with less packaging, decreasing product consumption, more efficient use of resources, finding reuse opportunities, using alternative products that create less waste, and reducing product toxicity.*							0	0
7	Continue waste reduction education programs.	6	1	12	0	0	18	1
8	Provide financial assistance for private waste reduction efforts.	1	6	0	1	0	1	6
9	Provide recognition for waste reduction successes.	2	6	8	0	0	10	6
Waste/Materials Exchanges - *A waste exchange acts as a liaison between waste generators and potential users of that waste.*							0	0
10	Continue administration of waste/materials exchange.	0	8	7	0	0	7	8
11	Promote private waste exchanges.	8	0	8	0	0	16	0
Section 5. Recycling								
2005 Spokane County recycling rate is 42%.								
Residential Recycling								
1	Continue to strive to satisfy the State's priorities for recycling	7	0	7	0	0	14	0
2	Periodically evaluate existing recycling programs to determine the feasibility of adding new materials or removing materials that are no longer economically feasible to collect.	8	0	14	0	0	22	0
3	Monitor public education efforts to maintain the current success as well as increase the amounts of materials diverted for recycling and composting.	1	5	9	0	0	10	5
4	Monitor and respond to Washington's electronic waste recycling law ESSB 6428.	1	5	13	0	1	14	6

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
5	Assess single stream recyclables collection. *Commingled recyclables are placed into one container. Recyclables are then sorted after delivery to a Material Recovery Facility ("clean" MRF).*	6	1	1	2	6	7	7
6	Expand voluntary curbside or drop-off collection of recyclables to rural areas.	6	0	10	1	0	16	0
7	Evaluate front-end processing of waste to improve recovery of material prior to incineration. *A front-end processing facility, using a combination of manual and mechanical sorting, would allow the removal of non-separated recyclables and bulky, non-combustible materials from the waste stream, also called a "dirty MRF".*	3	4	4	1	0	7	4
8	Evaluate the current residential recycling system for potential improvements that will increase diversion at the lowest cost with the highest effectiveness.	5	1	13	0	0	18	1
9	Explore technology to distill all plastics together for recycling (see Waste News.	2	5				2	5
<u>Commercial Recycling</u>							0	0
10	Continue to support and encourage private efforts to divert recyclable materials from commercial sources.	7	0	10	0	0	17	0
11	Continue to encourage non-residential recycling through incentives, technical assistance, and recognition programs.	2	5	11	0	0	13	5
12	Encourage food waste management by the commercial sector. The suggested order for management of food waste is: (1) food donation; (2) convert to animal feed and/or rendering; and (3) compost. Local establishments should be encouraged, through educational efforts, to follow this hierarchy when possible.	6	2	10	2	0	16	2

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
13	Establish a Recycling Market Development Zone in Spokane County. *"Recycling Market Development Zone" are a means to attract businesses that manufacture products using waste materials, and also create jobs and tax revenue for the region, by offering profitable incentives to those manufacturers. Examples of incentives that this program can provide are:* • *Low-interest loans, technical assistance, and free product marketing to businesses that: 1) process secondary materials or use materials from the waste stream to manufacture their products, and 2) are located in one of the specially designated geographical zones.* • *Streamlined local permit processes and siting assistance;* • *Less stringent building codes and zoning laws; and* • *Reduced taxes and licensing* • *Technical Assistance* • *Marketing Support*	2	5	1	1	0	3	5
14	Establish a Resource Recovery Zone in Spokane County. *A Resource Recovery (RR) Park combines unique waste reduction and recycling concepts with traditional industrial park development. It is essentially the co-location of reuse, recycling, compost processing, manufacturing, and retail businesses in a central facility.*	2	5	0	1	0	2	5
Composting							0	0
15	Expand yard waste collection efforts.	0	6	8	2	1	8	7
16	Build a local facility for municipal compost.	3	4	0	0	0	3	4
Public Recycling							0	0
17	Provide recycling at public venues and events.	6	1	13	0	0	19	1

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
18	Provide centralized neighborhood recycling bins.	3	4	1	0	1	4	5
Section 6. Collection								
1	Use of incentive rates in the WUTC ceritificated areas to encourage recycling.	5	2	5	0	0	10	2
2	Change service levels to capture more households.	2	1	10	1	1	12	2
3	Contracting for recycling.	6	1	6	0	1	12	2
4	Alternative collection strategies.	4	2	10	1	0	14	2
5	Mandatory collection.	0	7	7	1	3	7	10
6	Mandate that haulers offer commercial recycling.	0	5	0	1	0	0	5
7	Centralized recycling locations for rural households.	3	2	9	0	1	12	3
Section 7. Transfer System								
1	Develop criteria for determining if the existing transfer stations need to be upgraded.	7	1	13	0	0	20	1
2	Assess needs for additional transfer stations.	8	0	9	0	3	17	3
3	Establish locations for staging and storage of natural disaster debris.	8	0	7	2	0	15	0
4	Offer re-use area.	6	1	8	1	0	14	2
5	Allow additional transfer stations owned and operated by individual jurisdictions.	6	1				6	1
6	Allow additional transfer stations owned and operated by private companies.	7	0				7	0
Section 8. Energy Recovery/Incineration								
1	Maintain the WTE Facility to continue operations after bond retirement.	2	7	14	2	0	16	7
2	Add a third boiler to the WTE Facility.	1	6	15	1	4	16	10

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
3	Evaluate front-end processing of waste to improve recovery of material prior to incineration.	5	3	10	5	0	15	3
4	Develop Malloy Prairie Landfill site for ash disposal.	2	4	6	2	0	8	4
5	Close WTE Facility.	3	6	2	1	1	5	7
6	Combine the ash and bypass disposal contract with the WTE operating contract instead of renewing the existing contract.	5	2	0	0	0	5	2
7	Maintain the WTE Facility to continue operations after bond retirement to serve the City of Spokane only.	2	6	2	0	4	4	10
8	Sell the WTE Facility to a private company or public energy utility.	7	0	3		8	10	8
9	Sell Malloy Prairie Landfill site.	0		1	0	7	1	7
10	Prohibit importation of waste for combustion at the WTE Facility.	0	6	0	0	0	0	6
11	Recycle the fly ash from the WTE Facility.	6	0	0	1	0	6	0
12	Confirm that the WTE plant can meet requirements if WA adopts the CA standard of CO2 emissions for energy sources.	5	0	0	0	0	5	0
13	Consider earthen digester (as an example – or other similar facility) as alternative to trap methane gas and use for energy.	4	1	0	1	0	4	1
Section 9. Landfills								
1	Investigate alternative transportation modes for waste transferred to an out-of-county landfill.	6	0	5	1	0	11	0
2	Expand the Northside Landfill MSW cell for contingency/by-pass use.	2	6	5	0	4	7	10
3	Examine post-closure care funding for County- and City of Spokane-owned landfills.	6	0	9	3	0	15	0

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
4	Monitor developments in alternative processing technologies for municipal solid waste.	7	0	11	2	0	18	0
5	Assess development of an in-county MSW landfill for use after 2011, either public or privately owned and operated. *Some of these methods include: Anaerobic digestion, Biorefining, Pyrolysis, Gasification, Plasma arc, Bioreactor.*	6	1	5	0	8	11	9
6	Assess long haul of municipal solid waste out of the County.	6	0	2	0	4	8	4
7	Assess using both the WTE Facility and out-of-County Landfill for Disposal of MSW.	5	2	7	1	1	12	3
8	Build a landfill in a remote area (in or out of the county).	3	1	0	0	0	3	1
9	Separate biomass from solid waste for methane gas extraction.	6	0	0	0	0	6	0
10	Identify needs and costs to remediate closed landfills in the County (including private landfills).	4	0	0	0	0	4	0
11	Establish funding mechanisms to cover post-closure costs of all landfills in the County.	6	0	0	0	0	6	0
Section 10. Miscellaneous Waste								
Special Waste								
1	In Spokane County, any generator wishing to manage hazardous wastes as special wastes should consult with the Washington State Department of Ecology (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 in Spokane County unless they are household hazardous waste or from small waste.	0	0	4	2	1	4	1
Agricultural Waste							0	0

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
2	Continue to develop emergency response plans regarding agricultural waste specific to available resources and operations and in coordination with local, state, and federal agencies.	3	4	4	1	0	7	4
3	Existing federal, state, and other agency policies and procedures for the management of animal carcasses that have been diagnosed or suspected of being carriers of an infectious disease have been developed. Large-scale incident response mechanisms would be coordinated with federal or state authorities. Policies and procedures would depend on the type of disease, its presentation, and consensus among agencies and facility operators to determine adequate final disposition at any given incident.	0	0	6	0	0	6	0
Asbestos Waste								
4	Educate homeowners about proper identification of asbestos-containing materials and proper handling and disposal methods.	6	1	9	0	0	15	1
5	Maintain information on the Spokane Regional Clean Air website www.spokanecleanair.org.			6	1	0	6	0
Ash from the Waste-to Energy Facility								
6	Continue to monitor research and investigate alternatives for ash utilization. *Any changes in the handling of ash residue must be protective of public, worker, and environmental health and safety, and should be accompanied by an early and substantive public process. Any ash recycling program should be preceded by extensive research into recycled ash, with documentation that no harmful effects exist from the recycled ash products before a project is undertaken.*	6	2	10			16	2
6A	Assess use of Geiger Spur for ash rail transport.			6		0	6	0

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
7	Continue to coordinate with SRDH in the distribution of educational materials for correct management of medical waste generated by residents.	7	0	8	1	0	15	0
8	Continue to plan and coordinate with the appropriate federal, state, and local agencies regarding emergency response plans involving human or animal diseases.	8	0	8	0	0	16	0
Biomedical Waste								
	In the future, land application of Class B biosolids could become limited because of regulatory changes. If land application were no longer a viable option for the majority of biosolids disposal, a substitute method would need to be implemented, such as application to forest and pasture lands, or composting.			0	0	0	0	0
9	Continue to monitor potential changes and examine other alternatives for future disposal, if necessary.	2	5	7	0	0	9	5
10	Funding sources should be pursued for existing biosolids composting facilities that need to replace aged and worn-out equipment, to improve system processing, and to provide reliable operations.	1	5	8	0	0	9	5
N/A	New facilities should be promoted as funding sources are available	1	6	0	0	0	1	6
Contaminated Soils								
11	Continue to allow the private sector to manage and dispose of contaminated soils in permitted facilities. *These operations are likely to continue to use the Graham Road RDF or other appropriately permitted facilities.*	6	0	4	0	0	10	0
12	Where appropriate, support and encourage the private sector to treat contaminated soils to minimize the amounts landfilled.	7	0	5	0	0	12	0

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
Electronic Waste								
	Refer to Recycling for information on electronics recycling.					1	0	1
13	Keep e-waste private for recycling.	5	0	11	0	0	16	0
Foundry Operations *Industrial wastes such as those from foundry operations, if not otherwise designated as dangerous waste under 173-303 WAC, are regulated by the SRHD.*								
14	Continue to allow the private sector to manage and dispose of foundry wastes.	6	0	4	0	0	10	0
15	Management practices should be encouraged to reduce and recycle foundry wastes, when feasible.	6	0	10	0	0	16	0
	Industrial wastes such as those from foundry operations, if not otherwise designated as dangerous waste under 173-303 WAC, are regulated by the SRHD. Several large foundry operations are located within Spokane County. These processes produce significant quantities of wastes, primarily sand, and may contain such elements as nickel, chromium, zinc or copper. Foundry sand is delivered to the lined cell at the Graham Road RDF. A small amount of sand is exported to Idaho. These operations are likely to continue to use the Graham Road RDF or other appropriately permitted facilities.			0	0	0	0	0
Paper Sludge								
16	The County and cities should continue to allow the private sector to appropriately manage and dispose of its paper sludge wastes.	7	0	7	0	0	14	0
17	Management practices to reduce and recycle paper sludge wastes should be supported and encouraged, when feasible.	7	0	7	0	0	14	0

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
Tires								
18	Encourage County and municipal purchasing programs for recycled tire products.	8	0	11	0	1	19	1
19	Continue to promote and implement County and municipal fleet programs to reduce tire waste.	6	0	10	0	0	16	0
20	Include information on reducing tire waste and recycled tire products in public education programs.	3	5	7	0	1	10	6
21	Allow tires as feedstock for Waste to Energy Facility during seasonal low-volume periods.	6	2	10	0	1	16	3
Universal Wastes								
22	Continue to allow small quantity generators to bring UW to existing SQG waste collection events for proper disposal.	6	0	5	0	0	11	0
23	Continue to promote the private sector to appropriately manage universal waste for recycling.	7	0	6	0	0	13	0
Section 11. Construction, Demolition, Landclearing, and Inert								
1	Continue to provide outreach and education on options for the waste reduction or recovery of CDL/I.	8	0	7	1	0	15	0
2	Establish CDL/I waste diversion specifications for County or municipal projects.	2	5	4	1	1	6	6
3	Use recycled content material specifications for County or municipal construction and engineering projects.	3	5	6	2	1	9	6
4	Develop a CDL and Inert waste diversion ordinance.	0	6	2	0	2	2	8
5	Create markets for CDL/I by promoting reuse and recovery.	1	5	7	1	0	8	5

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
6	Evaluate financial incentives, System partnerships, and policies to encourage recovery/recycling of CDL/I materials.	1	4	4	1	0	5	4
7	Continue with development of a Disaster Management Plan for emergency disposal activities that coordinates with federal, state, and local agencies' emergency plans.	6	0	6	2	0	12	0
8	Assess options regarding development of in-County CDL recycling or disposal facilities.	7	0	7	0	0	14	0
Section 12. Moderate Risk Waste								
Household and Public Education								
1	Expand public education for reducing household hazardous waste generations and proper disposal.	0	5	9	0	0	9	5
2	Maintain education on alternative products.	1	5	9	2	0	10	5
Household Hazardous Waste Collection								
3	Use mobile collection centers to target rural areas.	0	5	8	2	0	8	5
4	Provide on-call collection services.	2	4	2	0	3	4	7
Mercury Waste Education and Outreach								
5	Continue to provide education and outreach to residents on the risks associated with mercury in the waste stream and to promote the availability of HHW collection sites and recycling businesses for alternate methods of processing along with proper handling and disposal of this waste.	0	5	8	1	0	8	5
Business Technical Assistance								
6	Develop and distribute purchasing guidelines for re-refined lubricating oils.	1	4	5	1	1	6	5

EXHIBIT 1-4
Results of Alternatives Voting

		SWAC		Public Meetings			Combined	
Number	**Description**	**Green**	**Red**	**Green**	**Yellow**	**Red**	**Green**	**Red**
7	Continue to provide business collection assistance for hazardous wastes.	1	4	5	1	0	6	4
8	Maintain enforcement efforts by appropriate enforcement agencies.	1	4	5	1	0	6	4
New 9	Maintain status quo for all MRW programs.	5	0				5	0
New 10	Look for efficiencies in all MRW programs.	9	0				9	0
Section 13. Administration and Enforcement								
1	Spokane Regional Solid Waste System.	1	6	4	0	6	5	12
2	Solid Waste District.	1	3	4	0	4	5	7
3	Solid Waste District with an Executive Advisory Committee.	1	2	0	1	3	1	5
4	Independent Regional Authority.	9	0	4	2	2	13	2
5	Municipally-Operated Disposal Facility.	1	7	0	0	4	1	11
6	Regional Solid Waste Planning Committee.	0	6	8	0	0	8	6

EXHIBIT 1-5
Summary of Recommendations

Section 4. Source Reduction

The Plan supports careful assessment and judicial use of public funds to provide financial assistance for waste reduction programs in meeting the State's priority of waste reduction efforts. Free-market economy and public education should be encouraged in order to contribute to the success of overall waste reduction and recycling programs.

The Plan endorses product stewardship as a means of promoting greater reuse of products and materials that have residual value as an alternative to their disposal as municipal solid waste. Finding alternative uses for waste products can reduce the volume and cost of their disposal and contribute to the cost effectiveness of their consumption as a resource. The complete use of toxic and hazardous substances for their intended purpose can reduce the cost and impact of disposing of them as components of the waste stream. The Plan strongly supports the development of public and/or private partnerships in programs that market the reuse and recycling of select products. Examples include the reuse of grocery bags, reselling or exchange of household items, and greater utilization of used building materials in the construction of public infrastructure and the private housing market.

Product Stewardship

1. Develop partnerships with private sector organizations to provide reuse and recycling options for select products.

3. Support product stewardship efforts.

Procurement

4. Assess using purchasing power to influence markets for recovered materials.

Internal Waste Reduction Practices

6. Implement in-house waste reduction programs and practices.

Waste Reduction Education

7. Continue waste reduction education programs.

9. Assess providing recognition for waste reduction successes.

Waste Material Exchanges

10. Continue administration of waste/materials exchange.

11. Encourage private waste exchanges.

EXHIBIT 1-5
Summary of Recommendations

Section 5. Recycling

The Plan supports the region's efforts in recovering recyclable material from the solid waste stream and endorses the recycling priorities and goals established by the State of Washington.

The Plan encourages an increased use of metrics to provide the necessary fact-based feedback upon which continued improvement can occur and recommends regular, recurring evaluation of existing recycling programs to determine the feasibility of adding new materials or removing materials that are not economically feasible to recycle. However, it should be recognized that there could be a lower net cost to recovering recyclable materials and paying for their reentry into the commodities market or utilizing them in another beneficial application than it would be to dispose of them as a solid waste.

The Plan recommends continued examination of established residential recycling methods in the interest of increasing the amount of recyclable materials that is kept out of the waste stream and expanding the opportunity for greater participation in curbside or drop-off collection, particularly in rural areas. Simplicity is often the key to successful public participation in any substantive program. Therefore, modified alternative collection systems should be further examined as a potential means to increase residential recycling rates for both urban and rural areas.

The Plan recommends continued promotion of private efforts to further divert recyclable materials from commercial sources. Under RCW 70.95.020(7): "It is the intent of the legislature that local government be 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 recycling programs." Given this legislative intent, the System will encourage private sector solutions to present and future recycling and waste reduction challenges in Spokane County, including the incorporated entities that are signatories to the Plan. Contracted recycling should be considered either in lieu of or in addition to public recycling collection programs. Both public institutions and private enterprises could increase recycling through the establishment of a food-waste recycling program. Additionally, large public events and special venues should offer greater opportunities for recycling through increased and more convenient placement of containers for collection.

Residential Recycling

1. Continue to strive to satisfy the State's priorities for recycling.

2. Periodically evaluate existing recycling programs to determine the feasibility of adding new materials or removing materials that are no longer economically feasible to collect.

3. Monitor and improve public education efforts to maintain the current success as well as increase the amounts of materials diverted for recycling and composting.

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4. Monitor and respond to Washington's electronic waste recycling law ESSB 6428.

5. Perform study on costs and benefits of multi-stream and other curbside recycling systems. Use results to determine feasibility of changing curbside recycling systems from current three-sort system.

6. Assess voluntary curbside or drop-off recycling collection programs in rural areas. Provide results to collectors and rural jurisdictions.

8. Evaluate the current residential recycling system for potential improvements that will increase diversion at the lowest cost with the highest effectiveness.

Commercial Recycling

10. Continue to support and encourage private efforts to divert recyclable materials from commercial sources.

11. Continue to encourage non-residential recycling through local ordinances, policies, procedures, incentives, technical assistance, and recognition programs.

12. Encourage food waste management by the commercial sector.

Composting

15. Expand yard waste collection efforts, including construction of a local compost facility or other yard debris management systems.

Public Recycling

17. Develop program to facilitate recycling at public venues and events.

Section 6. Collection

The Plan recommends that additional means be assessed to improve the solid waste collection process. The use of incentive rates should be considered to encourage increased recycling and waste reduction. An example is the "Pay as You Throw" program where the rates are structured so that those who dispose of more are charged more than those with lower waste volumes. Alternative collection strategies such as co-collection and/or frequency of service should also be considered.

The option of mandatory collection should be carefully assessed. More centralized recyclable collection locations for rural households would support optional self-hauling and contribute to greater waste reduction. The Plan does not promote mandatory commercial recycling, but does support a free-market economy with a progressive and participative business sector combined with public education to contribute to Ecology's priorities of waste management.

2. Assess changing service levels to capture more households.

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3. Assessing contracting for recycling.
4. Assess alternative collection strategies.
5. Assess mandatory collection.

Section 7. Transfer Systems

The Plan recommends the development of criteria for determining if the existing Spokane Regional Solid Waste System owned transfer stations need to be upgraded. The need for additional Spokane Regional Solid Waste System owned and/or privately owned transfer stations operating within the Spokane Regional Solid Waste System should also be carefully evaluated. The tonnage capacity of the existing System transfer stations is adequate, but the queuing space for self-haul vehicles at the Valley Transfer Station is inadequate. The limited queuing space available at the Valley Transfer Station increases the time required to process through the facility which can serve as an economic disincentive to commercial activities sensitive to time factors and costs.

The Plan strongly encourages regional planning leading to the establishment of locations for staging and processing of large surge volumes of debris that result from major disasters. Potential incidents for the Spokane area realistically include volcanic eruptions, wind storms, firestorms, ice storms, railroad derailment, and/or terrorist attack. Pre-identification of staging areas and the establishment of contingency handling processes, including potential contracted services, will ultimately reduce the impact of such disasters, increase the public safety during response/cleanup operations, and lessen the overall impact on our region.

1. Develop criteria for determining if the existing transfer stations need to be upgraded, including assessing improvements to operational efficiencies.
2. Assess needs for additional transfer stations.
3. Establish locations for staging and storage of natural disaster debris.
4. Offer reuse areas at System facilities if costs, logistics, and demand for the service justify implementing a program.

Section 8. Energy Recovery

Provided that the WTE facility remains an element of the region's solid waste management strategy, the Plan recommends that plant operations must remain responsive enough to be able to meet future State and Federal air emissions requirements through the application of maximum achievable controls technology in a manner that is deemed cost effective and affordable.

The federal government considers municipal solid waste to be a renewable energy source. The electricity produced from steam, generated as a result of the mass burn process, is a clean, easily distributed form of energy that contributes to the sustainability of our

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community. The revenue generated from the sale of the recovered energy helps offset the cost of the overall waste management system and allows for the subsequent disposal of solid waste in a manner that is less harmful to our environment. Additionally, there remains a substantial amount of low-grade process heat after the steam turbine electrical generation process that might be sold as district heat in nearby development of the Spokane Airport Business Park.

The Plan recommends the careful assessment of expansion of the WTE Plant, specifically the addition of a third boiler, including considering the impacts from regional solid waste generation volumes. However, the capital bonds required to pay for the initial construction of the WTE Plant will be completely paid off by 2011. This will significantly lower the annual cash flow requirements of the system and perhaps allow for a substantive reduction in tipping fees. The plant has been well maintained and with continued maintenance, has many years of useful life remaining. Therefore, it makes sense to continue operations under the conditions stated above and to take advantage of this opportunity to lower overall system costs and/or tipping fees to competitive levels. The Plan strongly encourages assessing all options that can reduce the cost of plant operations to be considered, including in-house operation, contracted operations, or its sale to a private entity.

The Plan also recommends consideration be given for additional waste processing on the receiving side in order to remove more material that is not burnable and to increase the recovery of recyclable materials. Similarly, the Plan recommends the pursuit of post-processing technologies for the substantial amount of residual ash that is a byproduct of the mass burn process. Possible applications include encouraging the use of bottom ash as a component of non-structural fill for roads, parking lots, and building sites. Possible uses for the fly ash might be as a component in cementitious construction materials as a substitute for cement. Additional waste processing at the WTE Plant and the system transfer stations can further increase recycling rates and improve the overall performance of the plant.

Finally, the Plan encourages the local consumption of the WTE Plant's energy production to help satisfy the area's needs, particularly for public infrastructure that is more heavily energy dependent, such as wastewater treatment or an electrified regional light rail system.

1. Maintain the WTE Facility to continue operations after bond retirement.
2. Assess issues and parameters of adding a third boiler to the WTE Facility.
3. Evaluate front-end processing of waste to improve recovery of material prior to incineration.
4. Assess development of Malloy Prairie landfill site for ash disposal.
6. Assess combining the ash and bypass disposal contract with the WTE operating contract instead of renewing the existing contract.

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8. Assess sale of the WTE Facility to a private company or public energy utility.

9. Assess sale of Malloy Prairie landfill site.

Section 9. Landfills

The Waste to Energy facility cannot handle all of the waste generated within Spokane County. A large component of the waste stream is non-burnable waste that does not lend itself to mass burn technology. Additionally, the process itself results in residual ash that currently is transported for disposal in the Roosevelt Regional Landfill in Klickitat County, Washington. Therefore, until other technologies and/or waste disposal strategies become more available and affordable, landfill disposal will remain an element of the region's overall waste management strategy.

The Plan recommends assessing multiple transportation modes for out-of-county landfill disposal of waste in order to reduce the vulnerability and expense associated with any single transport mode. Contracts should be competitively based on cost, reliability, and responsiveness with respect to meeting the needs of Spokane County.

The Plan also recognizes the potential benefits of in-county landfill disposal, in part to provide for contingency disposal capacity when bypass solid waste cannot be sent to an out of county landfill, as well as in the event of civil or natural disasters that could result in a large surge of solid waste requiring immediate disposal. Any additional landfills should be sited within Spokane County with the greatest amount of scrutiny and consideration for the environment, in particular, the regional aquifer.

The Plan recommends that all post-closure costs for landfills that exist within Spokane County, and for which the public has a financial liability, be fully considered for inclusion within the overall regional waste management system. Taking a long-term approach in addressing the financial obligations presented by past and present landfill operations will be in the best interest of Spokane County, both fiscally and environmentally.

The Plan supports the continued development of alternative waste disposal technologies. The Plan is very supportive of monitoring and assessing gas extraction and energy recovery technologies that can further reduce the potential environmental impacts of landfills while adding to the overall sustainability of the region.

1. Investigate alternative transportation modes for waste transferred to an out-of-County landfill.

2. Expand the Northside Landfill MSW cell for contingency/bypass use.

3. Examine post-closure care funding for County- and City of Spokane-owned landfills.

4. Monitor developments in alternative processing technologies for municipal solid waste.

5. Assess development of an in-County MSW landfill for use after 2011, either public or

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privately owned and operated.

6. Assess long haul of municipal solid waste out of the County.
7. Assess using both the WTE Facility and out-of-County landfill for disposal of MSW.
10. Identify needs and costs to remediate closed landfills in the County (including private landfills).

Section 10. Miscellaneous Waste

The Plan supports public education as it relates to miscellaneous waste handling and disposal. Specifically, efforts to promote awareness among individual homeowners regarding the proper identification, handling, and disposal procedures for asbestos containing materials should be included as part of the System's public outreach program. Similarly, the Plan supports continued coordination with the Spokane Regional Health District to produce and distribute educational materials related to biomedical wastes. The Plan emphasizes the need for continued System involvement in the planning and execution of local, state, and federal emergency response plans, particularly as they involve agricultural or other miscellaneous wastes discussed in this chapter.

The Plan recommends additional research and investigation of alternative uses for the ash generated as a by-product of operating the Waste to Energy facility. Currently, disposal of the resultant ash by rail to a regional landfill is a major cost component of plant operations. This recommendation supports a careful and thorough examination of the issue in the hope that better information will ultimately lead to lower disposal costs for the citizens of Spokane County, a further reduction of waste volumes, increased sustainability of our community development, and continued protection of our environment.

The Plan supports the diversion of yard debris in biosolids composting programs, but funding sources should come from outside of System or solid waste grant funds. The Plan recommends the existing programs related to contaminated soils, recycling of electronics, foundry operations, paper sludge, tires, and universal waste continue to be managed by the private sector. The Plan further encourages that, wherever appropriate, the private sector be allowed to recycle and treat other miscellaneous waste streams as they exist or become established.

Special Waste

1. In Spokane County, any generator wishing to manage hazardous wastes as special wastes should consult with the Washington State Department of Ecology (Ecology) and, as appropriate, solicit the services of qualified waste management contractors for handling and managing the wastes.

Agricultural Waste

2. Develop emergency response plans regarding agricultural waste specific to available

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resources and operations and in coordination with local, state, and federal agencies.

3. Continue to support existing federal, state, and other agency policies and procedures that have been developed for the management of animal carcasses that have been diagnosed or suspected of being carriers of an infectious disease.

Asbestos Waste

4. Continue to educate homeowners about proper identification of asbestos-containing materials and proper handling and disposal methods.

5. The System should continue to work with SCAPCA to develop more comprehensive information and outreach strategies. Information is available on the SCAPCA website www.scapca.org.

Ash from Waste-to-Energy Facility

6. Continue to monitor research and investigate alternatives for ash utilization. The handling of ash residue must be protective of public, worker, and environmental health and safety. Substantive changes to the handling of the ash residue shall be accompanied by an early and extensive public process consistent with WDOE permit requirements. Any ash recycling program must be preceded by extensive research into recycled ash, with documentation that no significant harmful effects exist from the recycled ash products before a project is undertaken. Any notification of permit changes shall be copied to the governing bodies over the SRSWS.

Biomedical Waste

7. Continue to coordinate with SRDH in the distribution of educational materials for correct management of medical waste generated by residents.

8. Continue to plan and coordinate with the appropriate federal, state, and local agencies regarding emergency response plans involving human or animal diseases.

Biosolids and Septage

9. Continue to monitor potential changes and examine other alternatives for future disposal, if necessary.

10. Funding sources should be pursued for existing biosolids composting facilities that need to replace aged and worn-out equipment, to improve system processing, and to provide reliable operations.

Contaminated Soils

11. Continue to allow the private sector to manage and dispose of contaminated soils in permitted facilities.

12. Where appropriate, support and encourage the private sector to treat contaminated soils

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to minimize the amounts landfilled.

Electronic Waste

13. Support e-waste recycling activities within the private sector.

Foundry Operations

14. Continue to allow the private sector to manage and dispose of foundry wastes.
15. Management practices should be encouraged to reduce and recycle these wastes, when feasible.

Paper Sludge

16. The County and cities should continue to allow the private sector to appropriately manage and dispose of its paper sludge wastes.
17. Management practices to reduce and recycle these wastes should be supported and encouraged, when feasible.

Tires

18. Encourage County and city purchasing programs for recycled tire products.
19. Continue to promote and implement County and city fleet programs to reduce tire waste.
20. Continue to include information on reducing tire waste and recycled tire produces in public education programs.
21. Assess use of waste tires as feedstock for Waste to Energy Facility during seasonal low-volume periods.

Universal Wastes

22. Continue to allow small quantity generators to bring UW to existing Small Quantity Generator (SQG) waste collection events for proper disposal.
23. Continue to promote the private sector to appropriately manage universal waste for recycling.

Section 11. Construction, Demolition, Landclearing, and Inert

The Plan supports continued public outreach and education on options for the waste reduction, recovery, and disposal of construction, demolition, landclearing, and inert waste (CDL/I). Based on the waste stream analysis provided as an appendix to this plan, CDL/I represents the greatest opportunity for further waste reduction through the potential recovery of recyclable materials. Therefore, the Plan strongly supports considerations for

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development of in-county CDL/I recycling facilities. The Plan supports the identified need for emergency storage, handling, and disposal capacity as called for in regional disaster management plans.

The Plan recommends the development of voluntary waste diversion specifications. Mandatory diversion specifications should be carefully assessed in order that they do not impose unnecessary costs compared to the benefits.

1. Continue to provide outreach and education on options for the waste reduction or recovery of CDL/I.
2. Assess development of CDL/I waste diversion specifications for County or municipal projects.
3. Assess use of recycled content material specifications for County or municipal construction and engineering projects.
4. Assess development of a CDL and Inert waste diversion ordinance.
5. Support markets for CDL/I by promoting reuse and recovery.
6. Evaluate financial incentives, public/private partnerships, and policies to encourage recovery/recycling of CDL/I materials.
7. Continue with development of a Disaster Management Plan for emergency disposal activities that coordinates with federal, state, and local agencies' emergency plans.
8. Assess options regarding development of in-County CDL recovery facilities.

Section 12. Moderate Risk Waste

The Plan recommends continuing with the System's current public education program related to moderate risk waste. Additional opportunities for moderate risk waste education, training, collection, or processing programs should be carefully assessed to weigh the costs with the benefits of the programs. Expenditure of limited resources must always be appropriately scrutinized and prioritized. The Plan encourages the system to continuously look for ways to improve and monitor the effectiveness of its programs.

Household and Public Education

1. Continue public education programs to reduce the generation of moderate risk waste.
2. Continue to provide public education on alternative products.

Household Hazardous Waste Collection

3. Assess using mobile collection centers to target rural areas.
4. Assess providing on-call collection services for moderate risk waste.

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4a. Continue Household Hazardous Waste collect ion at permanent System facilities.

Mercury Waste Education and Outreach

5. Continue to provide education and outreach to residents on the risks associated with mercury in the waste stream and to promote the availability of HHW collection sites and recycling businesses for alternate methods of processing along with proper handling and disposal of this waste.

Business Technical Assistance

6. Develop and distribute purchasing guidelines for re-refined lubricating oils.
7. Continue to provide business collection assistance for MRW.
8. Maintain enforcement efforts by appropriate enforcement agencies.

Section 13. Administration and Enforcement

The Plan recommends maintaining support for required regulatory and enforcement activities. The Plan supports cooperative efforts in reducing illegal dumping throughout the County and the abatement of solid waste nuisances on public and private property.

The Plan supports high level collaboration and representation by all affected jurisdictions within Spokane County regarding regional solid waste management and disposal administrative issues, both before and after interlocal agreements expire or are renewed. Careful evaluations of all administrative designs should be conducted in an open, transparent atmosphere to clearly identify the benefits, responsibilities, and commitments of each option.

From a governance and administrative perspective, the Plan recommends the current system be restructured into a system that is governed by a board comprised of membership that is proportionally representative of the overall region. Other regional governance boards already exist and so this would be consistent with other programs managed on a regional basis. Examples of existing boards are the Regional Public Health Board, Airport Board, Spokane County Air Pollution and Control Authority Board, and the Spokane Transit Authority Board. Suggested representation would be three elected officials from the City of Spokane, two elected officials from the City of Spokane Valley, two elected officials from the Association of Small Cities, and two elected Spokane County Commissioners.

Among options for administrative design, the Liaison Board could be eliminated or considered as the basis for establishment of a regional governing board with real authority for establishing policy and making final decisions in regard to System management and budgetary issues that are regional in nature.

The SWAC recommends that the Solid Waste Advisory Committee, under any revised system of governance, continue to serve in its role as an advisory body to the new board of authority. Their input could be of greater weight than the current reporting structure in

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which they report to the Board of County Commissioners. Additionally, that body could consider the creation of two sub-committees to help in the formulation of advice regarding (1) policy matters, and (2) technical matters.

SWAC further strongly supports that practical matters along with potential legislative actions to authorize the above recommended system dictate that the transition to a regional governance structure be planned for implementation to coincide with either the expiration of existing interlocal agreements or at such time as the existing agreements can be renegotiated. The Solid Waste Advisory Committee, however, recommends that a new governance system be implemented in the most expeditious manner reasonably achievable, but not later than 2011.

Because of the legal and political complexities involved in understanding and designing regional solid waste disposal systems, the Plan recommends further study and legal expertise to flesh out advantages and challenges to these or any other designs. The Liaison Board could facilitate the formation of a Regional Solid Waste Planning Committee to study and discuss issues and options regarding the future structure of solid waste management and disposal administration within Spokane County, as described in Alternative 6.

6. Regional Solid Waste Planning Committee

The Liaison Board should establish a Regional Solid Waste Planning Subcommittee within 90-days of final Plan approval comprised of County and municipal jurisdictions, Fairchild Air Force Base, and appropriate agencies and stakeholders, to discuss and further research options for future regional solid waste management administrative structures, including but not limited to:

- Liaison Board assumes administration of the Spokane Regional Solid Waste System.
- Transfer of the Spokane Regional Solid Waste System administration to the Board of County Commissioners.
- Transfer of the Spokane Regional Solid Waste System administration to a Regional Board made up of countywide stakeholders.
- Spokane Regional Solid Waste System.
- Solid Waste Disposal District.
- Solid Waste Disposal District with an Executive Advisory Committee.
- Independent Regional Authority.
- Municipal-Operated Disposal Facility(ies).
- Metropolitan Municipal Corporation.

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7. Assess a solid waste program tipping fee rebate.

1.4 Regulatory Framework

1.4.1 Purpose and Authority

The purpose and authority for solid waste planning is derived from Ch. 70.95 RCW State Solid Waste Management – Waste Reduction and Recycling Act, which defines the role of counties and cities in solid waste management.

In 1989, the Washington State Legislature amended Ch. 70.95 RCW to provide added direction to local governments to incorporate waste reduction and source separation strategies into coordinated systems of solid waste management. The State's objective of waste reduction is to reduce the amount of waste that becomes a government responsibility. The objectives of source separation are to remove materials from disposal that have resource value and to effectively isolate hazardous materials from improper disposal.

The revised legislation also addressed two significant issues relevant to the development of solid waste management plans: solid waste management priorities, and specific elements of local waste reduction and recycling programs.

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 amendment also established a goal of achieving a 50 percent municipal solid waste (MSW) recycling rate for the state by 2007.

1.4.2 Planning Guidelines

Complementing the legal requirement codified in Ch. 70.95 RCW, is guidance on how solid waste plans are to be prepared, as provided in the *Washington State Solid Waste Planning Guidelines* (Washington State Department of Ecology, Publication No. 90-11, 1999). These guidelines set forth the required content and recommended organizational structure for solid waste management plans. The 2009 Plan has been prepared using those guidelines.

1.4.3 Local Hazardous Waste Management

Local governments must develop hazardous waste management plans under the purview of the Hazardous Waste Management Act (Ch. 70.105 RCW). Discussion of hazardous waste is not required within local solid waste management plans, although a county or city may elect to include such a discussion in its plan. Spokane County's Hazardous Waste Management

Plan was published as a stand-alone document in 1991. It was updated and incorporated into the 1998 Solid Waste Plan.

Local moderate risk waste plans are intended to provide guidelines for the development of programs and activities addressing the management of moderate risk waste (MRW).

Moderate risk wastes, as defined by Ecology, include:

- Any household wastes generated from the disposal of substances identified by Ecology as hazardous household substances.
- Any waste generated by businesses or institutions that exhibits any of the properties of hazardous waste but is exempt from regulation because the waste is in quantities below the threshold for state or federal regulation, which is typically 220 pounds (100 kg) per month or per batch for each generator.

Moderate risk waste programs are designed to protect public health and the environment by eliminating the indiscriminate disposal of moderate risk wastes into solid waste systems, wastewater treatment systems, and the environment. Consequently, the hazardous waste management plan (referred to here as the moderate risk waste management plan, or MRW Plan) complements the solid waste management plan through its efforts to ensure proper handling and disposal of hazardous waste from households, businesses, and institutions.

For the 2009 Plan update, moderate risk waste management has been incorporated into the Solid Waste Management Plan in Section 12.

1.4.4 Disposal Facility Siting Criteria

The 1984 amendment to the Solid Waste Management - Reduction and Recycling Act (Ch. 70.95.090 RCW) mandates that each local solid waste management plan assess the planning area for disposal facility siting according to various locational standards. An in-depth analysis of disposal siting was conducted as part of the *1992 Spokane County Comprehensive Solid Waste Management Plan* (Parametrix, 1992). The results of that analysis are summarized in this plan.

1.4.5 Beyond Waste Plan

An important State document that provides guidance and direction in the development of the SWMP is the *Beyond Waste Plan*, the State's solid and hazardous waste management plan (adopted in November 2004). The Beyond Waste Plan (BWP) shifts the direction of solid waste planning away from a focus on management and towards a vision of waste prevention. Counties are not mandated to follow the initiatives outlined in the BWP, but are strongly encouraged to pursue initiatives and recommendations that are feasible in their jurisdictions. The BWP identifies five initiatives, or areas of focus:

1. Moving Toward Beyond Waste with Industries
2. Reducing Small-Volume Hazardous Materials and Waste
3. Increasing Recycling for Organic Materials
4. Making Green Building Practices Mainstream
5. Measuring Progress Towards Beyond Waste

In addition to the above initiatives, the BWP identifies a number of issues that affect the current system of solid and hazardous waste management. Implementing the *Beyond Waste Plan* will take several years.

Thus, the BWP outlines the following issues affecting current waste handling to move its vision forward:

Current Hazardous Waste System Issues

1. Pollution Prevention
2. Compliance with *Dangerous Waste Regulations*
3. Permitting/Corrective Action

Current Solid Waste System Issues

1. Solid Waste Authorities and Local Planning Issues
2. Recycling and the Technical Nutrient Cycle
3. Disposal—Yesterday, Today and Tomorrow

1.5 Solid Waste Planning History in Spokane County

1971 and 1984 Spokane County Solid Waste Management Plans

1971 - Spokane County developed its first solid waste management plan for the county.

1984 - The *1984 Spokane County Solid Waste Management Plan* (Parametrix, 1984) update was prepared by Spokane County to address changes in regulations, technology, and public awareness and to guide program development. Plan recommendations led to the development and implementation of waste reduction and recycling programs and a WTE Facility, conducting a siting study for a new regional landfill, and forming an intergovernmental agency to manage solid waste issues. An additional and significant development was the formation of the System in 1988 by interlocal agreement between the County and the cities/towns of Spokane County.

The System became responsible for implementing solid waste management plans, planning and developing specific waste management programs, and updating solid waste plans.

1991 Spokane County Moderate Risk Waste Management Plan

The *1991 Spokane County Moderate Risk Waste Management Plan* (MRW Plan) (Parametrix, 1991) was the System's first comprehensive planning effort designed to improve the management of moderate risk wastes in Spokane County. The MRW Plan contributed to the Washington State Legislature's goal of "…establishing a comprehensive state-wide framework for the planning, regulation and management of hazardous waste…" as outlined in the state Hazardous Waste Management Act, Ch. 70.105.007 RCW.

The MRW Plan was developed to protect the natural resources and public health in Spokane County by eliminating the discharge of moderate-risk wastes into solid waste and energy recovery systems, wastewater treatment systems, and into the environment through

indiscriminate disposal. The MRW Plan was developed with significant direction and input from the SWAC, regional cities, numerous local and state agencies, and the general public.

The 1991 MRW Plan highlighted seven key areas with recommendations for improving moderate risk waste management in Spokane County:

- Household hazardous waste education.
- Household hazardous waste collection.
- Moderate risk waste education for businesses.
- Moderate risk waste collection for businesses.
- Health and safety.
- Compliance and enforcement.
- Program evaluation.

1992 Spokane County Comprehensive Solid Waste Management Plan

The *1992 Spokane County Solid Waste Management Plan* (Parametrix, 1992) update was built on the planning framework established in the 1984 Plan and was prepared in accordance with the new planning requirements set forth in Ch. 70.95 RCW and outlined in the state planning guidelines established in 1990.

1992 - Plan key issues:

- Significant increase in waste diverted from disposal.
- Selection of a vendor for yard waste processing.
- Development of long-term plans for disposal of nonprocessible waste, bypass, and ash from the WTE Facility.
- Documented the status of landfill closures in the county.
- Documented plans for construction of the Colbert and Valley Transfer Stations.
- Recommended a coordinated approach to illegal dumping between the Spokane Regional Health District and the System.

1998 Spokane County Comprehensive Solid Waste Management Plan

1998 - Plan key issues:

- A comprehensive review of waste reduction and recycling opportunities in the county that showed a significant increase in materials that were diverted from disposal.
- Promotion of grass recycling by sponsoring the participation of 50 local households in the Toro Mulch Mowing program.
- A catastrophic waste management plan.
- A long-term plan for disposal of nonprocessible waste, bypass, and ash from the WTE Facility.

- Documentation of the status of landfill closures in the county.
- Documentation of plans for the upgrade the Colbert Transfer Station, addition of a third scale and second scalehouse, and the expansion of the facility.
- Support for coordinated approach to illegal dumping between the Spokane Regional Health District and the System.

1998 Moderate Risk Waste Management Plan

The *Moderate Risk Waste Management Plan* (Parametrix, 1998) update was fully integrated into the 1998 Comprehensive Solid Waste Management Plan, and was not a separate, stand-alone document. The 2009 Plan will continue the inclusion of the MRW Plan as part of the overall waste management planning document for the county.

The 1998 MRW Plan specifically addressed the Used Oil Recycling Act (Ch. 70.951 RCW) concerning needs for collection and recycling of used motor oil produced by residential "do-it-yourselfers" – individuals who change the oil in their own vehicles. The Act requires that plans establish appropriate goals for improving collection, recycling and re-refining of used oil, for educating citizens, and for meeting reporting requirements.

A summary of the MRW Plan recommendations is provided in Section 12.

1.6 Consolidated List of Facilities

A consolidated list of solid waste and recycling facilities is included as Exhibit 1.6. This list includes all public and private facilities that are open to the public. Where available, information has been included on the existing use and capacity, as well as any known deficiencies in the facility. The location in the Plan where more detailed information on the facilities can be found is indicated in the last column of Exhibit 1.6.

EXHIBIT 1-6
Consolidated List of Solid Waste and Recycling Facilities in Spokane County

Facility	Type	Ownership	Existing Usage	Capacity	Deficiencies	More Info. in Section
Northside Landfill (MSW cell)	Landfill	Public - City of Spokane	13,000 tons per year	400,000 CY		9.2.3.2 and after
Graham Road Recycling & Disposal Facility	Limited Purpose Landfill	Private - Waste Mgmt.	300,000 tons per year	11,588,000 tons (100 years)		11.3.5.1
Valley Transfer Station	Transfer Station and recycling	Public – City of Spokane	1,200 tons per day		Limited queuing space	(5.2)
North County Transfer Station	Transfer and recycling	Public – City of Spokane	800 tons per day			(5.2)
Sunshine Transfer Station	Transfer Station and Recycling	Private				5.2.5.3

Waste to Energy Facility	Waste to Energy	Public – City of Spokane		800 tons per day		5.2.2
Inland Asphalt Landfill	Inert Facility	Private				11.3.5.1
Busy Bee Landfill & Wood Recycling Co.	Inert Facility	Private				11.3.5.1

EXHIBIT 1-6 CONTINUED
Consolidated List of Solid Waste and Recycling Facilities in Spokane County

Facility	Type	Ownership	Existing Usage	Capacity	Deficiencies	More Info. in Section
Spokane Rock Products	Inert Facility	Private				11.3.5.1
Action Recycling / Phoenix Metals	Recycling	Private				5.2.8.1
American Recycling	Recycling	Private				5.2.8.1
Clark's Recycling (Valley)	Recycling	Private				5.2.8.1
Clark's Recycling	Recycling	Private				5.2.8.1
Dickson Recycling	Recycling	Private				5.2.8.1
Diversified Recycling	Recycling	Private				11.3.5.1
Du-Mor Recycling	Recycling (including electronics)	Private				5.2.8.1
Earthworks Recycling	Recycling (including electronics)	Private				5.2.8.1
Pacific Recycling	Recycling	Private				5.2.8.1
Spokane Recycling	Recycling (including electronics)	Private				5.2.8.1
Cheney Recycling Facility	Recycling	Public				5.2.5.2
Medical Lake Recycling	Recycling	Public				5.2.5.7
Fairchild Air Force Base	Recycling	Public				5.2.6
Northwest Industrial Services	Recycling	Private				(11)

Camas Institute	Electronics Recycling	Private				5.2.8.1
Computer Monitor Service	Electronics Recycling	Private				5.2.8.1
Inland Retech	Electronics Recycling	Private				5.2.8.1
Recycle Techs	Electronics Recycling	Private				5.2.8.1

EXHIBIT 1-6 CONTINUED
Consolidated List of Solid Waste and Recycling Facilities in Spokane County

Facility	Type	Ownership	Existing Usage	Capacity	Deficiencies	More Info. in Section
PC Salvage - Tacoma	Electronics Recycling	Private				5.2.8.1
Total Reclaim - Seattle	Electronics Recycling	Private				5.2.8.1

SECTION 2

Waste Generation

2.1 Introduction

This section provides information on the waste stream in Spokane County. It includes historical and forecast waste quantities in total and on a per-capita basis. The composition of wastes disposed, recycled, and generated is also provided. This information is used as the basis for analyzing the various elements of this Plan Update.

2.2 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 Update are described using a number of terms, including municipal solid waste (MSW); construction, demolition, land clearing and inert (CDL&I) waste; miscellaneous waste; and moderate risk waste. For the purposes of this Plan Update, these wastes will be defined as follows:

- MSW means wastes generated by households and businesses that are typically delivered to the transfer stations and Spokane Regional WTE Facility 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 CDL waste delivered in small quantities to System facilities.
- CDL&I wastes include materials delivered to privately operated inert and demolition facilities for recycling or disposal, waste accepted at the Northside Landfill, and CDL&I waste segregated from MSW at the WTE Facility or System transfer stations and delivered to the Northside Landfill or to the BN Yardley Intermodal Site for long-haul disposal at the Roosevelt Regional Landfill. CDL&I wastes are further defined in Section 11.
- Miscellaneous waste includes agricultural waste, asbestos waste, ash from the WTE Facility, biomedical waste, biosolids, contaminated soils, and septic tank waste. These wastes are managed through a variety of methods, as described in Section 10.
- Moderate risk waste includes hazardous waste produced by households and by businesses and institutions in small quantities. These wastes are managed through a variety of methods, as described in Section 12.

The MSW and CDL&I waste quantity estimates exclude ash from the WTE Facility that is currently sent to RDC for disposal. This waste stream is addressed in Section 8, Energy Recovery/Incineration.

2.3 Data Sources

Waste quantity projections for this plan are based on System disposal records, recycling data compiled by the Washington State Department of Ecology (Ecology), population from the Washington State Office of Financial Management (OFM), and the results of the waste flow analysis that was conducted in conjunction with this Plan Update by Cascadia Consulting Group. Waste generation is calculated as the sum of recycling (including composting) plus disposal.

2.4 Trends in MSW Generation, Recycling, and Disposal

Generation, recycling, and disposal for Spokane County in 2004 are shown in Exhibit 2-1. The data shown do not include CDL delivered to non-System facilities, and materials counted as "diversion" by Ecology such as concrete, asphalt, tires, and anti-freeze.

EXHIBIT 2-1
2004 MSW Generation, Recycling, and Disposal for Spokane County[i]

	Tons
Generation	578,027
Recycling[a]	241,043
Disposal[b]	336,984

[a] Washington State Department of Ecology, 2006.
[b] Spokane Regional Solid Waste System, 2006.

An indication of long-term trends in disposal, recycling, and generation is shown in Exhibit 2-2. As shown in Exhibit 2-2, there has been a substantial increase in waste generation; however, recycling has increased much more than disposal.

EXHIBIT 2-2
Spokane County Historical Population and Tons of Waste Generated, Recycled, and Disposed

Year	Population	Generated	Recycled	Disposed
1992[ii]	374,569	423,812	142,733	281,079
2004	432,000	578,027	241,043	336,984
1992-2004 % Change	15.3%	36.4%	68.9%	19.9%

Exhibit 2-3 provides a comparison in per-capita generation between Spokane County, Washington State, and the United States. As shown, per-capita generation has increased at more than 1 percent per year in Spokane County, compared to a small increase for Washington State, and a very small decrease for the United States. It should be noted that the data shown in Exhibit 2-3 are accumulated from different sources that use different methodologies and have somewhat different definitions of what is and is not included as waste. However, the general trends are probably representative.

EXHIBIT 2-3
Comparison of Per-Capita MSW Generation Rates

	Lbs/Person/Day		
	Generated	**Recycled**	**Disposed**
Spokane			
1992	6.20	2.09	4.11
2004	7.33	3.06	4.27
Average annual change	1.41%	3.23%	0.32%
Washington State[iii]			
1990	6.74	2.53	4.21
2003	7.01	2.69	4.32
Average annual change	0.30%	0.47%	0.20%
United States[iv]			
1990	4.50	0.73	3.77
2003	4.45	1.36	3.09
Average annual change	-0.09%	4.90%	-1.52%

2.5 Waste Generation Forecast

Estimates of solid waste generation forecasts for Spokane County are shown in Exhibit 2-4. As shown, annual generation is forecast to increase from about 578,000 tons in 2004 to 965,000 tons in 2030. This forecast assumes a 1 percent annual increase in per-capita generation. The amount of municipal solid waste requiring disposal will depend on the level of waste reduction and recycling that occurs in the future.

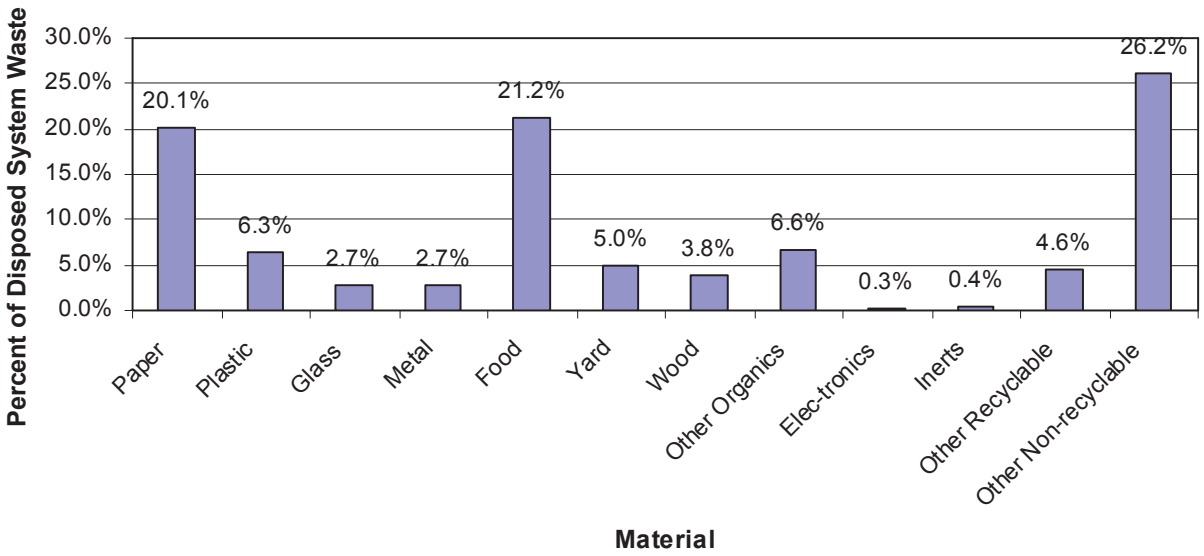
EXHIBIT 2-4
Spokane County Forecast MSW Generation

	2004	**2010**	**2020**	**2030**
Population[v]	435,835	468,191	519,577	567,897
Generation (MSW tons)	578,027	657,166	802,149	965,005
Per-capita generation (lb/p/day)	7.3	7.7	8.5	9.3

2.6 Waste Disposal Composition

During preparation of this Plan Update, a waste flow analysis was conducted (refer to Appendix B). One result of that analysis was an estimate of the composition of disposed waste in the County. Exhibit 2-5 shows the composition of waste disposed at System facilities for 10 major material categories. As shown, the most prevalent recyclable materials disposed are food wastes (21.2%) and paper (20.1%). A more detailed estimate of waste composition is shown in Exhibit 2-6.

EXHIBIT 2-5
Waste Composition Summary[vi]



2.7 Waste Import/Export

Small quantities of waste are imported into Spokane County from adjacent counties because the boundaries of some WUTC certificated haulers encompass multiple counties. In 2004, the System recorded 1,765 tons of MSW delivered to the WTE Facility for disposal from outside the County by haulers and self-haul customers.

Most of the material exported from Spokane County is ash and bypass materials from System facilities that are sent via rail to the Roosevelt Regional Landfill in Klickitat County. In 2004, 41,424 tons of MSW and 85,563 tons of ash were sent to this facility.

EXHIBIT 2-6
System Disposed Waste Stream Composition[vii]

	Percent	Tons (2004)		Percent	Tons (2004)
#2 Plastic Buckets	0.0%	43	OCC/Kraft Bags or Paper	0.3%	1,171
ABS Pipe	0.0%	127	Oil-Based Finishes	0.0%	6
Adhesives and Glue	0.0%	31	Oil-Based Paint	0.0%	11
Agricultural Crop Residues	0.0%	0	Other Aluminum & Nonferrous	0.3%	941
Alkaline/Button Cell Batteries	0.0%	111	Other Colored Glass Containers	0.0%	7
Aluminum Cans	0.2%	738	Other Colored Glass Bottles & Containers	0.0%	19
Animal carcasses	0.0%	0	Other Ferrous Metal	0.6%	2,034
Animal feces	1.3%	4,531	Other Ferrous Metals	0.4%	1,470
Antifreeze	0.0%	13	Other Glass	0.6%	1,891
Asbestos	0.0%	19	Other Hazardous	0.0%	125

EXHIBIT 2-6
System Disposed Waste Stream Composition[vii]

	Percent	Tons (2004)		Percent	Tons (2004)
Ash	0.0%	143	Other Haz Waste	0.0%	0
Asphaltic Concrete	0.0%	126	Other Mineral Aggregates	0.0%	15
Asphalt Paving	0.1%	354	Other Miscellaneous Fines	0.2%	744
Asphalt Roofing	0.0%	10	Other Non-Ferrous Metal	0.1%	439
Batteries	0.0%	53	Other Office Paper	0.9%	2,956
Bleached Polycoat Paper	0.2%	515	Other Organics (e.g., rags)	0.0%	156
Branches & Stumps	0.0%	7	Other Paper	0.4%	1,433
Bricks/Masonry Tile	0.0%	130	Other Plastics	0.6%	2,185
Brown Glass Bottles & Containers	0.1%	412	Other Plastic Packaging	0.3%	1,177
Built-Up Roofing	0.2%	666	Other Wood	0.2%	800
Bulky Items	0.1%	353	Other/Non-Recyc. Glass	0.0%	17
Carpet/upholstery/other textiles	1.6%	5,409	Paint	0.1%	233
Clay Roofing Tile	0.0%	47	Paper Bags	0.2%	750
Cleaners and corrosives	0.0%	28	Painted/Stained Wood	1.2%	3,915
Clear Glass Bottles & Containers	0.5%	1,570	Pallets and Crates	0.3%	1,010
Colored Ledger Paper	0.1%	271	Paper/Other Materials	0.7%	2,274
Composition Shingles	0.6%	2,107	Pesticides/Herbicides	0.0%	49
Compostable Paper	6.0%	20,120	Pete Containers	0.4%	1,342
Computer Paper	0.2%	565	Phone Books and Directories	0.1%	324
Concrete Masonry Unit (CMU)	0.0%	16	Plastic Film and Bags	2.2%	7,428
Concrete	0.2%	795	Plastic Products	0.4%	1,450
Construction/Demolition Wastes	2.0%	6,601	Plastic/Other Materials	0.5%	1,716
Contaminated Wood	0.7%	2,403	Polystyrene Foam	0.2%	710
Creosote/Pressure Treated	0.2%	662	Polyurethane Foam/Carpet Padding	0.0%	46
Dimensional Lumber	1.9%	6,308	Porcelain	0.0%	44
Dirt	0.3%	919	Prunings and Trimmings	0.2%	682
Disposable Diapers	1.8%	5,974	PVC Pipe	0.1%	309
Drywall Corners/Metal Bindings	0.0%	161	Recyclable glass containers	1.5%	5,082
Durable Plastic Items	0.7%	2,234	Remainder/Composite Construction & Demolition	0.5%	1,670
Electronics	0.3%	961	Remainder/Composite Household Hazardous	0.2%	779
Fiberglass (Acoustical) Ceiling Panels	0.0%	91	Remainder/Composite Metal	0.6%	2,189
Film Plastic	1.8%	6,021	Remainder/Composite Organic	1.8%	5,959

EXHIBIT 2-6
System Disposed Waste Stream Composition[vii]

	Percent	Tons (2004)		Percent	Tons (2004)
Finished Furnishings	0.0%	160	Remainder/Composite Paper	2.9%	9,872
Flat Glass	0.1%	317	Remainder/Composite Plastic	0.8%	2,682
Foam Rubber/Padding	0.2%	550	Remainder/Composite Special Waste	0.2%	683
Food Cans & Other Ferrous	0.9%	3,131	Remainder/Composite Glass	0.1%	476
Food	7.9%	26,590	Remanufacturing Scrap	0.0%	78
Food Wastes	11.2%	37,734	Rock, Soil & Fines	0.2%	684
Galvanized Steel	0.5%	1,731	Roofing/Siding	0.4%	1,328
Gravel	0.0%	164	Rubber Products	0.1%	307
Green Glass Bottles & Containers	0.3%	1,080	Sand	0.0%	0
Gypsum Board	0.1%	302	Sewage Solids	0.0%	0
HDPE Containers	0.3%	881	Slate/Quarry Tile	0.0%	40
Furniture/Mattresses	1.3%	4,334	Small appliances	0.4%	1,351
Industrial Sludge	0.0%	10	Small Prunings	0.1%	267
Insulated Wire/Cable	0.0%	107	Solvents and Thinners	0.0%	5
Insulation	0.1%	328	Structural Fiberglass	0.0%	21
Gas Metal Cylinders	0.0%	74	Stumps and Logs	0.0%	102
Gas/Fuel Oil	0.0%	22	Tarpaper/Asphalt Felt	0.3%	896
Gift Wrap Paper	0.0%	96	Textiles	2.5%	8,433
Gypsum Wallboard	0.8%	2,693	Tin/Steel Cans	0.3%	1,018
HDPE #2 Plastic Bottles	0.3%	922	Tires	0.2%	674
Household batteries	0.0%	38	Treated Medical Waste	0.0%	6
Laminate/Formica	0.0%	36	Treated wood	0.5%	1,556
Large Appliances	0.0%	108	Tyvek Vapor Barrier	0.0%	5
Large Prunings	0.3%	1,075	Uncoated Corrugated Cardboard	2.4%	8,002
Latex Paint	0.0%	63	Unfinished Furnishings	0.0%	2
Leaves and Grass	1.2%	4,080	Upholstery	0.0%	76
Linoleum	0.0%	20	Used Oil	0.0%	21
Lumber	1.4%	4,780	Vehicle & Equipment Fluids	0.0%	4
Magazines and Catalogs	0.8%	2,709	Vehicle batteries	0.0%	0
Major Appliances	0.0%	11	White Ledger Paper	1.5%	5,195
Manures	0.0%	0	Window Glass	0.1%	423
Medical Waste	0.0%	85	Wood Preservatives	0.0%	0
Mercury-Containing Waste	0.0%	15	Wood Roofing and Siding	0.4%	1,405
Mirror Glass	0.0%	1	Yard wastes	2.9%	9,679
Miscellaneous Inorganics	0.3%	897			
Miscellaneous Organics	0.4%	1,458			
Miscellaneous Plastic	0.2%	801			

EXHIBIT 2-6
System Disposed Waste Stream Composition[vii]

	Percent	Tons (2004)		Percent	Tons (2004)
Containers					
Mixed Demo. Wood	0.4%	1,459			
Mixed/Demo. Gypsum Scrap	0.4%	1,506			
Mixed Metals/Materials	1.1%	3,849			
Mixed Recyclable Paper	8.2%	27,575			
Mixed Residue	0.2%	662			
MSW	0.1%	175			
New Gypsum Scrap	0.3%	864			
New/Clean Used Lumber	0.9%	2,881			
New/Demo. Engineered Wood	1.0%	3,310			
Newspaper	2.1%	7,232			
Non-distinct Fines	0.6%	2,135			
OCC/Kraft Paper	1.6%	5,441			
			Total	100.0%	336.984

[i] Spokane Regional Solid Waste System Records and Washington State Department of Ecology.
[ii] 1998 Spokane County Comprehensive Solid Waste Management Plan.

[iii] Solid Waste in Washington, 13th Annual Report, 2005.
[iv] U.S. EPA, MSW in the United States, 2003 Facts and Figures.
[v] Washington State Office of Financial Management, Intermediate Forecast.
[vi] Spokane County Waste Flow Analysis, Cascadia Consulting Group, 2006.
[vii] Waste composition estimates compiled by CH2M HILL from Cascadia Waste Flow Analysis, 2006.

SECTION 3

Natural and Human Environment

3.1 Natural Environment

The geographic area of Spokane County covers approximately 1,765 square miles and lies at the northeast corner of the Columbia Plateau (see Exhibit 3-1). Spokane County is situated midway between Canada to the north and the State of Oregon to the south. Neighboring Washington State counties include Whitman County to the south, Lincoln County to the west, and Stevens and Pend Oreille to the North. The State of Idaho lies to the east. Neighboring Idaho counties include Kootenai and Benewah Counties.[i]

3.1.1 Topography

The topography of Spokane County ranges from its lowest elevation of 1,534 feet above sea level along the Spokane River to Mount Spokane at 5,878 feet above sea level. The Spokane River, which originates at Lake Coeur d'Alene in Idaho, flows primarily east to west through Spokane County in the wide depression of land that forms the Spokane Valley. A drop of 134 feet in the river, known as the Spokane Falls, marks the beginning of a shift in the river's flow to a northwesterly direction. Another drop of 240 feet occurs at the confluence with the Little Spokane River, where the topography changes to a deep gorge-like valley bordered by prominent cliffs and terraces.

To the north and west of the Valley, there are several mesas that rise 400 to 500 feet above surrounding lands. These mesas range between 2,300 and 2,450 feet above sea level. The northeastern portion of Spokane County is a bedrock highland that includes Mount Spokane and surrounding peaks.

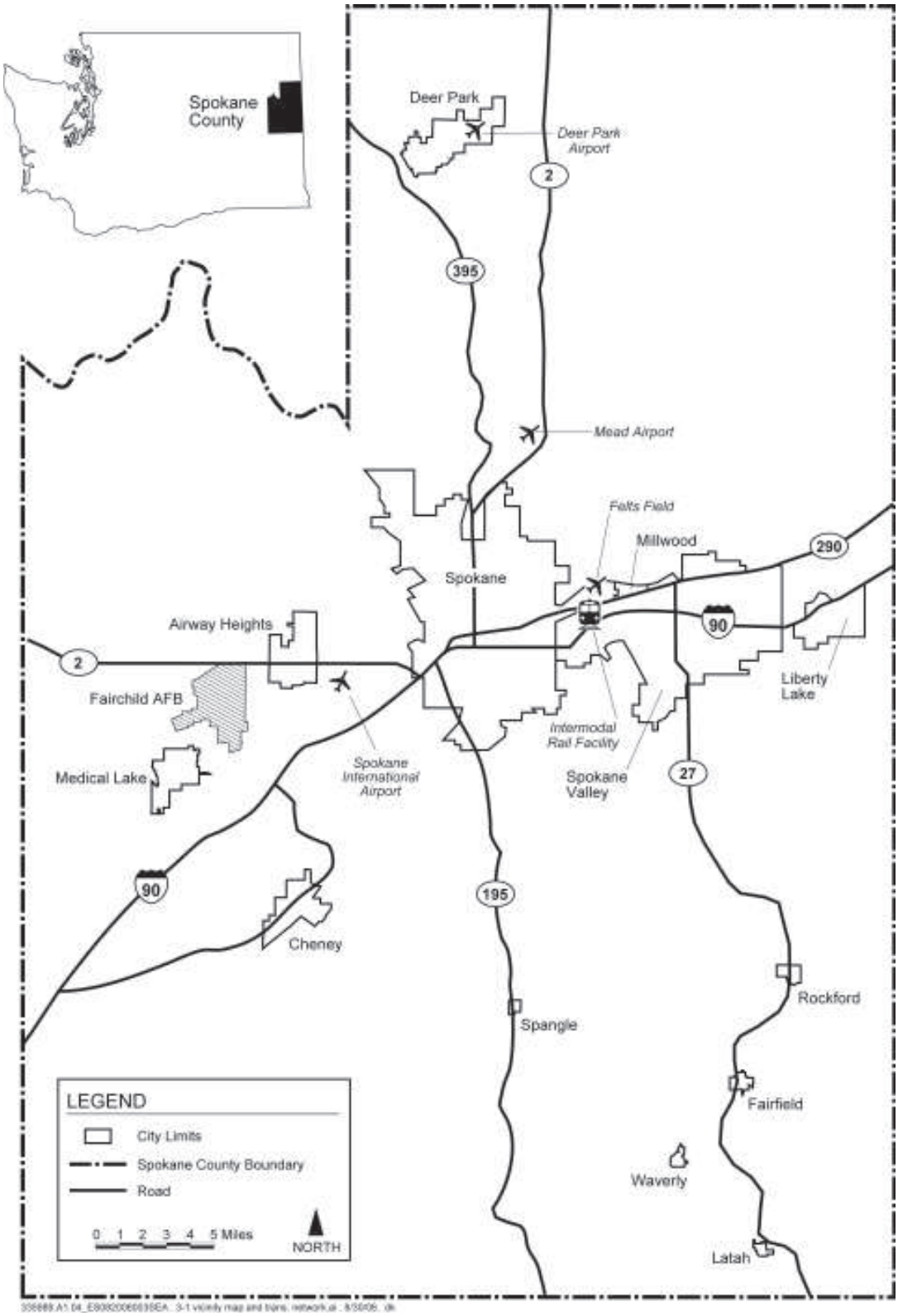
Much of the topography of the southwestern part of Spokane County consists of southwest-trending channels eroded into the basalt plateau, known as the channeled scablands. Topography in the south and southeast consists of relatively flat basalt plateaus. However, various peaks are found in this area, with Mica Peak rising to 5,205 feet above sea level.

3.1.2 Air

3.1.2.1 Climate

Spokane County's climate is derived from oceanic, continental, and mountain influences. To the west, the Cascade Mountains limit the movement of cool marine air into the area. The Rocky Mountains to the east and north protect Spokane County from most of the cold air masses that move across Canada in the winter. Summer weather is generally dry, sunny, and warm, with cool nights. Winters are fairly cool, with temperatures often below freezing and with mostly low precipitation.

EXHIBIT 3-1
Spokane County Vicinity Map



Meteorological data compiled from 1971 to 2000 are shown in Exhibit 3-2 and compared to 2005 data. The average annual maximum, minimum, and average temperatures are generally the same. Temperatures can range from below zero in the winter to over 100 degrees (F) in the summer. Precipitation increased somewhat, most of that increase coming in the form of rain because actual snowfall was less than average. Most of Spokane County's precipitation occurs between October and March. Sub-zero temperatures and disabling snowfalls are not common. Winds are predominately out of the southwest, with an average wind velocity of 8 mph.[ii]

EXHIBIT 3-2
Meteorological Data (Average Annual)
National Weather Service[iii]

Year(s)	Average Annual Maximum Temperature	Average Annual Minimum Temperature	Average Annual Average Temperature	Average Annual Precipitation (inches)	Average Annual Snowfall (inches)
1971 to 2000	57.4°F	37.2°F	47.3°F	16.55	45.8
2005	57.5°F	38.1°F	47.8°F	20.14	16

3.1.2.2 Air Quality

Because of topographic and climatic conditions, Spokane County can suffer from significant seasonal fine particulate air-pollution problems. Frequent temperature inversions and stable air conditions cause air pollutants to accumulate in the Spokane Valley basin. These conditions are most persistent in fall and winter. Spring and summer inversions are more frequent but shorter in duration. Wood stoves are used widely in Spokane County, and contribute greatly to the air pollution problem. Burning bans are mandated when pollution is trapped in the Spokane Valley and the air quality is deemed impaired by Ecology or the Spokane County Air Pollution Control Authority (SCAPCA). Burning of grass and other agricultural fields are tightly controlled by Ecology and SCAPCA--agencies that issue permits on a limited basis because of the detrimental effect on air quality. SCAPCA has prohibited burning under Article VI, Section 6.01.D as follows:

- Within a No-Burn Area, as defined by resolution of the Board of Directors of the Authority.
- After December 31, 2000, within any urban growth area having a population of 5,000 or more people, or within any incorporated city or town having a population of 10,000 or more people, or within any urban growth area contiguous with a nonattainment area or former nonattainment area.
- After December 31, 2006, within any urban growth area.
- Where the Authority, Ecology, or permitting authority has determined that reasonable alternatives are available.

These SCAPCA regulations are based on similar regulations administered by Ecology under WAC 173-425-040.

The primary source of carbon monoxide (CO) in the atmosphere is gasoline-powered motor vehicles. Other sources include heating and power generation from natural gas and wood heat for residential, commercial, or industrial uses. Topographic conditions restrict the movement of air and pollutants out of the Spokane Valley basin and further complicate the inversion problems. The Spokane City Center, where there is increased traffic volume and the associated emissions, was within a CO non-attainment area. However, attainment status was achieved in July 2005, primarily as a result of improved air emission controls on vehicles and the replacement of older vehicles that operated without pollution prevention controls with newer, improved vehicles.

Furthermore, portions of Spokane County have been designated as non-attainment areas for particulates less than 10 microns in diameter (PM_{10}). Spokane County and the cities of Spokane and Spokane Valley have changed their snow removal programs to reduce the amount of traction sand placed on the roads in the winter by increasing the use of liquid de-icers, and sweeping and flushing high traffic areas more often (Edgar, 2006). The City of Spokane made significant changes to its sweeping program. The downtown area is swept and flushed once per week as a result of changes made in 1993. Since implementation of this program, Spokane has only exceeded the Federal Air Quality PM10 Standard twice (Egger, 2006).

3.1.3 Water

3.1.3.1 Surface Water

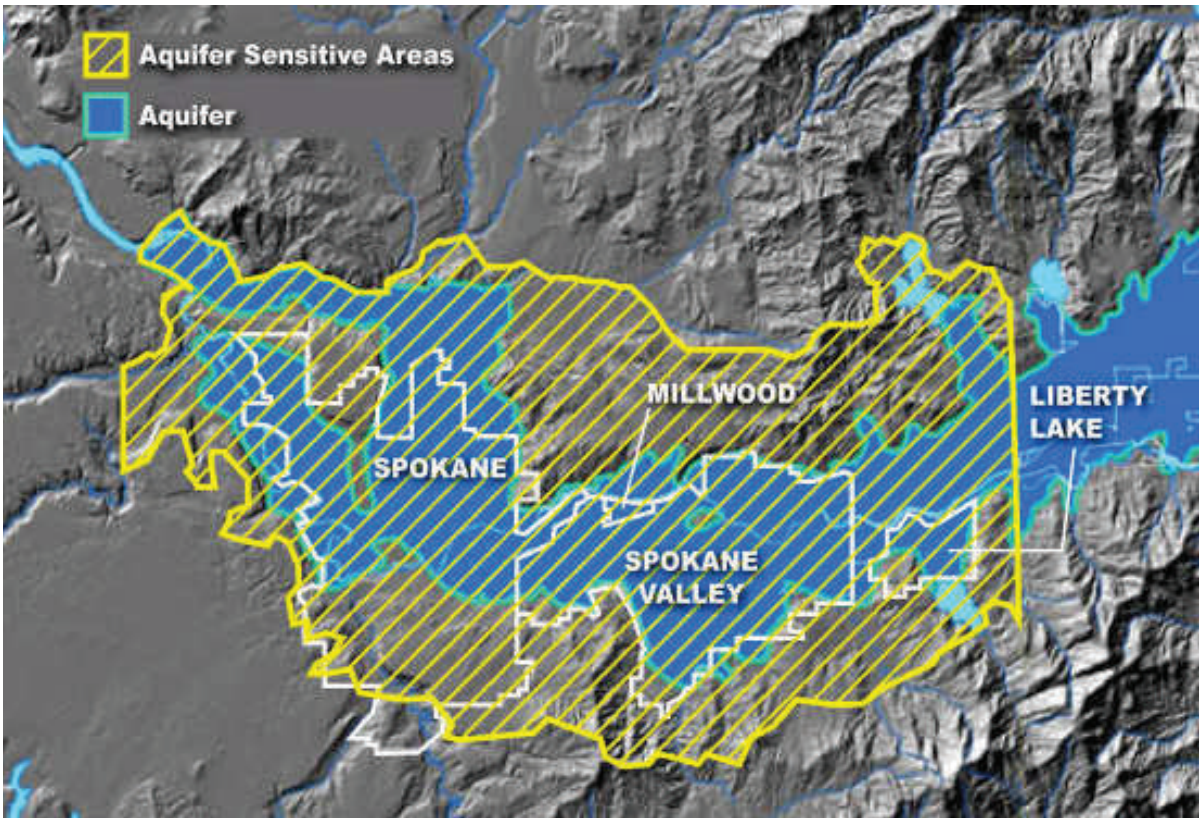
The surface waters of Spokane County include the Spokane River and its tributaries, in addition to smaller streams and lakes. These lakes are located in the southwestern and central eastern portions of Spokane County. Popular recreational area lakes include Medical Lake in the southwest quadrant of the county, Newman Lake and Liberty Lake, located near the east central section of Spokane County, and Eloika Lake along the northern border. In all, lakes cover approximately 5,646 acres of Spokane County.

3.1.3.2 Groundwater

There are four distinct groundwater zones present in Spokane County: (1) the Spokane-Rathdrum Zone, (2) the Sand and Gravel Zone, (3) the Basalt Zone, and (4) the Metacomplex Zone. The Spokane-Rathdrum Aquifer was designated as a sole-source of water supply for the Spokane-Coeur d'Alene area by the United States Environmental Protection Agency (EPA) in 1978.

A designation was established for the area within which activities could affect the aquifer water quality. This aquifer sensitive area (ASA) is illustrated in Exhibit 3-3. Various cities and the County have implemented land use practices with the purpose of protecting water resources affected by their jurisdictions.[iv] Aquifer recharge occurs all along the Spokane River in the eastern Valley where the elevation of the river is above the water surface elevation in the aquifer. There is evidence of aquifer-river interchange downstream from the recharge section to Spokane Falls in the City of Spokane. Because of population growth and increased development, aquifer quality and capacity concerns have developed in the region, making it more difficult to obtain water rights.[v]

EXHIBIT 3-3
Aquifer Sensitive Areas
Spokane-Rathdrum Sole-Source Aquifer



3.1.3.3 Water Quality

Most surface water in Spokane County is considered unfit for domestic use. The water quality is adversely affected by the land-locked conditions of most ponds and lakes, human activity along waterbodies, runoff from agricultural fields, and the discharge of sewage effluent. Furthermore, water quality necessary to sustain fish has become a concern for the Spokane River and its tributaries. The low levels of oxygen, caused by phosphorus discharging or seeping into the rivers, are currently being addressed by Ecology through the establishment of a total maximum daily load (TMDL) of contaminants entering these water bodies. The TMDL will require additional treatment systems at wastewater treatment plants and may place controls on nonpoint sources that contribute to the degradation.

Groundwater is used for drinking supplies. As mentioned previously, the Spokane-Rathdrum Aquifer is the sole-source drinking water supply for Spokane metropolitan areas. Aquifer water quality is currently within federal drinking water regulation standards. However, increased urbanization and human activity affects the water quality, especially because of the permeable soils (sands and gravels) within this area. Spokane County and affected municipalities have programs to connect septic tank systems to sewers, which has brought about improvements to water quality (nitrates and other nutrients) in portions of the Valley.

3.2 Human Environment

3.2.1 Demographics

In 2004, Spokane County had an estimated total population of 432,000, and by 2005, the population increased to 436,300 (see Exhibit 3-4). The County was ranked as the fourth most populous county in Washington State, with about 7 percent of the State's population. Most of the total population is concentrated in the urban and suburban valley, which tends to roughly conform to the boundary of the Aquifer Sensitive Area (ASA). In 2004, the largest city in the county was the City of Spokane with 197,400 residents or 45.7 percent of the county's population and the City of Spokane Valley, located adjacent to and east of Spokane, is second largest at 83,950. Population density decreases sharply in all directions from these two cities. Other cities and towns outside of these metropolitan areas are Deer Park to the north; Liberty Lake and Millwood to the east; Airway Heights and Medical Lake to the west; Cheney to the southwest; and Spangle, Rockford, Fairfield, Waverly, and Latah to the south. Collectively, these other cities and towns comprise approximately 10 percent of Spokane County's total incorporated population. Most of the estimated 116,000 rural residents live throughout the north, west, and southern portions of Spokane County. Fairchild Air Force base, located west of Spokane, has a population of approximately 4,357. The total average population density for Spokane County is less than one person per acre, approximately 247 persons per square mile. These numbers did not change dramatically in 2005.

EXHIBIT 3-4
Spokane County Population[vi]

Jurisdiction	2004 Population	Percent of Total	2005 Population	Percent of Total
Waverly	131	0.03	128	0.03
Latah	204	0.05	212	0.05
Spangle	297	0.07	269	0.06
Rockford	511	0.12	484	0.11
Fairfield	576	0.13	589	0.13
Millwood	1,645	0.38	1,645	0.38
Deer Park	3,045	0.70	3,100	0.71
Medical Lake	4,120	0.95	4,350	1.00
Fairchild AFB	4,357	1.01	4,357	1.00
Airway Heights	4,590	1.06	4,640	1.06
Liberty Lake	4,950	1.15	5,255	1.20
Cheney	9,855	2.28	10,070	2.31
Spokane Valley	83,950	19.43	85,010	19.48
Spokane	197,400	45.69	198,700	45.54
Spokane County Unincorp. (excluding Fairchild AFB)	116,369	26.94	117,491	26.93
Total	**432,000**	**100***	**436,300**	**100***

Long-term population trends for Spokane County are shown in Exhibit 3-5. The County experienced a period of slow population growth and net-outmigration during the 1980s. During the 1990s, population growth was much more rapid before moderating somewhat since 2000. Between now and 2025, growth is forecast to be somewhat greater than what has occurred since 2000, but less than what was experienced in the 1990s. Fairchild AFB's population (those people that live on base) has declined since the last Plan and is expected to decline further in the future (Diane Wulf, 2006).

EXHIBIT 3-5
Spokane County Population Growth and Projections[vii]

	Year	Population	Annual Growth Rate
Historic			
	1980	341,835	
	1990	361,333	0.6%
	2000	417,939	1.5%
	2004	432,000	0.8%
	2005	436,300	0.5%
Forecast			
	2015	496,981	1.3%
	2025	561,627	1.2%

The 2000 Census shows a definite change in the area's core population base, with the outer neighborhoods of the cities of Spokane and Spokane Valley gaining population at the expense of their central downtown counterparts. However, this trend may be reversing because of recent movement among developers to provide residences within the City of Spokane's downtown core, including condominiums, apartments, and lofts located in restored historical buildings as well as new construction.

Ethnically, the county is composed largely of white Americans (approximately 91 percent of the population). Of the 91 percent, approximately 1 percent is of Ukrainian/Russian ancestry. Racial minorities represent approximately 9 percent of the population and are composed as follows: Black - 1.5 percent; American Indian - 1.3 percent; Asian - 1.8 percent; Hispanic - 2.7 percent; and Other - 1.7 percent.[viii]

3.2.2 Economics

3.2.2.1 Industries

The City of Spokane is the second largest city in the state and is a regional transportation, financial, health care, and cultural center for the Inland Northwest (defined to include eastern Washington, northern Idaho, western Montana, northeast Oregon, and southeast British Columbia). The City of Spokane is becoming an area dominated by employment in personal services and government, with a high representation of employment in social services, hospitals, and health. Spokane has evolved into the medical, retail, and services center for the entire Inland Northwest. Both wholesale and retail trades are growing in this area. In addition, technical firms are moving into the area and existing facilities are expanding to accommodate growth in this market.

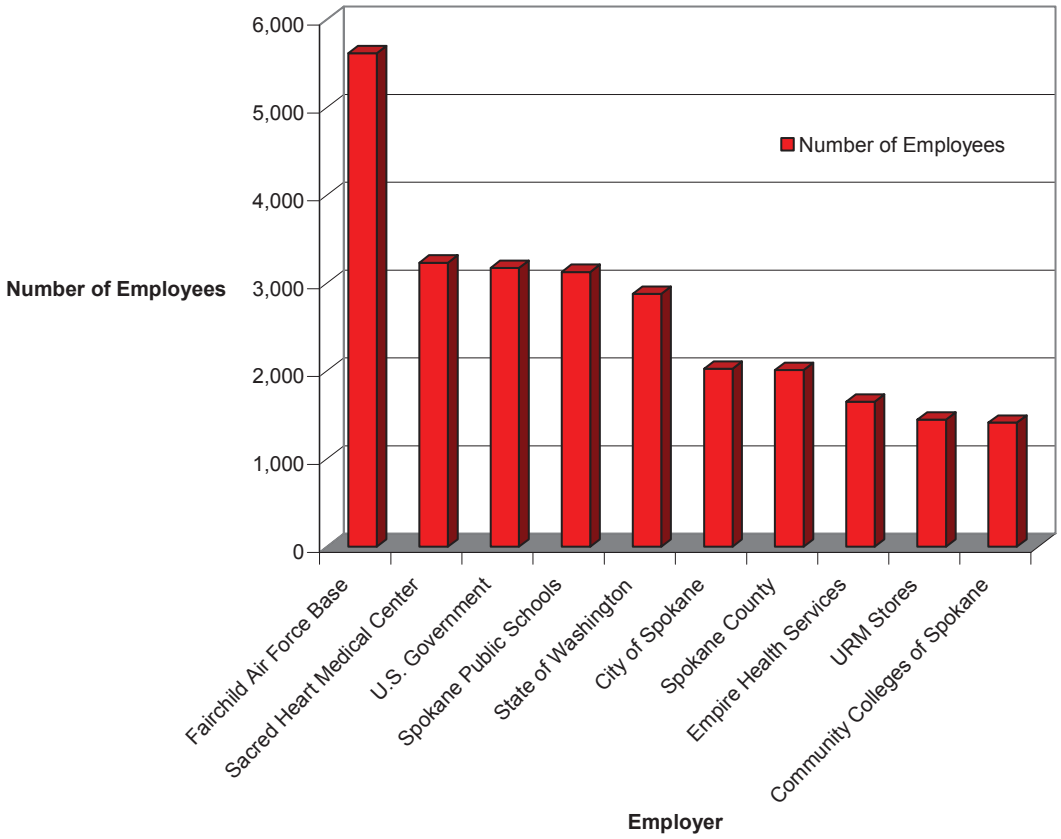
Spokane County supports other large industries including agriculture, wood products, and tourism. Currently, approximately 351,457 acres, or 30.9 percent of the county's land,[ix] is zoned as agricultural land, consisting of both large-tract and small-tract agricultural land. Education also forms a significant part of the county's economic base because of the local universities (Eastern Washington University, Washington State University, Gonzaga University, Whitworth College) and community colleges.

3.2.2.2 Employment

Top Overall Employers in Spokane County

The top employment sectors in Spokane County include federal government agencies (Fairchild Air Force Base and other federal government bureaus), health care services (Sacred Heart Medical Center and Empire Health Services), state and local governments (including Spokane Public Schools), and wholesale grocery distribution (URM Stores). The number of workers retained by each of the top ten employers in the county is shown in Exhibit 3-6. During the recent 5-year period from 1999 to 2004, unemployment as a percent of the labor force averaged 6.2 percent.

EXHIBIT 3-6
Top Employers in Spokane County, 2004[x]



Top Manufacturing Employers in Spokane County

Several manufacturing employers are located in Spokane County. Exhibit 3-7 shows the top manufacturing employers in Spokane County, their associated product or service, and the number of workers they employ.

3.2.2.3 Wages and Income

Over the past decade, the median household income in Spokane County has risen from an estimated $31,624 in 1994 to an estimated $40,306 in 2004, an increase of 27.5 percent. This compares to a state average of $37,947 in 1994 and $50,804 in 2004, representing an increase of 33.9 percent. As of 2004, Spokane County ranks 20th in the State of Washington for median household income.[xi]

EXHIBIT 3-7
Top Ten Manufacturing Companies in Spokane County[xii]

Employer	Product of Service	Number of Employees
Huntwood Industries	Kitchen cabinets	643
CPM Development Corporation	Readymix concrete, asphalt, building materials, gravel, prestress and precast concrete products	600
The Spokesman-Review	Daily newspaper	586
Columbia Lighting	Fluorescent light fixtures	560
Kaiser Aluminum and Chemical Corporation	Aluminum flat-rolled products	550
Itron, Inc.	Meter modules and other communications technology products, as well as peripheral equipment	482
Honeywell Electronic Materials	High-purity metal products and materials for the semiconductor industry	471
Travis Pattern and Foundry, Inc.	Custom irrigation and brass castings, aluminum ingots, high-voltage disconnect switches, steel, others	450
Itronix Corporation	Rugged, wireless laptops and hand-held computers	396
Triumph Composite Systems, Inc.	Composite ducts and floor panels	325

3.2.2.4 Economic Activity Centers and Transportation

The County's primary developed area extends from the City of Spokane metropolitan area to the east along Interstate 90 to the Washington-Idaho border, across the central part of Spokane County. The major commercial uses in Spokane County are centered in the City of Spokane and spread outward, mainly along Division Street to the north and Sprague Avenue to the east. Other commercial activities in the area include large shopping centers in the Spokane Valley and Liberty Lake, and developing activities west of Spokane on the West Plains. Industrial uses are primarily found east of the City of Spokane boundaries between Trent and Sprague Avenues.

There are some large industrial developments to the north in the Mead area (closed Kaiser Aluminum site), west in the West Plains area and east of Division Street. Furthermore, Fairchild Air Force Base employs thousands of people who travel from the base to other areas in Spokane County on State Route 2, and contributes to the economic vitality of the region.

There are several organizations that provide transportation and economic development planning. The Spokane Regional Transportation Council (SRTC) is the federally designated Metropolitan Planning Agency for Spokane County. The Spokane Economic Development Council (EDC), the Spokane Regional Chamber of Commerce and the Spokane Valley Chamber of Commerce promote and support economic development in the community. Currently, there is no port district in Spokane County.

Spokane County's existing transportation system is composed of roadways, public transportation, trucking, air, and rail and bus lines. These modes of transportation accommodate both the movement of goods and personal travel. A map of the major transportation network is provided in Exhibit 3-1.

Interstate 90 is the only designated freeway in Spokane County. It provides major east-west transportation through Spokane County and acts as an interregional connector. Highways also provide interregional connection and access to abutting areas. State Route (SR) 2, west through Airway Heights, and SR 290 (Trent Road) provide major east-west highway transport. SR 2 north also provides major transport to northern areas of Spokane County and Mount Spokane. SR 395 serves the northern part of the county (Deer Park), and SR 195 passes through Spangle, south of Spokane. A north-south freeway is under construction that will eventually tie into I-90 in the south, and SR 2 and SR 395 to the north. SR 27 runs south from Opportunity and provides the major route to Rockford, Fairfield, and Latah, all in the southeast quadrant of Spokane.

The county is served by several small-sized airports in addition to larger airports at the Spokane International Airport, in the west portion of Spokane County, and Felts Field, in the Spokane Valley. Burlington Northern Railroad serves the county and handles all types of commodities; rail passenger service is provided by Amtrak. Greyhound is the largest bus service available. Numerous trucking firms provide inter- and intra-state hauling services. No ship or barge facilities are available because of the county's inland location.

[i] Unless noted otherwise, information referenced in this section was provided by the System or the 1998 Plan.
[ii] NOW Data-NOAA Online Weather Data, Spokane International Airport, http://www.weather.gov/climate/xmacis.php?wfo=otx.
[iii] Ibid.
[iv] Spokane Aquifer Joint Board website, http://www.spokaneaquifer.org/index.htm.
[v] Ecology's website, http://www.ecy.wa.gov/programs/wr/rights/water-right-home.html.
[vi] Market Fact Book, *Journal of Business*, 2005 and 2006. *Due to rounding, the Percent of Total figures might not add to 100 percent.
[vii] Washington State Office of Financial Management.
[viii] Washington State Yearbook, 2005.
[ix] County Planning Department, December 20, 2005.
[x] Spokane County Economic Development Council, 2004.
[xi] State of Washington OFM, 2005.
[xii] Spokane County Economic Development Council, 2005.

SECTION 4

Source Reduction

4.1 Introduction

This section describes existing waste reduction practices, identifies key issues with respect to waste reduction, and presents alternatives and recommendations that will help meet waste reduction goals. Unless noted otherwise, information referenced in this section was provided by the Spokane Regional Solid Waste System (System) for the calendar year 2004, or the 1998 Plan. Furthermore, all data is from 2004, the most recent and complete data available.

All solid waste activities and programs are interrelated. Waste reduction, reuse, and recycling programs impact issues that need to be considered for solid waste disposal. Many of the waste reduction programs described in this chapter are integrated with reuse and recycling programs, which may also be described in Section 5.

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 environmental problems associated with waste disposal. Reusing a grocery bag, buying materials in bulk, and reselling unwanted items are typical examples of waste reduction.

Spokane County has established the following objectives for waste reduction:

- Reduce disposal through waste reuse or reduction.
- Reduce the amount and toxicity of waste material that is discarded, either by reusing materials or avoiding its generation.
- Support the implementation of waste reduction measures on the state and national levels, and promote such measures on a local level.

A number of laws apply to waste reduction and recycling in Washington State. They can be found primarily in the Revised Code of Washington (RCW), Sections 35.21, 36.58, 70.93, 70.95, and 81.77.

4.2 Existing Conditions

The majority of publicly provided waste reduction programs are provided by the System, whose efforts support initiatives countywide. This section provides descriptions of System programs as well as partnerships with others, documents System waste reduction staffing levels, and provides information on other waste reduction programs conducted by Spokane County municipalities and Fairchild Air Force Base.

4.2.1 Regional Waste Reduction Programs

Government and private entities support waste reduction programs and activities throughout Spokane County.

4.2.1.1 System Programs

The System provides an integrated waste reduction program that focuses on five main areas: school and youth education; public outreach; coalitions with other entities; business and institution education; and home composting. The System sponsors waste reduction and recycling education programs as well as working in coalition with other environmental entities in Spokane County.

School and Youth Education

Public and Private Schools

Since 1989, the System has sponsored assembly and classroom programs for the school population. The programs are accompanied by student take-home pieces and teacher curriculum materials. These System assembly programs have lessened since their inception because of the difficulty of scheduling these programs in schools. Little time is available in school curriculums for additional educational programs sponsored outside of the schools.

During 2004, 29 classroom presentations were made to a total of 1,182 students and other individuals. Attendees ranged from pre-school children to adults, to whom a variety of solid waste, recycling, waste reduction, and composting topics were introduced.

Youth Publications

Kids enviro page and ***Recycling RAP*** are companion publications produced by the System during the school year. The System's full-page ***kids enviro page*** provides information on waste reduction, reuse, and recycling. Monthly topics have included Glass Recycling, Compost Critters, America Recycles Day Contest, and RRR for the Holidays. ***Kids enviro page*** is a page in the school newsletter, ***Kids News***, published ten times during the school year and sent home with approximately 38,000 elementary school children throughout Spokane County. *Recycling RAP* provides supplemental information and is distributed countywide two to three times a year to 3,000 elementary school teachers to assist educators with environmental education integration.

Other Youth Activities

In addition to classroom presentations and support of all school programs that promote waste reduction, reuse, and recycling, presentations are given to Boy and Girl Scouts, Campfire USA, Washington State Department of Ecology (Ecology) Youth Corps, child care programs, church youth groups, homeschool groups, and other youth venues, such as Mobius Children's Museum. Furthermore, the System's educational tour program at the WTE Facility is available for interested teachers and groups. The tour program emphasizes waste reduction and recycling. The System is planning to include related curriculum materials and bus transportation to the WTE facility tours.

4.2.1.2 Public Outreach

Brochures

The System produces numerous brochures, which are distributed through a variety of means. The contents cover general waste reduction, reuse, and recycling activities: mulching, composting, curbside recycling, use of System facilities, household hazardous waste, plastics recycling, and private drop-off recycling opportunities. These brochures are made available to all municipal and county facilities and offices, as well as mailed to residents on request. They are also distributed at fairs and at various public facilities, such as public libraries.

Publications

- A *Buy Recycled Materials Directory* is being developed, which will be used to encourage the purchase of recycled products or products made from recycled materials (rather than encouraging consumers to buy non-recycled products that may be perceived as being more convenient and less costly). This information, provided to the general public and businesses, encourages markets for recycled products.

- *One Man's Trash* is a four-page quarterly newsletter distributed as an insert in local newspapers (including *The Spokesman-Review* and *The Northwest Inlander)* and placed at regional public venues. Produced quarterly, 80,000 copies are published in January, April, July, and October 2004. *One Man's Trash* is published by Eco Partners, Inc., and is customized for the Spokane community. Half of the paper is specific to Spokane, and the other half contains universal solid waste information relevant to communities across the nation. Local articles are prepared and submitted to Eco Partners by System staff. Classroom sets and a curriculum guide are available to interested teachers.

- The *Recycling and Garbage Guide* was developed in 2004 for inclusion in the QwestDex telephone book. This supplement is comprised of twelve pages of comprehensive information on waste reduction, reuse and recycling, disposal facilities, and education and outreach programs. Circulation covers approximately 350,000 homes in the Spokane area, providing a reliable in-home information resource.

- *The House That Recycling Built* is a popular publication listing recycled-content building material that can be purchased in the Spokane area. The tri-fold brochure lists materials alphabetically from asphalt to wallboard with the location and/or contact information of the business. Businesses that sell used building materials are also provided. The list is dynamic and constantly changing as staff updates the list.

Recycling Hotline

The Spokane Regional Recycling Hotline provides information and technical assistance to residents and businesses about waste reduction and recycling programs and other solid waste questions.

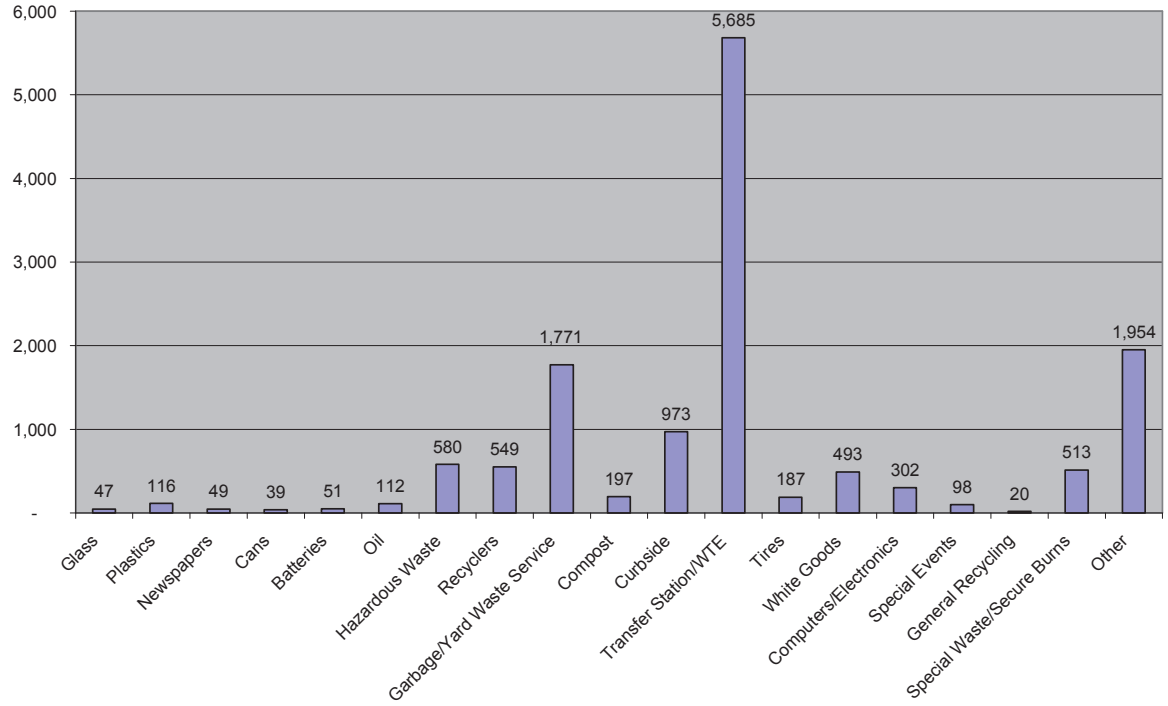
The Hotline has been in operation since March 6, 1989, and has responded to nearly 179,500 calls from County residents, an average of one call every ten minutes. In 2004, approximately 13,700 calls were received on a variety of subjects, as shown in Exhibit 4-1. Calls are received year-round, usually peaking in the spring. The majority of calls concern Transfer Stations and the WTE Facility.

Waste reduction information is provided as appropriate. Many inquiries concern recycling methods, locations and materials, and hazardous and special wastes, from households and businesses. Regulatory and technical questions are directed to the appropriate agency. The Recycling Hotline is another example of the integrated nature of solid waste management programs.

The calls result in mailings of thousands of brochures annually, containing information on waste reduction, recycling and other aspects of Spokane's integrated regional solid waste system. One of the most popular requests is for the "Home Composting" brochure. The Hotline is promoted regionally, and is advertised in newspapers, the Yellow Pages, brochures, and print and video new releases.

EXHIBIT 4-1

2004 HOTLINE - NUMBER OF CALLS PER CATEGORY (13,736 TOTAL CALLS)



Advertising

The System places advertisements to promote waste reduction and recycling programs in *The Journal of Business, The Spokesman-Review, The Fig Tree, Out There Monthly* (and its *Go Green Directory*), *The Northwest Inlander,* and other regional periodicals whenever opportunities present themselves.

Booths at Fairs

The System sponsors booths at local fairs including the Home and Garden Show and Home Idea Show. The System in 2002 unveiled a new display, "Putting the Pieces Together," to demonstrate the integrated structure of solid waste operations and programs in Spokane County. "Putting the Pieces Together" is updated annually and a companion brochure was developed. A table-top version of the display has been created for smaller venues.

World Wide Web Home Page

The System maintains a home page on the Internet (www.solidwaste.org). Users can find general information about waste reduction, recycling, and new programs and services. This website is updated regularly to provide current information about waste reduction events and opportunities. The site was significantly revised in 2006.

www.2good2toss.com

2good2toss is a statewide materials exchange website. The goal of the website is to divert used household items and building materials from disposal. Numerous cities and counties throughout the State administer individual websites for their specific jurisdiction. The System administers the Spokane County website. Use of the website is free to promote the reuse of used but still useful materials that do not have a high enough value to justify placing in a paid advertisement. Spokane County residents who have registered on the site can post low value household items or building materials for free, exchange, or sale up to $99.00.

The System subscribes to the service through i-WasteNot Online Resource Recovery Systems (www.i-wastenot.com), who provided initial site setup and maintains the technical maintenance requirements. Ecology provides overall facilitation among the participating administrators. Between the February 2004 inception of Spokane's 2good2toss website and the end of that year, registration grew to 700 members and diverted approximately 55,722 pounds of material to reuse rather than to disposal. This represented a direct savings to residents of $2,730 in disposal costs. Comments from the community about this popular program have been very supportive. By 2006, twenty Washington cities and/or counties had subscribed to the service.

4.2.1.3 Education and Outreach Programs in Coalition with Other Entities

The System is also involved in many programs with other government and business entities promoting waste reduction and sustainable lifestyle choices.

Spokane Youth Environmental Conference

The Spokane Youth Environmental Conference is attended by middle and high school students selected to share their environmental science research projects through either oral presentations or a poster session (http://www.syec.org). The System works in partnership with other local agencies such as Spokane County Air Pollution Control Authority (SCAPCA), Spokane County Water Quality Program, Ecology, Spokane County Conservation District, Educational Services District #101, Spokane County Environmental Health, and Avista Utilities by providing staff time and printing services. Regional educators are encouraged to incorporate environmental education into their curriculums by involving their students in this competitive event. Business sponsors are solicited to donate cash rewards for student presentations and school science departments.

The Green Zone

The Green Zone, established in 1996, is a public learning center that demonstrates positive options for creating more sustainable lifestyle choices in businesses, at home, and at play. The Green Zone is located in Spokane at 222 N. Havana, between the Spokane County Conservation District and WSU Spokane County Extension. Others involved include: Spokane County Air Pollution Control Authority, Spokane County Water Quality Program, Spokane Neighborhood Action Program, Washington Fish and Wildlife. System

involvement has included purchase and installation of display materials such as recycled-material benches and signage, staff time, and print materials. The Master Composter home demonstration site is also located at the Green Zone and is used during events such as fall mini-workshops that offer Master Composter presentations.

Both public participation grants from Ecology and donations from many businesses and agencies have funded the Green Zone. More information about the Green Zone is available at www.thegreenzone.org.

4.2.1.4 Business and Institutional Education

Waste Reduction Assessment Program

The Waste Reduction Assessment Program (WRAP) offers waste stream assessments to businesses and institutions interested in reducing their disposal costs and increasing their recycling efforts. Because almost 30 percent of the total tipping weight in Spokane County is from commercial accounts, this is a key activity in reducing the amount of waste generated. The success of the program can be credited to those individuals and businesses that have followed WRAP recommendations for implementing or improving their waste reduction and recycling programs.

Pacific Materials Exchange (PME), under contract to the System, provides business waste assessments upon request to any businesses in Spokane County. The assessments identify waste reduction, reuse, and recycling opportunities that can result in significant savings in disposal costs. There is no charge for this service, which includes an on-site consultation, informative literature, and a waste stream analysis. Once the information is gathered, a detailed report and waste reduction plan are provided to the business. All information is confidential. Adoption of the recommendations is voluntary on the part of the business/institution.

The assessment program actively solicits clients by contacting all new business license applicants. A brochure is sent to them outlining the services of WRAP, along with contact information on other services provided by the System and private recycling services. Additional contacts are identified through the Recycling Hotline, newspaper articles, utility bills, responses to introduction letters sent to the various businesses published in the annual *Book of Lists* (produced by the Journal of Business), and by word of mouth.

Three different levels of assessment services are provided:

- Level I assessments consist of providing a general information packet. As a means to increase participation, the assessments are offered to City of Spokane Building Department pre-development conference attendees.
- Level II assessments involve an onsite inspection of business operations, evaluation of data, and a report. The report outlines collected information, estimates potential savings, and identifies available recyclers and markets.
- Level III assessments are similar to Level II assessments with the addition of an in depth onsite waste analysis of the businesses' disposed and recycled materials.

The *Work Site Recycling Manual* is also distributed and provides a step-by-step guide for establishing waste reduction and recycling practices in the workplace.

In 2004, WRAP sent information on the program's services to over 1,426 companies (an 11 percent increase over 2003), and performed 91 assessments. The weight of materials diverted from disposal as a result of WRAP services in 2004 was conservatively estimated at 12,777 tons. Exhibit 4-2 shows the number of assessments performed by business category.

EXHIBIT 4-2
Waste Assessments Performed by Business Category
(January 1993 - December 2004)

Agriculture	3
Arts/Crafts/Theater	4
Auto Repair	8
Construction	19
Food Processor	4
Hotel	40
Manufacture	35
Medical/Dental	56
Office	489
Paint/Coatings	2
Photo Finishing	3
Printing/Graphics	15
Restaurants-Fast Food	45
Restaurants-Sit Down	84
Retail/Wholesale	99
School	45
Government	30
Total	**981**

Source: *Spokane Regional Solid Waste System, 2005*

WRAP has strengthened the bottom line of businesses and institutions in Spokane County since 1993 by providing technical waste reduction assistance and developing common sense waste reduction programs.

Assessment demonstrations were presented and/or performed at special events, including the following in 2004 (Spokane Regional Solid Waste System, 2004 Annual Report):

- Gonzaga University, as part of Earth Day celebrations.
- SHIP, a division of Spokane Neighborhood Action Program (SNAP), presentation to thirty-two (32) building maintenance and personnel managers.
- Energy Festival in Walla Walla, Washington (two talks on sustainability plus the Business Waste Assessment Program).

4.2.1.5 Business Waste Reduction Coalitions with Other Entities

System and WRAP staff work collaboratively with area organizations to further business waste reduction education and practices.

U.S. Green Building Council

The Spokane branch of the National Green Building Council's Cascadia chapter was formed in 2005. The chapter was formed by reorganizing The Resource Efficient Building and Remodeling Council (REBAR), a coalition of agencies and private businesses (architects, designers, builders, haulers, and recyclers) dedicated to furthering resource-efficient building practices in the construction industry.

The Cascadia chapter promotes the design, construction and operation of buildings that are environmentally responsible, profitable, and healthy places to live and work in Oregon, Washington and British Columbia. Incorporated as a 501(c)(3) charitable organization in December 1999, Cascadia is one of two original chapters of the U.S. Green Building Council (https://www.usgbc.org/).

Northwest EcoBuilding Guild - Inland Chapter

The Northwest EcoBuilding Guild (http://www.ecobuilding.org) is an association of builders, designers, homeowners, tradespeople, manufacturers, suppliers, and others interested in ecologically sustainable building. This 136-member organization promotes sustainable building ideas, techniques, and theories. Presentations and tours are sponsored by the group throughout the year.

4.2.1.6 Home Composting

Master Composter Program

The Spokane Master Composter Program began in 1988. Since then, approximately 204 Spokane County residents have received Master Composter training. In return for their training, Master Composters agree to donate at least 40 hours of their time to help others begin composting. These volunteers staff displays and hands-on activities at events such as Compost Fairs, Chipping Days, and various home and garden shows. They also give presentations to service groups, students, and garden clubs.

Training

Master Composter training sessions are held annually in April. Eleven new Master Composters were trained in 2004, and the current mailing list contains 95 names. Many Master Composters remain active long after they have fulfilled their 40-hour obligation. About 40 Master Composters regularly participate in community composting activities, accounting for about 513 volunteer hours in 2004.

Compost Fairs

Two major Compost Fairs are held each year at the John A. Finch Arboretum, during the Arbor Day festivities and the Fall Leaf Festival. These events are set up with hands-on stations. As participants move through the stations, Master Composters demonstrate how to combine compostable materials, turn a compost pile, compost kitchen vegetable waste with red worms, and build or buy various types of bins. Participants also view "Spoils to Soils," an informative video on home composting. In 2004, these Compost Fairs attracted 800 attendees and 400 bins were distributed (one per household).

Master Composters also participate in collaborative events with other entities. The Chipping Day event is a great way to publicize combined messages on exploring non-burning options of handling the natural vegetation generated by homeowners in rural areas of the County. When a grinder is available, participants can bring in woody debris to be ground then taken back home for mulch. Activities include burn barrel turn-ins and fire safety instruction. Home compost bins are also distributed. Chipping Days are held in collaboration with Spokane County Air Pollution Control Authority (SCAPCA) and the Department of Natural Resources (DNR). Usually, two events are held each year, one in the northern portion of the county, and one in the southern portion of the county.

Other Activities

In continuing education, the Master Composter program includes presentations with updated information on clopyralid, compost tea applications, and vermiculture (information on worm composting and its importance in waste reduction). Furthermore, the Master Composter "Leaf Letter" is published to provide regular activity updates and volunteer scheduling for Master Composters.

Grasscycling

The System provides grasscycling information to the public through brochures and a video as part of the program for reducing organic waste disposal within the County. Grasscycling consists of lawn care techniques that reduce the amount of lawn clippings to be disposed. By using a mulching mower or mowing more frequently with a conventional mower, lawn clipping can be left on the lawn rather than having to be bagged and thrown away.

4.2.2 System Staffing Levels

Successful delivery of local government waste reduction programs requires devoting an appropriate amount of resources, including staffing. The System has demonstrated its commitment to waste reduction by assigning the following staff to System waste reduction and recycling programs:

- The recycling coordinator has overall responsibility for waste reduction/recycling activities and programs. This position administers planning, development, implementation, and management of regional waste reduction and recycling programs, including bid specifications and proposals, grant proposals and administration, and community liaison and education.

- The solid waste education coordinator oversees the public education waste reduction and recycling programs providing education to youth, the public, and businesses, distributing brochures, making classroom presentations, supervising the WTE tour program, managing development of assembly programs, and publishing the "Recycling RAP" and "kids enviro page."

- The public information coordinator maintains dialogues with regional media resources and creates and prepares materials for public information outreach including press releases, print and electronic ads, public presentations, and webmaster of the System's new www.solidwaste.org website.

- The hotline operator responds to solid waste questions by phone, email and regular mail from residents and businesses throughout the region.
- Waste to Energy tour guides provide guided tours to school groups and the public at the Waste to Energy facility.

In total, the System has four full-time and two part-time staff assigned to waste reduction and recycling program development and implementation. The System contracts with private providers to fulfill specific program responsibilities such as the WRAP program.

4.2.3 Other Waste Reduction Programs

The Spokane Regional Solid Waste System is a regionally focused department. All cities and the unincorporated county areas use System-produced information, brochures, literature and other advertising and promotional materials for waste reduction and recycling programs. The location of the System facilities and the implementation of System programs are designed to serve the needs of the entire county (for example, the WRAP contractor provides waste assessments in all cities and the unincorporated county areas). The System also helps to develop customized waste reduction and recycling information and programs. Fairchild Air Force Base and some cities in the county have also developed individualized local programs that are devoted to promoting waste reduction. All of the programs integrate waste reduction with reuse and recycling information and activities, and are further described in Section 5, Recycling.

Rate Incentives

One of the most important ways to promote waste reduction is to have a garbage rate structure that rewards the customer for reducing the amount of garbage produced. Most collection services in Spokane County include some form of rate incentive. Depending on the collection service, residents save $3 to $10 per month if they change their service from two cans/carts per week to one can/cart per week. Most residents also have the opportunity to sign up for a 20-gallon mini-cart service, which is $2 to $3 per month less than for the larger cart. For example, 2004 rates for cart service within the City of Spokane were as follows: 20 gallons = $11.19; 32 gallons = $14.46; 68 gallons = $22.32; and 95 gallons = $30.18. Commercial customers can reduce their garbage bills by requesting service less frequently or by switching to a smaller sized container. (More information on solid waste collection rates can be found in Section 6, Collection.)

4.2.3.1 Municipal Programs

Most cities in the County rely on educational materials provided by the System, and some supplement those materials with other initiatives and educational programs.

City of Airway Heights

Airway Heights promotes the use of composting and recycling facilities, but it does not operate its own facilities. Instead, residents utilize System facilities and programs.

City of Cheney

The City of Cheney operates the Cheney Recycling Facility for its residents. The facility is staffed by one full time Recycling/Solid Waste Operator. The Cheney Recycling Facility

distributes waste reduction information produced by the System, as well as other information specific to its operation.

City of Deer Park
The City of Deer Park has a display rack at City Hall, offering brochures provided by the System on waste reduction and recycling.

City of Liberty Lake
The City of Liberty Lake City Hall distributes System waste reduction and recycling brochures.

City of Medical Lake
The City of Medical Lake operates a drop-off recycling and yard waste facility for its residents. Neither facility is manned with City staff, however, they are located near the City maintenance shop so a city employee is available to answer questions or provide some assistance. The staff distributes System brochures, including those on waste reduction. They have a brochure holder in the lobby area of City Hall with solid waste management brochures available to the public. Medical Lake plans to purchase a weather-resistant brochure holder to distribute information when the facility is unstaffed.

On occasion, Medical Lake distributes waste reduction and recycling information, such as tips or issues/concerns, with its utility bills. Also, Medical Lake posts a number of signs around the recycling facility and the composting facility with regulations and guidelines.

City of Spokane
The City of Spokane distributes System waste reduction information at Spokane City Hall, Spokane public libraries, neighborhood centers, and other Spokane municipal facilities. Waste reduction information is also printed on utility bills.

City of Spokane Valley
The City of Spokane Valley City Hall distributes brochures provided by the System on waste reduction and recycling.

4.2.3.2 Fairchild Air Force Base

At Fairchild Air Force Base, source reduction is featured in a number of educational materials targeted to base personnel. Periodic newspaper articles in the base paper discuss various waste reduction and recycling issues. The base has established a pallet reuse program that continues to reduce the number of pallets which otherwise would have been disposed as solid waste. In addition, the base operates a moving box program that promotes the reuse of moving boxes for this very transient community.

The base Recycle Center operates a household hazardous material exchange shelf during normal business hours. This recycle-through-reuse program is designed to reuse household hazardous products. Residential customers can bring in usable materials (for example, paints, household cleaners, car care products, woodcraft stains and oils, and automotive fluids), which are kept on the exchange shelf at the Center. In turn, individuals in need of such products can pick up these items. This program reduces the improper disposal of household hazardous materials.

4.3 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 in the hierarchy for managing solid waste and is therefore an important element in this solid waste management plan. Several key issues surround waste reduction.

4.3.1 Product Stewardship

Economic prosperity has increased per capita spending on consumer products over the past several years and increased the need for local governments to provide expanded recycling and disposal programs.

Product stewardship is a concept designed to alleviate the burden of end-of-life product management on local governments. Product stewardship is a product-centered approach that emphasizes a shared responsibility by all affected parties for reducing the environmental impacts of products during their manufacture, use, reuse, recycling, and eventual disposal.

- Manufacturers: Reduce use of toxic substances; design for durability, reuse, and recyclability; and take increasing responsibility for the end-of-life management of products they produce.
- Retailers: Use product providers who offer greater environmental performance; educate consumers on environmentally preferable products; and to enable consumers to return products for recycling.
- Consumers: Make responsible buying choices that consider environmental impacts; purchase and use products efficiently; and recycle the products they no longer need.
- Government: Launch cooperative efforts with industry; use market leverage through purchasing programs for development of products with stronger environmental attributes; and develop product stewardship legislation for selected products.

There is no single strategy for implementing product stewardship practices. Each product uses different resources, has different environmental impacts, and has different distribution and collection needs. The principles of product stewardship have been widely accepted by product stewardship proponents throughout the United States.[i] The principles are included here, with some editing to reflect Spokane County interests and circumstances.

- Responsibility: The responsibility for reducing product impacts should be shared among industry (designers, manufacturers, and retailers of products or product components), government, and consumers. The greater the ability an entity has to minimize a product's life-cycle impacts, the greater is its degree of responsibility, and opportunity, for addressing those impacts.
- Internalize Costs: All product lifecycle costs—from using resources, to reducing health and environmental impacts throughout the production process, to managing products at the end-of-life—should be included in the total product cost. The environmental costs of product manufacture, use, and disposal should be minimized, to the greatest extent possible, for local and state governments, and ultimately shifted to the manufacturers and

consumers of products. Manufacturers should thus have a direct financial incentive to redesign their products to reduce these costs.

- Incentives for Cleaner Products and Sustainable Management Practices: Policies that promote and implement product stewardship principles should create incentives for the manufacturer to design and produce "cleaner" products—ones made using less energy, materials, and toxics, and which result in less waste (through reduction, reuse, recycling, and composting) and use less energy to operate. These policies create incentives for the development of a sustainable and environmentally sound system that collects, reuses, and recycles products at the end of their lives.
- Flexible Management Strategies: Those that are responsible for reducing the health and environmental impacts of products should have flexibility in determining how to most effectively address those impacts. The performance of responsible parties should be measured by the achievement of goal-oriented results.
- Roles and Relationships: Industry should provide leadership in accomplishing these principles by implementing programs and developing markets. Government should provide leadership in promoting the practices of product stewardship through procurement, technical assistance, program evaluation, education, and agency coordination. Government should also address regulatory barriers and, where necessary, provide regulatory incentives and disincentives. Consumers should take full advantage of information provided by industry and government to make responsible environmental purchasing, reuse, recycling, and disposal decisions. If markets are not available, program implementation options should be considered by all parties involved.

4.3.2 Procurement

Local, state, and federal government, and businesses can and do use their tremendous purchasing power to influence the products that manufacturers bring to the marketplace. In the last decade or so, most efforts have focused on encouraging procurement of products made from recycled content. The goal of these procurement programs is to create viable, long-term markets for recovered materials. The Environmental Protection Agency (EPA) has developed a list of designated products and associated recycled-content recommendations for federal agencies to use when making purchases. These are known as Comprehensive Procurement Guidelines.

More recently, efforts have expanded beyond buy-recycled programs and policies to "Environmentally Preferable Purchasing" (EPP). Environmentally preferable products typically are defined as products that have a lesser or reduced effect on human health and the environment when compared with competing products that serve the same purpose. They include products that have recycled content, reduce waste, use less energy, are less toxic, and are more durable. Federal agencies are now encouraged to consider a broad range of environmental factors in purchasing decisions.

4.3.3 Internal Waste Reduction Policies

In addition to educating consumers and businesses, it is important for local governments and businesses to "practice what they preach." Employees who are encouraged to learn more

about waste reduction practices can work toward implementing and promoting those practices in the workplace and at home.

4.3.4 Education Programs

Waste reduction education, for both residents and business, continues to be an important element in solid waste planning. Messages stress increasing product life, choosing reusable and durable products, selecting products with less packaging, decreasing product consumption, more efficient use of resources, finding reuse opportunities, using alternative products that create less waste, and reducing product toxicity.

4.3.5 Business Waste/Materials Exchanges

Disposing of waste has become more expensive for businesses. A business can often prevent waste from being generated through product or process changes. However, waste that cannot be eliminated may have a use in another process or another facility.

Waste exchanges, both public and private, can offer opportunities for businesses to handle waste that cannot be eliminated or reused within the company. Materials exchanges are available for residents to use as well.

Materials and waste exchanges are not new. The concept began in Europe and spread to North America in the late 1970s. Pacific Materials Exchange began operating as a waste exchange in Spokane County in 1989 and has since diversified into other waste reduction activities, primarily waste assessments through the WRAP program. The System currently administers an online household materials exchange at www.2good2toss.org. A waste exchange acts as a liaison between waste generators and potential users of that waste. Some exchanges are operated by states or local governments; others are wholly private, for-profit businesses. Exchanges vary in terms of area of service and the types of commodities exchanged. In general, *waste exchanges* tend to handle hazardous materials and industrial process waste while *materials exchanges* handle nonhazardous items.

Increasingly, waste exchanges are making use of the internet to create online databases and eliminate printed catalogs. Private exchanges frequently share information with one another, such as subscriber lists, materials wanted or available, and other data.

4.4 Waste Reduction Alternatives

Product Stewardship

1. Develop partnerships with private sector organizations to provide reuse and recycling options for select products.
2. Use purchasing power to encourage product stewardship.
3. Support product stewardship efforts.

Procurement

4. Use purchasing power to influence markets for recovered materials.

5. Incorporate environmental performance into purchasing decisions.

Internal Waste Reduction Practices

6. Implement in-house waste reduction programs and practices.

Waste Reduction Education

7. Continue waste reduction education programs.
8. Provide financial assistance for private waste reduction efforts.
9. Provide recognition for waste reduction successes.

Waste/Materials Exchanges

10. Continue administration of waste/materials exchange.
11. Promote private waste exchanges.

4.4.1 Product Stewardship

There are several reasons product stewardship should be promoted:

- Reduced product toxicity.
- Increased resource conservation.
- Reduced cost for waste management programs.

1. Develop partnerships with private sector organizations to provide reuse and recycling options for select products.

Often, recycling programs are developed and funded by local governments. Using the principles of product stewardship, local governments could develop partnerships to encourage retailers or other private sector organizations to accept responsibility for collecting and recycling certain products. The Take It Back Network is an example of a program involving a partnership between local retailers, recyclers, and government to accept specific products for recycling, such as electronics. The program is being successfully implemented in other parts of the State and could be developed in Spokane County.

A recent pilot study with the retail chain Staples was conducted to evaluate the feasibility of reversing the existing distribution system for electronics.[ii] For the project, used computers were collected at Staples' retail stores, backhauled by Staples' carriers and consolidated at its distribution and fulfillment centers, then transported by Staples' trucks to an electronics recycler. The study concluded that the program was logistically feasible, was well received, and many costs could be offset by charging a fee to users.

2. Use purchasing power to encourage product stewardship.

The principles of product stewardship, discussed earlier, advocate that a role of government is to provide leadership in promoting the practices of product stewardship through procurement. Environmentally Preferable Purchasing (EPP) is a practice that can be used to fulfill this role. EPP involves purchasing products or services that have reduced negative effects on human health and the environment when compared with competing products or

services that serve the same purpose. Local governments could develop purchasing policies that encourage environmentally sound products and restrict contracts to these products. This strategy represents a way local governments can share responsibility for the environmental impact of products.

EPP criteria can be developed for a wide range of products, from cleaning products to office paper. For example, EPP criteria could be developed for computers and electronics (such as CPUs, monitors, keyboards, printers, fax machines, and copiers), which could include:

- Compliance with federal Energy Star guidelines.
- Reduced toxic constituents in product.
- Reduced toxic materials used in manufacturing process.
- Recycled content plastic housing.
- Pre-installed software and on-line manuals.
- Designed for recycling/reuse.
- Upgradeable/long life.
- Reduced packaging.
- Manufacturer provides product take-back service.
- Manufacturer demonstrates corporate environmental responsibility.

Implementing an EPP program for computers can also result in the purchase of computers with lower operating costs, extended useful lives and reduced disposal costs for local government.

3. Support product stewardship efforts.

Resolutions by local governments requiring industry to take more responsibility for products and packaging will likely have little effect. Government resources can be more effectively used by supporting efforts currently underway across the United States to promote the principles of product stewardship. For example, local governments could partner with the Product Stewardship Institute (PSI), a national non-profit membership-based organization located in Boston, Massachusetts. PSI is leading product stewardship efforts by working with state and local government agencies to partner with manufacturers, retailers, environmental groups, federal agencies, and other key stakeholders to reduce the health and environmental impacts of consumer products. PSI takes a product stewardship approach to solving waste management problems by encouraging product design changes and mediating stakeholder dialogues.

PSI currently is involved in the numerous priority product categories: carpet, electronics, gas cylinders, mercury products, paint, pesticides, radioactive devices, tires, and pharmaceuticals.

4.4.2 Procurement

4. Use purchasing power to influence markets for recovered materials.

The federal government has undertaken various initiatives to include the environment in its purchasing decisions. EPA's Comprehensive Procurement Guideline program provides guidance to help federal employees purchase products that use materials recovered through recycling.[iii]

EPA has already designated or is proposing to designate the products listed in Exhibit 4-3, and has developed recycled-content recommendations. Local Spokane County governments could draw upon the extensive work completed by EPA and include these guidelines in purchasing policies.

EXHIBIT 4-3
Federal Procurement Guidelines

Construction Products	
Designated	***Proposed***
Building insulation products Carpet (polyester) Carpet cushion Cement and concrete containing: - Coal fly ash - Ground granulated blast furnace slag - Cenospheres - Silica fume Consolidated and reprocessed latex paint Floor tiles Flowable fill Laminated paperboard Modular threshold ramps Nonpressure pipe Patio blocks Railroad grade crossing surfaces Roofing materials Shower and restroom dividers/partitions Structural fiberboard	Nylon carpet and nylon carpet backing
Landscaping Products	
Designated	***Proposed***
Compost made from yard trimmings or food waste Garden and soaker hoses Hydraulic mulch Lawn and garden edging Plastic lumber landscaping timbers and posts Compost made from manure or biosolids (Revision) Fertilizers made from recovered organic materials	
Nonpaper Office Products	
Designated	***Proposed***
Binders, clipboards, file folders, clip portfolios, and presentation folders Office furniture Office recycling containers Office waste receptacles Plastic desktop accessories Plastic envelopes Plastic trash bags Printer ribbons Toner cartridges	None at this time.

EXHIBIT 4-3
Federal Procurement Guidelines

Paper and Paper Products	
Designated	***Proposed***
Commercial/industrial sanitary tissue products Miscellaneous papers Newsprint Paperboard and packaging products Printing and writing papers	None at this time.
Park and Recreation Products	
Designated	***Proposed***
Park benches and picnic tables Plastic fencing Playground equipment Playground surfaces Running tracks	None at this time.
Transportation Products	
Designated	***Proposed***
Channelizers Delineators Flexible delineators Parking stops Traffic barricades Traffic cones	None at this time.
Vehicular Products	
Designated	***Proposed***
Engine coolants Rebuilt vehicular parts Re-refined lubricating oils Retread tires	None at this time.
Miscellaneous Products	
Designated	***Proposed***
Awards and plaques Bike racks Blasting grit Industrial drums Manual-grade strapping Mats Pallets Signage Sorbents	None at this time.

5. Incorporate environmental performance into purchasing decisions.

The federal government has been directed by Executive Order 13101 to identify and give preference to the purchase of products and services that pose fewer environmental burdens. As discussed earlier, EPP involves purchasing products or services that have reduced negative effects on human health and the environment when compared with competing products or services that serve the same purpose.

Some of the benefits of EPP include:

- Improved ability to meet existing environmental goals.
- Improved worker safety and health.
- Reduced liabilities.
- Reduced health and disposal costs.

Local governments could follow this lead and incorporate this philosophy in purchasing decisions. There are five guiding principles adopted by the federal government:[iv]

- Environment + Price + Performance = EPP: Include environmental considerations as part of the normal purchasing process.
- Pollution Prevention: Emphasize pollution prevention early in the purchasing process.
- Life Cycle Perspective/Multiple Attributes: Examine multiple environmental attributes throughout a product's or service's life cycle.
- Comparison of Environmental Impacts: Compare relevant environmental impacts when selecting products or services.
- Environmental Performance Information: Collect accurate and meaningful information about environmental performance and use it to make purchasing decisions.

4.4.3 Internal Waste Reduction Policies

6. Implement in-house waste reduction programs and practices.

Waste reduction practices should be implemented in local government policies and procedures whenever practicable and cost-effective.

- Electronic communication instead of printed, double-sided photocopying and printing.
- 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, such as carpets.

- 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 landscapes and using on site.

Adopted policies should be reinforced through employee incentives for outstanding performance.

4.4.4 Education Programs

7. Continue waste reduction education programs.

The System and many other entities in Spokane County have several education programs aimed at youth, the general public, local businesses, and home composters. The System should continue to monitor the attendance, interest, and feedback in these existing programs and make adjustments to educational programs, as necessary.

8. Provide financial assistance for private waste reduction efforts.

The System could offer program development and grant access assistance to qualifying businesses or organizations for programs that help promote waste prevention and recycling.

For example, the following funding options are provided by Alameda County, California:[v]

- StopWaste Mini-Grants provide up to $5,000 to get started.
- Business Waste Prevention Fund offers competitive monetary awards for waste prevention proposals from $10,000 to $100,000.
- StopWaste Partnership Incentive Payments provides $50 per ton of new waste diverted up to 200 tons for a total up to $10,000 for each business.
- Revolving Loan Fund offers low interest loans up to $250,000 to businesses that use recycled materials in processing or creating new products and are diverting waste from Alameda County landfills.

9. Continue support for recognition for waste reduction successes.

Local governments could provide recognition to groups or businesses that successfully prevent waste. Many communities publicly recognize and reward local businesses and organizations for their environmental achievements. Ecology awards businesses and individuals throughout the State with the Governor's Awards for Pollution Prevention and Sustainable Practices (http://www.ecy.wa.gov/sustainability/GovAward/gov_awards.htm). The Governor's Award pays tribute to sustainable businesses for their work and for providing

examples of programs that reduce waste. Local governments could collaborate by hosting special events, publishing case studies, and helping businesses and organizations attract positive press regarding their waste reduction practices.

4.4.5 Waste Exchanges

10. Continue administering 2good2toss.

The System currently administers www.2good2toss.com, an online materials exchange that primarily targets residential household goods for reuse. 2good2toss operates much like "classified ads." Residents post their surplus/unwanted materials or materials they want to find by completing the electronic 2good2toss listing form.

Once the form has been completed and submitted, the listing is submitted to the site administrator. Submissions are reviewed and posted on the 2good2toss website, which is updated hourly on weekdays; daily on weekends. Users browse the listings and contact the listing user directly through contact information that the listing user provides.

The System has been in discussion with i-WasteNot Online Resource Recovery Systems to add an online waste industrial exchange to 2good2toss' listings.

11. Promote private waste exchanges.

Several private waste exchanges operate around the country. They operate in a manner similar to King County's IMEX site (Industrial Materials Exchange, http://www.govlink.org/hazwaste/business/imex/) for business industrial waste, matching up waste generators with waste users. Some exchanges require membership and charge membership fees. Many private exchanges are part of Waste.net, a national system of waste and materials exchanges. Waste.net is owned and operated by Recycle.net Corporation.

Local governments could provide Spokane businesses with additional information on waste exchanges on their websites.

4.5 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the source reduction alternatives discussed above leads this Plan to recommend implementing a progressive but monitored approach to source reduction activities. This approach will provide for continued progress toward meeting Washington State's sixty percent diversion goal while maintaining a balance of costs and diversion benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for the assessment or monitoring of an issue.

Some of the alternatives have been modified to allow for further assessment or monitoring of an issue before implementation. This was because the issue was not fully supportable by SWAC members without additional information to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

The Plan endorses product stewardship as a means of promoting greater reuse of products and materials that have residual value as an alternative to their disposal as municipal solid waste. Finding alternative uses for waste products can reduce the volume and cost of their disposal and contribute to the cost effectiveness of their consumption as a resource. The complete use of toxic and hazardous substances for their intended purpose can reduce the cost and impact of disposing of them as components of the waste stream. The Plan strongly supports the development of public and/or private partnerships in programs that market the reuse and recycling of select products. Examples include the reuse of grocery bags, reselling or exchange of household items, and greater utilization of used building materials in the construction of public infrastructure and the private housing market.

Product Stewardship

1. Develop partnerships with private sector organizations to provide reuse and recycling options for select products.

3. Support product stewardship efforts.

Procurement

4. Assess using purchasing power to influence markets for recovered materials. Provide assessment to jurisdictions for their use in implementing their procurement policies.

Internal Waste Reduction Practices

6. Implement in-house waste reduction programs and practices.

Waste Reduction Education

7. Continue waste reduction education programs.

9. Assess providing recognition for waste reduction successes. Supply assessment to jurisdictions for their use in implementing within their policies. Implement program if assessment is supportable and funds become available.

Waste Material Exchanges

10. Continue administration of waste/materials exchange.

11. Encourage private waste exchanges.

SECTION 5

Recycling

5.1 Introduction

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 that are 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 evaluation of recycling within Spokane County reviewed existing recycling programs and practices, identified key recycling issues for both residential and commercial programs, and determined alternatives and recommendations to help meet recycling goals. Describing existing conditions of current recycling includes a review of recycling facilities that are used for recycling collection and/or processing, and discussions on operations and programs implemented by various jurisdictions or private companies. Many of the recycling programs described in this chapter are integrated with waste reduction and reuse programs and are described in Section 4.

5.1.1 Recycling Objectives and Goals/Recycling Rates

Spokane County has established the following objectives for recycling:

- Recycle materials before processing in the WTE Facility or before disposal in a landfill.
- Ensure access to recycling collection services for residences, businesses, and industry.
- Locate recycling sites to optimize service levels and transportation efficiencies.
- Promote local recycling businesses to support economic development within the County.
- Encourage competition to reduce costs of collection and processing.

These objectives support the Washington State recycling goal of achieving a 50 percent municipal solid waste (MSW) recycling rate. The System's MSW recycling rate increased slightly from 43 percent in 1998 to 44 percent in 2004 (*Spokane Regional Solid Waste System, 2006*).

The State's recycling rate is based on municipal solid waste as defined by the Environmental Protection Agency and includes durable goods, nondurable goods, containers and packaging, food wastes, and yard trimmings. It does not include industrial waste, inert debris, asbestos, biosolids, petroleum contaminated soils or construction, demolition, and landclearing debris disposed of at municipal solid waste landfills.[i]

Washington State Department of Ecology (Ecology) in 2003 also began to calculate a diversion rate by measuring non-MSW recyclables that are diverted from landfilling such as

asphalt, concrete, construction, demolition, and landclearing debris, tires, and oil and wood used for fuel, as well as donated foods and reused household items and construction material. Spokane's non-MSW recycling rate in 2004 was 40 percent. The tonnages for these materials are calculated with recycled MSW tonnages for a total diversion rate.[ii] Spokane County's total diversion rate for 2004 was 42 percent.

Statewide average recycling in 2004 was 42 percent, and total diversion was 48 percent (Ecology 2006).

A number of laws apply to waste reduction and recycling in Washington State. The most pertinent are (RCW 35.21, 36.58, 70.93, 70.95, 81.77).

5.2 Existing Conditions - Recycling

Spokane County citizens have the opportunity to recycle a wide variety of materials through curbside recycling programs (where offered) or public or private drop-off facilities.

Residents can contact the System's Recycling Hotline to learn of their nearest recycling drop off facility or curbside collection provider. The following list includes recyclable materials in Spokane County. These materials are also shown as the Designated Recyclables Materials in Appendix G (see 5.5.1 Designation of Recyclable Materials). Asterisks (*) indicate materials that are included in residential curbside recycling programs.

- Antifreeze.
- Asphalt/concrete
- Batteries (household, automotive, cell phone, small hand tools and electronics)*
- Carpet pad
- Construction or demolition debris
- Wood
- Donated Food
- Electronics:
  - Computers
  - Cell phones*
  - Toner/printer cartridges
  - Televisions
  - Copiers
  - Fax machines
  - Power cables/connectors
- Film - X-ray
- Glass bottles and jars (green, brown, and clear)*

- Gypsum
- Land clearing debris
- Metals:
  - Steel cans*
  - Aluminum cans* and foil
  - White goods/large appliances
  - Automobile bodies
  - Ferrous metals (iron and steel)
  - Nonferrous metals (aluminum, copper, brass, lead, nickel alloys, gold, silver, titanium, tungsten, and inconnel)
- Motor oil and oil filters
- Paint
- Pallets
- Paper:
  - Newspaper*
  - Magazines and telephone books*
  - Paper (computer, office)
  - Corrugated cardboard*
  - Chip board
  - Brown paper bags*
  - Mixed Paper
- Plastic:
  - Number 1: (PETE) Polyethylene terephthalate*
  - Number 2: (HDPE) High-density polyethylene, non-pigmented*
  - Number 2: (HDPE) High-density polyethylene, with colored pigment
  - Number 3: (PVC) Vinyl, siding, window trim, and other vinyl products
  - Number 4: (LDPE) Low-density polyethylene, garment bags, shrink wrap, and bubble wrap
  - Number 6: (PS) Polystyrene, packaging peanuts
  - Other: Polyethylene Foam, carpet pad, and other clean foam
- Reused building material
- Roofing material (as allowed)
- Textiles
- Tires
- Yard waste (Clean Green)*

Not every facility or program can accept all of these recyclables. Some only accept them periodically, depending upon market demand. Many materials are recycled in other regions but are not recycled in Spokane County because at this time it is not cost effective to collect and market them. Examples of materials that are not currently collected and recycled locally include carpet, and Number 3-7 plastic bottles or jugs, plastic tubs or yogurt containers, hard plastic containers used for various prepared food items (such as pastry and cookie containers and frozen meal trays), and large pieces of Styrofoam.

5.2.1 Recycling Collection & Processing Facilities, Operations and Programs

Recycling collection services, drop-off facilities, processing facilities, and recycling education and information programs are administered by the System, haulers, municipal entities, Fairchild Air Force Base (Fairchild), and private operators.

5.2.1.1 Rate Incentives

The overriding feature in Spokane County recycling collection and facility operations and education programs is the use of rate incentives to promote waste reduction and recycling. Also called Pay-As-You-Throw (PAYT), it directly promotes diversion by creating rate structures so that residents who throw away more pay more.

Residents are charged by prescribed sizes and/or quantity of their waste containers, tonnage, and the costs of frequent hauling.

The more material that a customer recycles, the smaller and/or fewer waste containers they need, and the less disposal tonnage they will be charged for. This monetary incentive rewards the customer for reducing the amount of garbage produced.

5.2.2 System Facilities and Operations

The System does not provide curbside collection of recyclables, but does provide recycling drop-off opportunities at System facilities throughout the county. The WTE facility and the two System transfer stations—North County (NTS) and Valley (VTS)—each have a recycling area and adjacent household hazardous waste (HHW) drop-off facility. The recycling/HHW facilities are open to the public during the same hours as the disposal area. Since the recycling/HHW facilities are accessed without crossing the scales, materials are accepted without charge or payment for the material brought in.

All three facilities have identical operations. The recycling facilities accept newspapers, magazines, telephone books, glass bottles and jars (clear, brown, and green), steel cans, aluminum cans, corrugated cardboard, brown paper bags, scrap metals (both ferrous and nonferrous), and polyethylene terephthalate (PETE) Number 1 and high-density polyethylene (HDPE) Number 2 plastic bottles and jugs (both uncolored and colored; no automotive product plastic bottles are accepted). The public deposits most materials into intermediate bins adjacent to the transfer container in the unloading areas. The intermediate bins are checked by site staff for contaminates, and then emptied into the transfer containers.

Recyclable materials are transported from the recycling areas to local recycling businesses on a regular basis. The processing, marketing, and shipment to market of collected recyclables are handled by private recycling businesses on a contract basis with the System.

Motor oil, antifreeze, vehicle batteries, and button-cell batteries are sent for recycling by a private collector. Specially trained System personnel sort and package disposable material for shipment to a hazardous waste landfill or incinerator (see Section 12).

5.2.2.1 Specialized Recycling Operations

Some specialized programs have been established for recyclables received at the System's North County and Valley transfer stations and at the WTE facility. Some programs have a fee assigned with them.

White Goods and Large Appliances

Appliances are directed to the solid waste tipping floor where they are sorted and recycled as scrap metal after the refrigerant is recovered and other hazardous components (mercury switches, capacitors with PCBs) are removed by trained staff. The regular solid waste rate is charged for these white goods and large appliances, because they require special handling.

Other Specific Materials

Large scrap metal that can be separated from disposed material on the tipping floor is sorted and placed with the white goods metals for recycling. Motor oil and antifreeze collected at System HHW collection sites are recycled (see Section 12). Yard debris collected by the System is recycled through the System's Clean Green yard debris program (see Section 5.3.1.1).

Metals Reclamation Conducted at WTE

Ferrous metals that do not burn during the combustion process at the WTE facility are magnetically removed onsite from the ash, compressed into 1-ton bales, and sent to market where they are made into fence posts and rebar. This process captures the still-valuable metals from the ash, and avoids the added costs of disposing of this material into the ash landfill. In 2004, 8,955 tons of ferrous metal were recovered from the ash.

Household Batteries

The System offers a household batteries program to divert mercury and other heavy metals from the waste stream. Batteries are accepted at System collection sites (North County and Valley transfer stations and the WTE facility), and drop-off sites at businesses throughout the County. Residents can call the Recycling Hotline to determine their nearest drop-off facility. Household and vehicle batteries are also collected weekly with residential curbside recyclables (see Section 12).

5.2.3 System Recycling Outreach Programs

The System provides regional recycling promotion and support for all of the regional cities and Spokane County through an extensive education and outreach program.

5.2.3.1 System Recycling Education Programs

The System sponsors recycling and waste reduction education programs as well as working in coalition with other environmental entities in Spokane County. Because recycling programs are integrated with waste reduction programs, recycling programs are only summarized here, with detailed explanations in the Waste Reduction Chapter 4.

School and Youth Education

- Public and Private Schools - Presentations are provided for classrooms and school-associated groups and clubs.
- Youth Publications - *Recycling RAP* and *kids enviro* page published during the school year.
- Other Youth Activities - Presentations are provided to variety of youth groups. Tours of the Waste to Energy plant emphasize the importance of recycling.

Public Outreach

- Brochures:
  - The System produces numerous brochures, which are distributed through a variety of means.
- Publication:
  - *One Man's Trash* is a four-page quarterly newsletter distributed as an insert in local newspapers (including *The Spokesman-Review* and *The Northwest Inlander*) and placed at regional public venues.
  - The *Recycling and Garbage Guide* included in the QwestDex telephone book.
  - *The House That Recycling Built* is a popular publication listing recycled-content building material that can be purchased in the Spokane area.
- Recycling Hotline (509) 635-6800):
  - The Spokane Regional Recycling Hotline provides information and technical assistance to residents and businesses about waste reduction and recycling programs and other solid waste questions. The calls result in mailings of thousands of brochures containing information on waste reduction, recycling and other aspects of Spokane's integrated regional solid waste system.
- Advertising:
  - The System places advertisements to promote waste reduction and recycling in regional periodicals whenever opportunities present themselves.
- Booths at fairs and community events:
  - The System sponsors booths at local fairs and home shows.
- www.solidwaste.org:
  - The System maintains a website on the Internet.

Education and Outreach Programs in Coalition with Other Entities

The System is also involved in many programs with other government and business entities promoting waste reduction, recycling, and sustainable lifestyle choices:

- Earth Day.
- The Green Zone.
- Spokane Youth Environmental Conference.

Details of these programs are described in Section 4.

Business and Institutional Education

- Waste Reduction Assessment Program.

The System contracts with Pacific Material Exchange to manage the Waste Reduction Assessment Program (WRAP). WRAP offers waste stream assessments to businesses and institutions interested in reducing their disposal costs and increasing their recycling efforts. The Work Site Recycling Manual is also distributed and provides a step-by-step guide for establishing waste reduction and recycling practices in the workplace.

- System and WRAP staff work collaboratively with other organizations to further business waste reduction education and practices:
  - U.S. Green Building Council, Cascadia Chapter.
  - Northwest EcoBuilding Guild, Inland Chapter.

Details of these programs are described in Section 4.

5.2.4 Spokane County Recycling Programs

The County is a partner in the System programs. Residents and businesses in unincorporated areas of Spokane County have access to System services and programs and additionally the services and programs of WUTC certificated hauling companies. County offices provide recycling programs for employees who work at county buildings, including the Spokane County Courthouse. These recycling services are provided by a private contractor which collects and hauls recyclable materials as designated by the County.

The more densely populated portions of the unincorporated area of the Spokane County receive curbside recycling collection service. Waste Management and Sunshine Disposal service those unincorporated residential curbside recycling accounts. Because collection routes may cross over between unincorporated and incorporated areas, neither firm separates curbside recycling collection data in unincorporated areas from the data from incorporated areas that they service.

Waste Management and Sunshine Disposal additionally service commercial recycling accounts in these unincorporated areas. Again the collection routes cross over between unincorporated and incorporated areas and neither firm is able to separate collection data between areas.

5.2.5 Municipal Recycling Facilities and Programs

5.2.5.1 City of Airway Heights

The City of Airway Heights has a compartmentalized recycling drop-off container for town citizens located in the Community Center parking lot at 13120 W 13th Avenue. The materials are hauled by Waste Management (Tripp, 2006).

Recyclables accepted include:

- Corrugated cardboard.
- Newspaper.
- Phone books.
- Glass bottles and jars.
- Aluminum cans.
- Steel cans.
- Plastic bottles (Codes 1 – PETE, and 2 - HDPE).

5.2.5.2 City of Cheney

The City of Cheney took over operation of the Cheney Recycling Facility from the previous non-profit organization in July of 2003. The facility is located at 100 Anderson Road. It is open to the public Wednesday through Friday, 12:00 p.m. to 5:00 p.m., and Saturday, 10:00 a.m. to 4:00 p.m. The facility is staffed by an operator during the hours the facility is open to the public. Cheney also uses System brochures and education outreach programs.

The following materials are acceptable for drop-off at the Cheney Recycling Center:

- Aluminum.
- Batteries (household and automobile).
- Cardboard (corrugated).
- Glass.
- Motor oil.
- Paper Products (magazines, newspapers, phone books, and office paper).
- Plastic bottles (Codes 1 – PETE, and 2 - HDPE).
- Steel cans.

Under an agreement with Eastern Washington University (EWU, located in Cheney), the City of Cheney receives and pays for the processing of EWU's glass. The city receives the revenue from the sale of the university's cardboard which is processed at the university using a cardboard compactor provided by the City.

The City contracts with a local processing company for the final processing and marketing of the recyclables collected at the Cheney Recycling Facility. EWU has a separate agreement with a local processor for the processing and marketing of recyclables other than glass and cardboard, collected by the University's recycling program. Exhibit 5-1 displays the tonnages and percents of recyclable commodities collected by the Cheney Recycling Facility.

For more information, visit Cheney's website: http://www.cityofcheney.org/site/departments/works/solid_waste.

EXHIBIT 5-1
City of Cheney Recycling Center, 2004

Material	Tons	Percent
Aluminum cans	5.97	1.2
Cardboard	176.57	35.9
Glass	81.00	16.5

EXHIBIT 5-1
City of Cheney Recycling Center, 2004

Material	Tons	Percent
Aluminum cans	5.97	1.2
Cardboard	176.57	35.9
Paper products	206.57	42.0
PETE (Code 1)	6.57	1.3
HDPE (Code 2)	6.89	1.4
Steel cans	8.78	1.9
Total	**492.33**	**100**

(Clemans, 2005, and MacDonald, 2006)

5.2.5.3 City of Deer Park

Sunshine Disposal, Inc. provides recycling curbside collection services for residential and commercial customers in Deer Park. Sunshine sorts recyclables at their private transfer station located in Spokane Valley. The City of Deer Park has a display rack at City Hall that offers System brochures, outlining the details of the recycling programs offered by the System (Kriger, 2006).

5.2.5.4 Town of Fairfield

The town of Fairfield does not receive curbside recycling service, nor does it have a drop-off facility located within its municipality. Fairfield residents have access to System facilities and education and outreach programs, as well as private recycling operations.

5.2.5.5 Town of Latah

The town of Latah does not receive curbside recycling service, nor does it have a drop-off facility located within its municipality. Latah residents have access to System facilities and education and outreach programs, as well as private recycling operations.

5.2.5.6 City of Liberty Lake

Residents of the City of Liberty Lake receive residential curbside recycling service from Waste Management. Liberty Lake also has a twice-yearly Community Clean-Up Day that focuses on "Clean Green." Liberty Lake residents have access to System education and outreach programs, private drop-off recycling facilities and the Valley Transfer Station.

5.2.5.7 City of Medical Lake

Medical Lake has a drop-off recycling facility available to City of Medical Lake residents only. Recyclables, yard debris, and some household hazardous waste are accepted, and include:

- Cardboard.
- Phone books.
- Magazines.
- Newspaper.
- Mixed and shredded paper.
- Aluminum cans.
- Steel cans.
- Glass bottles and jars.
- Plastic bottles - Code 1 - PETE and Code 2 HDPE.
- Clean Green yard debris.
- Batteries - vehicle and dry cell.
- Waste oil.
- Antifreeze.

Signs are posted around the recycling facility that explain recycling regulations and guidelines. Medical Lake periodically provides recycling information, such as tips or recycling issues/concerns, mailed with local utility bills. Medical Lake displays System brochures at City offices and the recycling facility, and has applied for grant money in 2006, part of which is earmarked to purchase a brochure holder that is designed to withstand the weather. Exhibit 5-2 displays the tonnages and percents of recyclable commodities collected by the Medical Lake Recycling Center.

EXHIBIT 5-2
City of Medical Lake Recycling Center, 2004

Material	Tons	Percent
Aluminum cans	5.8	1.3
Cardboard	98.7	22.5
Glass	53.9	12.3
Magazines	33.4	7.6
Mixed paper	32.3	7.4
Newspaper	170.1	38.8
Phone books	6.9	1.6
Plastic PETE (Code 1)	6.8	1.6
Plastic HDPE (Code 2)	9.4	2.1
Steel cans	20.8	4.7
Total	**438.1**	**100**

Source: *Dorshorst, 2006*

5.2.5.8 Town of Rockford

The Town of Rockford does not receive curbside recycling service, nor does it have a drop-off facility located within its municipality. Rockford residents have access to System facilities and education and outreach programs, as well as private recycling operations.

5.2.5.9 City of Spangle

Spangle uses a local recycling processor for collection of newspapers, paper, and aluminum cans in drop boxes. When full, Spangle calls to have the material picked up and transported to the processor. Spangle uses revenue generated from its recycling program for community projects (for example, park improvements).

5.2.5.10 City of Spokane

The City of Spokane provides curbside collection of recyclables for both residential and commercial accounts. Many City of Spokane facilities have workplace recycling programs. The City of Spokane operates the System drop-off recycling areas. Residents also have access to private drop-off/buy-back centers.

City of Spokane: Residential Curbside Collection of Recyclables

The City of Spokane Solid Waste Management Department (SWMD) provides weekly curbside collection to all city residents who live in single-family homes, duplexes, triplexes, and four-plexes. Recycling collection is on the same day and in the same place as refuse collection. In 2004, Spokane provided collection services for about $3 to $4 per month. This fee is blended into the monthly solid waste collection utility fee that includes both recycling and disposal. The types and quantities of residential curbside materials collected in 2004 are shown in Exhibit 5-3.

EXHIBIT 5-3
City of Spokane Residential Curbside Recycling, 2004

Material	Tons	Percent
Newspapers, magazines, and cardboard	6,160	67
Glass	2,292	25
Steel	274	3
PETE (Code 1)	194	2
HDPE (Code 2)	156	2
Aluminum cans	141	1
Total	**9,217**	**100**

Source: *City of Spokane Solid Waste Management Department, 2005*

City of Spokane: Multifamily Recycling Collection

Multifamily recycling is an optional subscription service for apartment managers and residents provided by the Spokane Solid Waste Management Department. If requested, apartment complexes (five units or greater) are provided with sets of containers and placed in

convenient locations on the property. The needs of apartment residents and space limitations on apartment grounds determine the number and types of containers. Containers may be rolling totes of different sizes up to 90-gallon, or specially marked dumpsters. Materials collected and preparation needs are the same as for curbside collection (Tresko, 2005). Spokane does not track multifamily customers separately for information on material quantities and participation rates. Therefore, multifamily collection totals are included with the residential curbside totals shown in Exhibit 5-3.

City of Spokane: Commercial Recycling

The City of Spokane Solid Waste Management Department collects corrugated cardboard, mixed paper, magazines, aluminum cans, and glass bottles from businesses that subscribe to its service. Taverns and restaurants are the primary accounts for collection of glass bottles and jars. Rear-loaded containers are provided for businesses that want to recycle cardboard. Carts in multiple sizes are available for mixed paper. There are approximately 2,500 commercial refuse accounts in Spokane. About 30 percent of these accounts subscribe to recycling collection services. In 2004, commercial accounts recycled 2,421 tons of fiber material, as shown in Exhibit 5-4.

EXHIBIT 5-4
City of Spokane Commercial Fiber Recycling, 2004

Material	Tons	Percent
Cardboard	841	35
Mixed Paper	1,580	65
Total	**2,421**	**100**

Source: *City of Spokane Solid Waste Management Department, 2005*

The rates for commercial recycling services are based on a graduating scale that is lower than conventional disposal rates. By reducing their refuse generation through recycling, businesses are able to use a smaller dumpster and/or have less frequent collection. Even though the customer is charged for the collection of recyclables, many businesses have successfully reduced their total cost for solid waste handling. Cost savings can be as high as 30 to 40 percent.

City of Spokane: City Hall Recycling

Spokane City Hall has its own recycling program for city staff. Depending on the facility, city staff can recycle office paper (envelopes, some colored paper, blueprints, and carbonless forms), aluminum cans, and plastic PET bottles. In the last few years, PET plastic bottles have replaced vending machine aluminum cans; therefore, aluminum can recycling is anticipated to decrease while plastic bottle recycling is expected to increase in the future.

Spokane City Hall participates in "Clean Your Files Day," an annual event since 1998, sponsored nationally by such organizations as the U.S. Conference of Mayors (the primary sponsor) and the National League of Cities. In 2004, Spokane City Hall recycled 950 pounds of office paper.

5.2.5.11 City of Spokane Valley

Residents of the City of Spokane Valley receive residential curbside recycling service from Waste Management. Spokane Valley also has access to System education and outreach programs, and private recycling drop-off facilities and the System's Valley Transfer Station.

5.2.5.12 Town of Waverly

The town of Waverly does not receive curbside recycling service, nor does it have a drop-off facility located within its municipality. Waverly residents have access to System facilities and education and outreach programs, as well as private recycling operations.

5.2.6 Fairchild Air Force Base Facilities and Programs

Fairchild Air Force Base (Fairchild) has a comprehensive recycling program that includes a wide variety of materials, collected from residential areas and central collection points. These recyclable materials are categorized similarly to those in other local recycling programs. Asterisks indicate materials that are included in residential curbside recycling programs.

- Paper:*
  - White and colored office paper.
  - Computer paper.
  - Envelopes.
  - Forms (without carbon paper).
  - Junk mail.
  - Magazines.
  - Newspapers.
  - Shredded paper.
  - Paper bags (grocery, shopping, lunch).
  - Phone books.
  - Chipboard (cereal boxes, shoe boxes, and other like containers).
- Cardboard.*
- Plastics:*
  - Number 1: (PETE) Polyethylene terephthalate.
  - Number 2: (HDPE) High-density polyethylene (clear and colored).
  - Number 4: (LDPE) Low-density polyethylene (light-colored plastic/garment bags/shrink wrap/bubble wrap).
- Glass - Glass beverage and food containers of all colors.*
- Metal:
  - Aluminum cans.*
  - Steel and bimetallic cans.*

  - Scrap Metal - The base Defense Reutilization and Marketing Office (DRMO) is the collection point for scrap metal. DRMO accepts ferrous metal items (other than cans) that are made of cast iron and steel sheet, and nonferrous metal items that are made of nickel, bronze, copper, brass, and lead.

- Wooden pallets.
- Electronics:
  - Cell phones.
  - Batteries, chargers.

In 2004, Fairchild recycled approximately 1,360 tons of material and 382 tons of yard waste. These numbers do not include the large quantity of demolition debris (primarily asphalt and concrete), tires (aircraft and vehicle), used oil, antifreeze, and batteries that also were diverted from the waste stream.

5.2.6.1 Fairchild Recycling Facilities

Fairchild operates a Recycling Center, which has the equipment necessary to process, and store all materials recycled on base and in the housing areas. A drive-through drop-off area is located at the Center, which is open 7 days a week, 24 hours a day, and is available for use by all individuals that have access to the base. Customers are asked to separate their recyclables and place them in the appropriate containers. The base recycling contractor collects, transports, processes, and stores all recyclable materials on the base, until they are sold to private recycling centers.

5.2.6.2 Fairchild Recycling Programs

Recycling Collection Program

Military family housing residents receive a blue 18.7-gallon recycling container for all recycled materials. Each container has a label that provides specific instructions on what materials are accepted and how they need to be packaged. Residents are also provided with a yard waste container. Yard waste is collected and transported to the regional Waste-to-Energy facility for processing at the regional composting facility. In addition, a variety of containers (desk side containers, cardboard cages, containers for paper, cans, plastic, etc.) for recyclable materials are located at all Fairchild offices and shops. Each office and shop is responsible for placing bagged recycled materials at their building's designated central collection point(s) assigned to them. The Recycle Center contractor performs weekly or as-needed pick-up of the materials from these central collection points and transports them to the Recycle Center for processing.

Park and Event Recycling

Fairchild has outdoor recycling units at several locations throughout the base including parks, baseball fields, and the "FAMCAMP" recreational vehicle park area. Cans, plastic, and glass are collected in the outdoor containers. Newspaper is also collected at the FAMCAMP. For major picnics and events, portable recycling containers are used to supplement the permanent outdoor containers. Typically, plastic and aluminum cans are collected at picnics/events.

Educational Programs

Fairchild offers many recycling educational programs on base:

- Periodic articles in the newspaper.
- Annual briefings to facility managers and squadron recycling coordinators.
- Annual briefings at commander's calls about the base recycling program (commander's calls are held by all squadrons commanders on a routine basis and typically require the attendance of all squadron members).
- Annual presentation to the children at the on-base elementary school.
- Annual distribution of a recycling brochure to all housing residents.
- Informational booths set up at various base and community functions.
- Quarterly Environmental Management Subcommittee meetings (this subcommittee is co-chaired by the Mission Support Group and Maintenance Group Deputy Commanders, with members from a wide variety of Fairchild organizations).
- Other miscellaneous programs (Wulf, 2005).

5.2.7 Recycling Haulers

The availability of residential curbside recycling collection service within Spokane County is determined by several factors. In the unincorporated areas of the County and those municipalities that have chosen to not exercise their authority to self-haul or contract directly for solid waste collection services, curbside recycling service areas are determined by the County's Solid Waste Management Plan (SWMP) and implemented by way of the County Service Level Ordinance (see Appendix C). The SWMP defines these curbside recycling areas based on factors such as population densities and designated urban versus rural areas. All Spokane County residential recycling collection programs collect the same materials on the same day as their refuse collection service, no matter who the residential recycling hauler is.

Municipalities have multiple options granted to them by way of State RCW's. They have the option of exercising their authority to establish their own solid waste and recycling service contracts (Airway Heights, Cheney, Deer Park, and Medical Lake). They have the option of operating their own solid waste collection service (City of Spokane). They also have the option to not exercise their municipal contracting authority whereby solid waste and recycling collection services would revert to the county's service levels (Fairfield, Latah, Liberty Lake, Millwood, Rockford, Spangle, Spokane Valley, and Waverly). These services would then be provided by the certificated haulers for that particular area under the authority and rate making model of the Washington Utilities and Transportation Commission (WUTC).

In addition, WUTC certificated residential recycling haulers can choose to offer subscription service to their residential solid waste customers that reside outside of designated service level areas identified in the SWMP and implemented by the County's Service Level

Ordinance. The latter is not often implemented because of the costs to provide curbside service to lower density or populated areas.

5.2.7.1 Certificated Hauling Companies

Four private WUTC-certificated garbage haulers provide residential curbside collection of recyclables in designated service areas, and/or commercial recycling collection (upon request) within unincorporated Spokane County and municipalities except for the City of Spokane. The City of Spokane operates its own public Solid Waste Management Department, and is described above under City of Spokane operations.

Exhibit 5-5 displays the tonnages and percents of recyclable commodities collected by Waste Management and Sunshine from their residential curbside accounts in portions of the unincorporated county as well as Fairchild Air Force Base, and the cities of Deer Park, Liberty Lake, Millwood, and Spokane Valley in 2004.

EXHIBIT 5-5
Waste Management and Sunshine Disposal Residential Curbside Recycling, Unincorporated Spokane County, Fairchild Air Force Base, and the cities of Deer Park, Liberty Lake, Millwood, and Spokane Valley, 2004

Material	Tons	Percent
Newspaper, magazines, and some cardboard	5,191	53
Cardboard	2,451	25
Glass	1,398	14
PAT*	195	2
Steel	153	2
PETE	153	2
Aluminum cans	114	1
HDPE	113	1
Total	**9,768**	**100**

* PAT is commingled plastic, aluminum, and tin.

Source: *Spokane Regional Solid Waste System, 2005*

Waste Management of Spokane

Waste Management of Spokane (Waste Management) is a private solid waste handling company that provides residential curbside recycling services to its contracted municipal jurisdictions and the designated curbside recycling area described in the SWMP and implemented by way of the County's Service Level Ordinance.The additional curbside recycling service areas described in the SWMP and implemented by Service Level Ordinance include the cities of Liberty Lake, Spokane Valley, and Millwood, and certain portions of unincorporated areas. These areas are provided curbside recycling service by Waste Management under authority of the WUTC. Curbside service is provided on a weekly basis, on the same day as garbage pickup. Waste Management also provides recycling service to all multi-family complexes (five or more units) in the recycling service areas described in the SWMP and implemented by Service Level Ordinance.

On request, Waste Management provides commercial subscription recycling services to businesses and institutions. Commercial accounts are provided with containers, drop-off boxes, or roll-offs and are serviced on an as-needed basis for materials such as cardboard and scrap metals.

Sunshine Recyclers, Inc., d/b/a Sunshine Disposal & Recycling

Sunshine Recyclers Incorporated, d/b/a Sunshine Disposal & Recycling, is a private refuse and recycling hauler that provides collection services to its contracted municipal jurisdictions of the cities of Airway Heights, Cheney, Deer Park, and Medical Lake, and Fairchild Air Force Base. Under contract with the City of Deer Park and Fairchild Air Force Base, Sunshine Disposal also provides residential curbside recycling and yard waste collection. Sunshine provides commercial curbside service for Deer Park. In addition to providing residential and commercial collection services, Sunshine processes recyclables at the Sunshine Recyclers Transfer Station and then privately markets the material to many end users. The Sunshine Recyclers Transfer Station does not currently accept source separated recyclables from the general public.

Empire Disposal, Inc.

Empire Disposal is a private garbage hauler that provides solid waste collection service in its WUTC-designated service area located in the southeast corner of Spokane County. This service area includes the towns of Spangle, Rockford, Fairfield, Waverly, and Latah. Empire Disposal does not provide hauling services for recyclables.

Newman Lake Disposal, Inc.

Newman Lake Disposal is a private garbage hauler that provides solid waste collection services in the unincorporated Newman Lake area, north of Trent Avenue (State Hwy 290) and bordering Idaho. Newman Lake Disposal does not provide hauling services of recyclables.

5.2.8 Private Processing Recycling Facilities

There are a variety of private recycling facilities that serve the entire county. Most serve both commercial and residential customers as well as providing buy-back/drop-off facilities. Some focus on particular commodities while others accept a variety of material types. Many of these local processors accept material from both residential and business users, and may include hauling in their commercial services. Scrap metal is a major waste reduction contributor. Some specific processors focus on scrap metal recovery and marketing. Most drop-off, buy-back centers accept metals. The Spokane Recycling Hotline maintains a list of materials accepted by recycling businesses and their respective hours of operation.

5.2.8.1 Multi-Commodity Processors

There are eight private Multi-Commodity Processors in the County that accept a wide variety of materials from the public (both residential and commercial customers). The locations of these facilities are shown in Exhibit 5-6.

The Spokane Recycling Hotline maintains a list of materials accepted by each drop-off/buy back center and their respective hours of operation. Exhibit 5-7 lists the drop-off/buy-back

recycling businesses in Spokane County, their addresses, phone numbers, and the materials collected at each.

Action Recycling

Action Recycling collects aluminum scrap and aluminum cans, copper, brass, radiators, stainless insulated wire, and newspaper.

American Recycling Corporation

American Recycling Corporation (American Recycling) is a local processor/broker that specializes in industrial scrap metal recycling. Materials accepted include iron/steel, automobile bodies, appliances, copper, brass, aluminum, lead, radiators, and more. Scrap metal is weighed on a certified scale to determine amounts paid to customers. American Recycling offers services to retail and commercial accounts county-wide. Containers are provided to industrial plants. American Recycling processes the ferrous recovered from ash at the WTE Facility.

EXHIBIT 5-6
Recycling Drop-off and Buy Back Centers in Spokane County

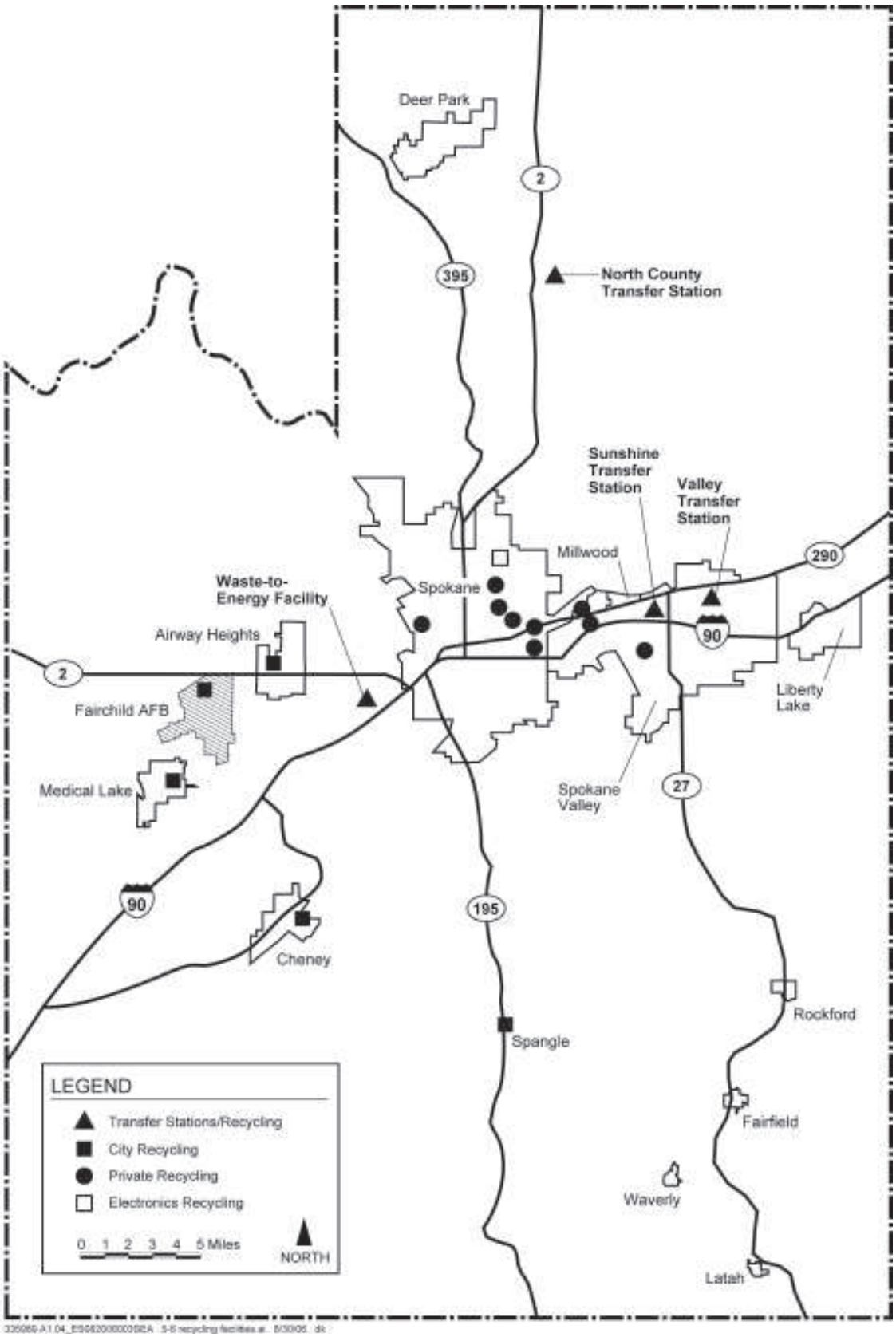


EXHIBIT 5-7
Recycling Facilities Information and Materials Collected

FACILITY	GLASS	ALUMINUM CANS	TIN CANS	NEWSPAPER	HIGH GRADE PAPER	COMPUTER PAPER	MIXED WASTE PAPER	MAGAZINES	CORRUGATED CARDBOARD	PETE CODE 1	HDPE CODE 2 (COLORED)	MILK JUGS (CODE 2 UNCOLORED)	FERROUS METAL	NON-FERROUS METAL	ELECTRONIC WASTE
PRIVATE															
Action Recycling/Phoenix Metals 911 E. Marietta (509) 483-4094		X	X	X					X				X	X	
Scrap x-ray film, gold and silver, automobile batteries, phone books															
American Recycling 6203 E. Mission (509) 535-4271		X	X	X					X				X	X	
Appliances (No freon; CALL FIRST), car bodies, scrap iron, household batteries (NO car batteries)															
Clark's Recycling (Valley) 11913 E. First (509) 922-2264		X		X										X	
Stainless steel															
Clark's Recycling 1730 W. Sinto (509) 328-4086		X		X										X	
Stainless steel															
Dickson Recycling 907 N. Dyer (509) 535-6146		X	X										X	X	
Scrap metals (copper, brass, aluminum, etc.)															
Du-Mor Recycling 6404 N. Perry (509) 489-6482		X	X	X	X	X		X	X	X		X	X	X	X
Phone books, household and automobile batteries, computers (for a fee)															

EXHIBIT 5-7
Recycling Facilities Information and Materials Collected

FACILITY	GLASS	ALUMINUM CANS	TIN CANS	NEWSPAPER	HIGH GRADE PAPER	COMPUTER PAPER	MIXED WASTE PAPER	MAGAZINES	CORRUGATED CARDBOARD	PETE CODE 1	HDPE CODE 2 (COLORED)	MILK JUGS (CODE 2 UNCOLORED)	FERROUS METAL	NON-FERROUS METAL	ELECTRONIC WASTE
Earthworks Recycling 1904 E. Broadway (509) 534-1638 www.earthworksrecycling.com	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Batteries, appliances, foam peanuts, x-ray film, phone books, aluminum foil, pallets, bubble wrap, shredded paper (CALL FIRST), electronic waste (for a fee).															
Pacific Recycling 1114 N. Ralph (509) 535-1673	X	X	X	X	X	X	X	X	X	X		X	X	X	
Appliances (CALL FIRST), car bodies, household batteries (NO car batteries), phone books															
Spokane Recycling 3407 E. Main (509) 535-0284	X	X	X	X	X	X	X	X	X	X	X	X			X
Clean carpet pad (foam type), clean plastic bags, stretch film, shrink wrap, phone books, electronic waste (for a fee)															
PUBLIC/MILITARY															
Cheney Recycling Facility (Cheney residents only) 100 Anderson Rd. (509) 235-1456	X	X	X	X	X	X	X	X	X	X	X	X			
Phone books, motor oil, car batteries, household batteries, foam peanuts															
Medical Lake Recycling (residents of Medical Lake only) 851 S. Lefevre (509) 299-7715	X	X	X	X	X	X	X	X	X	X	X	X			
Household and automobile batteries, phone books, motor oil, antifreeze, yard waste.															

EXHIBIT 5-7
Recycling Facilities Information and Materials Collected

FACILITY	GLASS	ALUMINUM CANS	TIN CANS	NEWSPAPER	HIGH GRADE PAPER	COMPUTER PAPER	MIXED WASTE PAPER	MAGAZINES	CORRUGATED CARDBOARD	PETE CODE 1	HDPE CODE 2 (COLORED)	MILK JUGS (CODE 2 UNCOLORED)	FERROUS METAL	NON-FERROUS METAL	ELECTRONIC WASTE
Fairchild Air Force Base															
Pollution Prevention & Recycling Ctr. Bldg. 2420, Fairchild AFB (509) 247-2885	X	X	X	X	X	X	X	X	X	X	X	X			
Household hazardous waste, household and automobile batteries, motor oil, antifreeze, phone books, shredded paper, books															
Spokane Regional Solid Waste System															
North County Recycling - Transfer Station 22123 Elk-Chattaroy Rd. (509) 625-6800	X	X	X	X				X	X	X	X	X	X	X	
Valley Recycling - Transfer Station 3941 N. Sullivan Rd. (509) 625-6800	X	X	X	X				X	X	X	X	X	X	X	
Waste to Energy Facility - Recycling Center 2900 S. Geiger Blvd. (509) 625-6800	X	X	X	X				X	X	X	X	X	X	X	
Household hazardous waste, household and car batteries, phone books, appliances (for a fee)															
ELECTRONICS															
Camas Institute (509) 244-9519 (1 or 2 computers) (509) 343-4177 (businesses/ larger quantities)															X
Computer Monitor Service 10816 E. Mission Ave.(509) 891-5188															X
Monitor repair and reuse															
Du-Mor Recycling 6404 N. Perry (509) 489-6482															X

EXHIBIT 5-7
Recycling Facilities Information and Materials Collected

FACILITY	GLASS	ALUMINUM CANS	TIN CANS	NEWSPAPER	HIGH GRADE PAPER	COMPUTER PAPER	MIXED WASTE PAPER	MAGAZINES	CORRUGATED CARDBOARD	PETE CODE 1	HDPE CODE 2 (COLORED)	MILK JUGS (CODE 2 UNCOLORED)	FERROUS METAL	NON-FERROUS METAL	ELECTRONIC WASTE
Earthworks Recycling 1904 E. Broadway (509) 534-1638 www.earthworksrecycling.com															X
Inland Retech 309 N. Sycamore St. (509) 326-1165 www.inlandretech.com															X
Recycle Techs 12928 E. Indiana Ave., Suite 7 (509) 926-1605 www.recycletechs.com															X
PC Salvage - Tacoma www.allaboutpcsalvage.com (253) 460-8322															X
Spokane Recycling 3407 E. Main (509) 535-0284															X
Total Reclaim - Seattle www.totalreclaim.com (206) 343 -7443															X

Clark's Recycling

Clark's Recycling has two drop-off/buy back facilities, located in the Valley and west side. This business specializes in aluminum cans and scrap, copper, brass, radiators, and newspapers.

Dickson Iron and Metal

Dickson Iron and Metal (Dickson) is a drop-off/buy back center that specializes in scrap metal recyclables including scrap iron, aluminum, radiators, copper, stainless steel, brass, electric motors, and insulated wire. Containers are provided for commercial accounts.

Du-Mor Recycling

Du-Mor Recycling is a drop off/buy-back recycling center that accepts aluminum cans, scrap aluminum, newspapers, plastics (PETE and HDPE), corrugated boxes, copper, brass, lead, and scrap iron, and computers. Commercial container service also is provided upon request.

Earthworks Recycling

Earthworks Recycling accepts newspaper, corrugated cardboard, appliances, aluminum cans, office paper, junk mail/cereal boxes, pallets, non-ferrous metals, phone books, packing peanuts, bubble wrap, computer and electronics scrap, batteries, and more. Earthworks provides pick-up service or drop site/lock bins for shredded paper. Earthworks also will provide recycling information and referral.

Pacific Steel and Recycling

Pacific Steel and Recycling is a local processor/broker that specializes in industrial scrap metal recycling and additionally receives recyclables from curbside collection programs, commercial recycling accounts, small businesses, and individuals. A sort line is used to separate recyclables from curbside programs. This company's processing and baling operation includes a horizontal, two-ram baler for cardboard, paper, and metals. It also accepts cans and plastic.

Spokane Recycling Products, Inc.

Spokane Recycling Products, Inc., and its wholly owned subsidiary Waste Paper Services, Inc., operate a paper and plastic recycling/processing facility located in Spokane, WA.

Corrugated cardboard, newspaper and office paper make up the largest portion of the material processed. These materials come from a wide variety of generators, including commercial accounts, the public (via a buy-back center) and the local waste haulers. Curbside material has been received from both the city and county curbside programs since their inception in 1990.

The company utilizes four separate sort lines dedicated to newspaper, high-grade papers, and curbside containers, plus two high-density twin-ram balers for the final processing of materials prior to shipping to market.

Waste Paper Services, Inc., provides a fleet of trucks for servicing company accounts. These services include vans, tractor/flatbed, tractor-trailer and roll on/roll off equipment. The company covers the greater Spokane area on a daily basis.

Currently, the material stream at Spokane Recycling consists of multiple different grades of paper, aluminum and steel cans, glass bottles and jars, HDPE & PET plastic bottles, LDPE film, carpet pad, assorted industrial plastic scrap, used/obsolete boxes and totes.

5.2.8.2 Paper Shredding Services

Several local paper shredding services serve commercial businesses and the general public. Many of them recycle by transporting the shredded paper to drop-off/buy-back recycling centers and other recycling businesses.

B & B Shredding
B & B Shredding places on-site bins and has regular routes or on-call service for its mobile shredding services.

Certified Data Destruction
Certified Data Destruction provides on- or off-site shredding services for both business and residences.

Devries Information Management
Devries Information Management provides on- or off-site shredding services or customers may drop off.

Recall Secured Document Services
Recall Secured Document Services places on-site bins and has regular pick-up routes or on-call service for its mobile shredding services.

Security Document Shredding, Inc.
Security Document Shredding, Inc., places on-site bins and has regular routes or on-call service for off-site document destruction services.

5.2.8.3 Wood Waste Recycling

Several wood waste recycling businesses serve both private residences and commercial customers, including those in the construction, demolition, and land-clearing industries (see Section 11). They are particularly noteworthy for reducing waste and recycling wood waste. Wood waste includes sawdust, chips, shavings, bark, pulp, hog fuel, and log sort yard waste, but it does not include wood pieces or particles containing paint, laminates, bonding agents or chemical preservatives. They are not allowed to accept non-woody yard debris feedstock. All sites charge to accept materials.

ABCO Wood Recycling LLC
ABCO Wood Recycling LLC (ABCO) is a wood recycling company that collects wood waste at its recycling center in North Spokane or supplies a portable container to sites for wood waste collection. ABCO accepts brush, slash, pallets, stumps, and other wood waste materials from residences and commercial accounts. The wood waste is ground and sold for hog fuel.

Cannon Hill Industries, Inc.
Cannon Hill Industries (Cannon Hill) accepts wood waste from residential and commercial accounts. The recycled wood waste is used primarily for hogfuel.

Busy Bee Recycling Company
Busy Bee Landfill and Wood Recycling Company (Busy Bee) accepts woody organic materials such as lumber, pallets, brush, and stumps. It also accepts all types of inert

materials, including concrete, asphalt, glass, metal, non-contaminated dirt, and wood shingles. The wood shingles and other organics are ground in a tub grinder for use as mulch and other landscaping applications.

Diversified Wood Recycling

Diversified Wood Recycling accepts wood waste materials from residential and commercial accounts, including grass clippings for feed, waste sod for resale, wood for compost bulk, and concrete for grinding and use at construction site equipment roads. The recycled wood waste is used for hog fuel.

Sunshine Recyclers Inc., d/b/a Sunshine Disposal & Recycling

Sunshine Recyclers currently provides wood recycling services to several commercial and industrial customers. They process (grind) the material and sell it for use as hog fuel. The facility is located in the Spokane Valley and accepts wood, brush, pallets, mill ends, slash, stumps, Christmas trees and other wood materials. Sunshine anticipates accepting wood waste for recycling from the public after additional site preparation in 2007.

5.2.8.4 Local Manufacturers

Inland Empire Paper Company

Inland Empire Paper Company is a local paper mill which produces newsprint and other groundwood paper for consumption by the printing industry. The company has been in operation since 1911 and employs 140 people to produce 450 tons of paper per day. Some of the newsprint is sold to the local newspaper company, The Spokesman Review. This is a good example of a local market for recyclables.

Inland Empire Paper purchases recycled newspapers from the Spokane area and additionally from throughout the western United States to supply its ONP deink plant. One hundred fifty tons of recycled fiber is produced each day and blended at a ratio of 40 percent with mechanical pulp to produce newsprint and other groundwood papers.

Fiber Reclaim is a wholly owned subsidiary of Inland Empire Paper and is a local paper brokerage firm that buys and sells recycled newspapers and other recyclables. Fiber Reclaim sells those materials to Inland Empire Paper, local businesses and other markets.

Thermoguard Insulation Company

Thermoguard Insulation Co. located in Spokane is a manufacturer of cellulose insulation. This insulation is used in new and remodel construction for residential and commercial applications throughout the Pacific Northwest.

The cellulose insulation is manufactured from 100% recycled paper. The organic cellulose fiber is by nature a very effective insulation material. The natural insulation area of the hollow cellulose fiber has been increased many times by its separation into soft fluffy mass. In this way, air spaces are created around the fiber in addition to the original air space inside the fiber. The fibers are chemically treated during the manufacturing process to provide permanent resistance to fire, decay, and various pests.

Thermoguard Insulation Company began operations in Spokane in 1951. At that time, the company's main focus was the manufacturing of cellulose insulation installation machinery.

In 1955, Thermoguard began manufacturing cellulose fiber insulation primarily to provide material to the company's insulating contracting business. In 1990, Thermoguard was one of the first companies in the United States to change from hammer mills to a fiberizer in its production of cellulose insulation. The fiberizer reduces paper stock to a form similar to the original paper pulp. This produces a lighter and more thermal effective cellulose insulation with a higher R-Value.

5.2.8.5 Other Recycling

Other private recycling facilities focus on specific materials, including appliances, electronics, and moderate risk waste.

Electronics Recycling

Recycling of electronic products is a growing market for both commercial and residential generated items. Electronic recycling services and the businesses that provide them are discussed later in this section, under Emerging Trends.

Moderate Risk Waste

Recycling of moderate risk waste materials for both commercial and residential customers is an important element of the recycling program. In addition to the System program for moderate risk waste management, some private companies are providing local services. An example is Emerald Services, a company that specializes in collection of moderate risk waste materials including oils, solvents, antifreeze, waste water, paint waste, batteries, and used oil filters. Moderate Risk Waste Management is discussed in more detail in Section 12.

5.3 Existing Conditions - Composting Facilities, Operations and Programs

Composting programs and markets/emerging trends are presented separately from the other recycling programs. Local composting consists primarily of yard waste materials (leaves, grass clippings, weeds, small branches, pine needles, and pine cones), although composting conducted by individual households also may include food waste. *A*pproximately 45,900 tons of yard waste was collected for composting in 2004 (*Spokane Regional Solid Waste System 2004 Annual Report)*. Just as for other solid waste programs, organics handling and management are evaluated in terms of meeting diversion goals as well as in terms of composting operations being cost competitive. Emerging trends are presented for those evolving composting programs that are becoming more widely accepted by the public.

Following the closure of the local composting facility in 2002, the System entered into a contract with Waste Management of Washington in February 2003 to compost the community's yard waste. Yard waste collected throughout the county is hauled to System facilities, and from those points Waste Management hauls the material to a contracted composting operation located outside of the county.

5.3.1 System Composting Facilities and Programs

Initially, the System located a composting operation in the county as a way to provide a conveniently located and easily accessible composting facility for local citizens. An additional advantage to a local operation was the benefit of using the generated composted

materials locally to improve soils, lawns, and gardens. This composting service was provided by a private company, who constructed the facility and contracted with the System.

The first operation with O.M. Scott began in November 1993. O.M. Scott produced high-quality compost materials. Their compost products were in such high market demand that production could not keep up with demand. Unfortunately, environmental air inversion conditions on the site pushed odors into neighboring properties.

As a result, the System, O.M. Scott, and the neighboring residents agreed to various settlements. Neighboring plaintiffs received monetary settlements and agreed to either sell their homes to the System or sign an odor easement. O.M. Scott ceased operations and participated in the cost of settlement with the neighbors.

A second effort in 2000 by Norcal, Inc., resulted in operations that controlled odors and also produced a high-quality compost. However, in 2002, the Norcal operation was officially closed due to contamination of incoming materials with Clopyralid, an herbicide applied by commercial pesticide applicators. Clopyralid is a persistent broadleaf herbicide that does not break down during the composting process. The contaminated finished compost could not be sold because it caused plant damage. The System is currently engaged in a class action suit to recoup damages from Dow Chemical Company, who produces Clopyralid.

The System subsequently issued another request for proposals for regional composting services, eventually contracting with Waste Management of Washington. Under this contract, Clean Green yard waste is either collected in residential curbside programs or delivered by citizens to the WTE facility or the North County or Valley transfer stations. Waste Management contracts with various subcontractors to provide transportation from System facilities to a processing location where Clean Green yard waste is transformed into compost. When the composting process is complete, the final screened product is sold in the wholesale market.

5.3.1.1 System Composting Programs

Clean Green

Clean Green is the System composting program that encourages citizens to divert yard waste from disposal so that it can be composted. Yard waste includes leaves, weeds, pruning waste, grass clippings, brush, sod (under 3 inches thick, without rock and as much dirt shaken out as possible), and woody materials up to 3 inches in diameter and 6 feet in length. It does not include dirt, rocks, animal waste, food or kitchen waste, garden tools, lawn furniture, or hardscaping (such as fencing or trellises).

All System collection sites are open seven days a week, 7:00 a.m. to 4:30 p.m. Extended operating hours are applied on certain days of the week from April 1 to September 30. Clean Green fees are reduced after 3 p.m. on days with extended hours. Collection sites are closed on six holidays (New Year's Day, Memorial Day, 4th of July, Labor Day, Thanksgiving Day, and Christmas Day).

The System offers a financial incentive for recycling yard waste. The Clean Green tipping fee is less than for regular trash. For 2004, the Clean Green fee was $35 per ton rather than

$98 per ton for regular trash, with the first 100 pounds free during all operating hours from October through March, and during special operating hours from April through September.

In 2004, Spokane County composted and diverted from disposal about 45,900 tons of yard waste. An additional 4,000 tons of organics (food and yard waste) are estimated to have been diverted through home composting and vermiculture bins (Tresko 2006).

Master Composters

The System encourages home composting as an economical and convenient alternative to bagging yard debris for disposal. To that end, the System sponsors the Spokane Master Composter Program.

Training is provided annually to citizens who are interested in learning more about home composting and then volunteering to help teach others. Master Composters provide educational seminars, help staff System booths at home shows, and sponsor the popular biannual Compost Fair that provides hands-on learning and a free compost bin to County residents. No different than the process that occurs in commercial composting, home composters take ordinary green and brown yard waste and transform it into a superior soil amendment. Home composters are taught that compost improves the health of plants, enhances the water-holding ability of soil and is an attractive mulch that promotes weed and erosion control. Using compost in yards and gardens improves soil and plant health while saving money and resources. Worm composting, another type of home composting, is also promoted to recycle kitchen scraps, and is included in the System's Home Composting education program.

The Green Zone

The Green Zone is a public learning center that supports "earth-friendly" ideas and alternatives compatible with the Inland Northwest lifestyle. The Home Composting Demonstration Site features many styles of compost bins, including some built from recycled plastic lumber (see Section 4). Water conservation, aquifer protection strategies, and xeriscaping are also among The Green Zone's offerings.

5.3.2 County Composting Programs

Yard waste can be picked up in the unincorporated areas of the County that receive curbside recycling service by the certificated waste haulers. Waste Management provides subscription curbside yard waste collection to anyone who requests the service in its service area and within the service level requirements. The service is provided weekly from March through November and monthly from December through February. Citizens may also self-haul yard waste to the System's yard waste collection sites at the North County or Valley transfer stations or at the WTE facility.

5.3.3 Municipal Composting Facilities and Programs

5.3.3.1 City of Airway Heights

Airway Heights has a roll-off yard waste collection container for its citizens to use. Materials collected are hauled by Waste Management to the WTE yard waste collection area and composted through the System's Clean Green composting program.

5.3.3.2 City of Cheney Composting Facility

Free yard waste drop-off is available to the residents of the City of Cheney only. Commercial landscape businesses located inside and outside of Cheney may also drop off of yard waste material by obtaining a permit to do so. Commercial landscape businesses are required to pay an annual permit fee along with a yard waste use fee.

The yard waste drop-off site is located next to the Cheney Recycling Center at 100 Anderson Road. Yard waste is collected from early March through the Thanksgiving weekend.

The yard debris collected at the Cheney Recycling Center is hauled out to Cheney's wastewater treatment plant. Cheney also receives yard waste brought to the wastewater treatment plant by the Cheney Parks Department and the Cheney School District.

This material, along with the material from the Cheney Recycling Center, is run through a tub grinder, and serves as an excellent bulking material when mixed with biosolids to create biosolid compost sold under the name of EcoGreen.

EcoGreen is only sold on Fridays from 12:00 p.m. to 3:00 p.m. during the same months that the yard waste drop off site is in operation. For more information, visit Cheney's website: http://www.cityofcheney.org/site/departments/works/solid_waste.

In 2004, the Cheney Recycling Center collected 9603 tons of yard debris. Cheney School District and Cheney Parks Department supplied another 609 tons of yard waste, for a total diversion from disposal of 10,212 tons of yard debris.

The following yard waste materials are acceptable for composting in Cheney's composting program:

- Leaves.
- Grass clippings.
- Pinecones.
- Pine needles.
- Weeds (except herbicide tainted material).

Brush, prunings, and branches are also acceptable yard waste material, but must be no larger than 2 inches in diameter and 4 feet in length.

5.3.3.3 City of Medical Lake

Medical Lake collects yard waste at their recycling facility. The drop-off service is available to residents from March through November 15, or until the first snowfall stays on the ground. Medical Lake Public Works hauls the yard waste in their collection trailer to the WTE facility. From there, the WTE facility incorporates it with the other Clean Green.

5.3.3.4 Residential Curbside Programs

Fairchild Air Force Base residents receive curbside collection of yard waste as part of their normal curbside service. The cities of Deer Park, Liberty Lake, Millwood, Spokane, and Spokane Valley have curbside collection of yard waste available by subscription through their solid waste hauler. The services are provided weekly from March through November, and

monthly from December through February. Material is transported to System sites to be incorporated with other Clean Green.

5.3.4 Private Facilities

There are no private composting facilities permitted in the County.

To operate a compost facility with 250 or more cubic yards of yard debris and other permitted feedstock or compost on-site at any one time requires a permit obtained from the Spokane Regional Health District (SRHD), as described in WAC 173-350. The materials must be placed on an impervious surface. Precipitation run-on and runoff must be controlled. Other specific operational and monitoring conditions apply as well.

There are several private wood waste recycling facilities in Spokane County that grind wood waste for fuel. They are not allowed to accept non-woody yard debris feedstock (see 5.2.7 Private Recycling Facilities, above).

5.4 Recycling Markets and Emerging Trends

5.4.1 Recycling Markets

Processors of recyclable materials in the Spokane area generally enjoy access to markets for materials in the Pacific Northwest, and growing access to Pacific Rim markets through the ports of Seattle and Tacoma. Some markets may be accessed directly while others may require the use of a broker or agent. Market conditions for recyclable materials will fluctuate through out any given year. Recent demand for recyclable materials over the past 24 months has been steady to strong and commodity pricing has been favorable with the exception of Old Corrugated Containers which weakened in the fourth quarter of 2005. Demand for materials is in constant shift as consuming mills change. Currently, there is consolidation in the U.S. paper manufacturing industry and growth in this area in the Pacific Rim, especially China. This is causing a change in the destination of some recycled paper. Locally, a consumer of aluminum cans has quit accepting that material due to cutbacks in operation. An overview of the current markets being accessed by recyclables processors in the Spokane area is shown in Exhibit 5-8.

EXHIBIT 5-8
Markets for Recyclables

Material	Market
Newspaper	Local newsprint mill Spokane area insulation companies Other Washington, Oregon, and British Columbia pulp and paper mills Pacific Rim paper mills
Cardboard	Washington, Oregon, and British Columbia paper mills Pacific Rim paper mills
High Grade	Washington and Oregon mills (tissue, linerboard); British Columbia paper mills Pacific Rim paper mills
Mixed Paper	Oregon mill (chipboard) Washington and British Columbia paper mills\Pacific Rim paper mills

EXHIBIT 5-8
Markets for Recyclables

Material	Market
Glass Containers	Portland, Oregon, and Washington bottle plants/ manufacturers Canadian glass and fiberglass plants
Refillable Bottles	Northwest breweries
Plastic	U.S. and Canadian resin reclaimers and manufacturers Pacific Rim reclaimers and manufacturers
Scrap Metals Steel cans	 Seattle, Washington detinning plant Canadian steel mills Pacific Rim steel mills
Aluminum cans	Aluminum reprocessing mills, Colorado, Idaho, Tennessee
Ferrous metals	Aluminum reprocessing mills, Colorado, Idaho, Tennessee
Nonferrous metals	Steel mills in Washington, Oregon Canadian steel mills Pacific Rim steel mills Mills in California, Washington, the Midwest Canadian smelters Pacific Rim smelters
Yard Waste	Royal Organic Products, Washington

5.4.1.1 Summary of Recycled Commodities

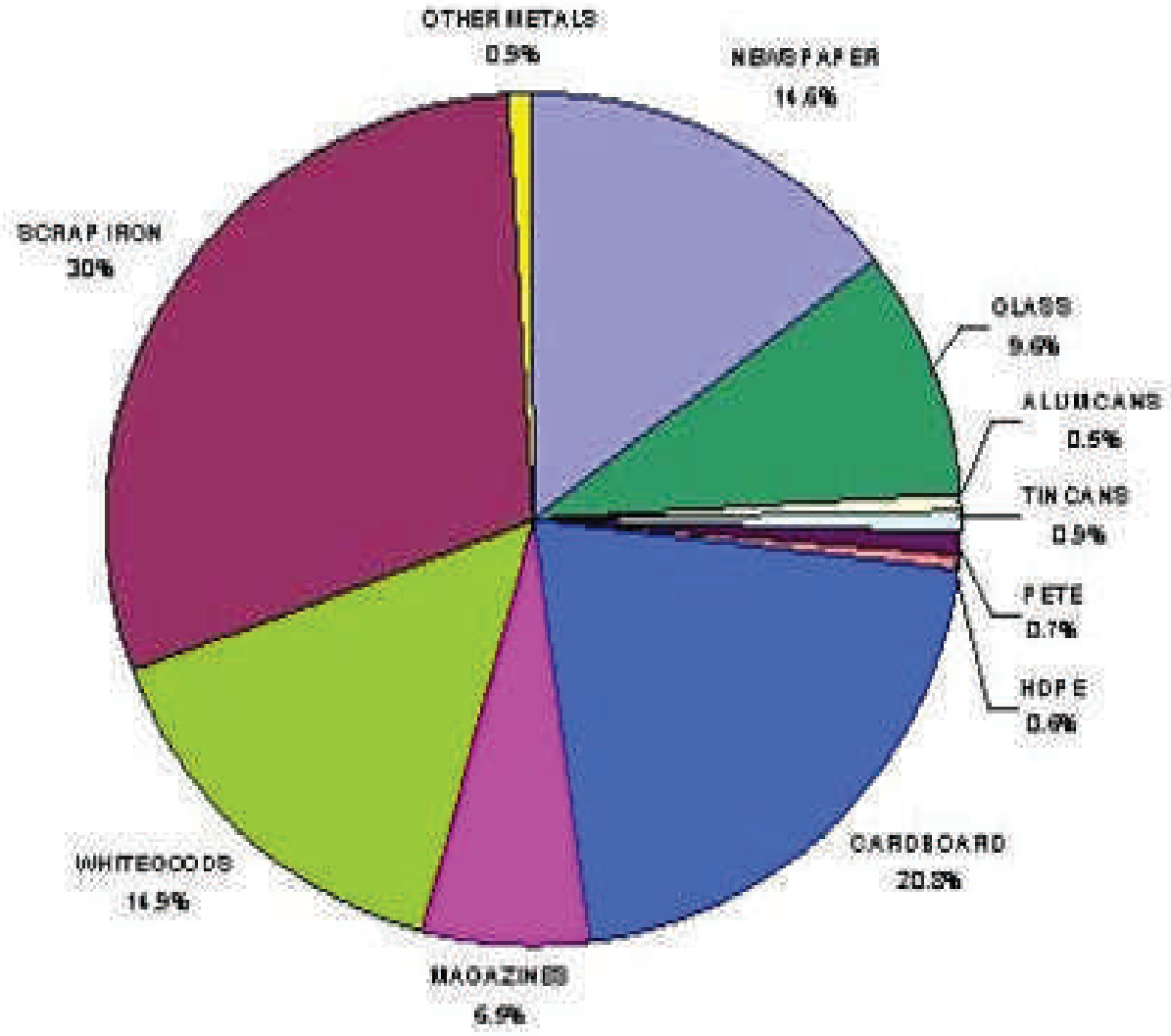
Exhibit 5-9 provides 2004 estimates of materials diverted from the waste stream in Spokane County. The estimates indicate recycling rates for major commodity groups: paper, plastics, glass, ferrous metals, nonferrous metals, organics, construction debris, other wastes, hazardous materials and special wastes. In 2004, an estimated 44 percent of Spokane County's waste was removed from final disposal through recycling.

5.4.2 Emerging Recycling Programs

5.4.2.1 Electronic Waste Recycling Program

Electronic waste refers to discarded computers, monitors, printers, fax machines, cell phones, electronic cables, and other electronic products. The 2006 Washington State Legislature passed Engrossed Substitute Senate Bill 6428 establishing an electronic product recycling law for the state. The law requires manufacturers of electronic products to provide consumer-convenient recycling services throughout the state no later than January 1, 2009. These services are to be provided to households, small businesses, small local governments, charities and school districts. Electronic products that are included are televisions, computers, computer monitors and laptop and portable computers. The Department of Ecology is writing rules to implement the new law. The System is monitoring the rule making process, which will determine manufacturers' level of involvement with local jurisdictions in the collection and end processing of the materials. Updated information on the law and rules are on Ecology's Electronic Waste webpage http://www.ecy.wa.gov/programs/swfa/eproductrecycle/. Exhibit 5-7 lists the business locations that accept and recycle or reuse electronic materials.

EXHIBIT 5-9
Source: *Spokane Regional Solid Waste System, 2004 Annual Report, 2005*



As the production and use of electronic products continues to grow, the challenge of recovery and disposal is becoming significant. Computer monitors and older TV picture tubes contain an average of 4 pounds of lead and require special handling at the end of their lives. In addition to lead, electronics can contain chromium, cadmium, mercury, beryllium, nickel, zinc, and brominated flame retardants.[i]

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

- Conservation of disposal resources.
- 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[ii] 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 are 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.

5.5 Key Issues

5.5.1 Designation of Recyclable Materials

The 1999 planning guidelines issued by the Department of Ecology require planning jurisdictions to designate certain recyclables for inclusion in public recycling programs. The guidelines require that solid waste management plans identify and apply criteria for evaluating various commodities to determine which recyclables can be efficiently and economically collected and marketed.

Recyclable commodities in Spokane County are shown in Appendix G. This list will be considered the designated recyclables for the purpose of meeting the Department of Ecology's planning guidelines.

The addition or deletion of materials accepted for recycling will require ongoing evaluation and will be based on several factors such as market stability, and collection and processing costs. As required by the planning guidelines, criteria should be developed for adding or removing materials from the above list of materials. To allow for maximum flexibility changes in the process or criteria for establishing designated recyclable materials will not require a Plan amendment.

Considerations for adding new materials will include:

- 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 efficiently and has minimal processing requirements.
- The material has been legislatively mandated to recycle or divert from disposal.
- The material meets Ecology's definition of a recyclable commodity.
- Other conditions not anticipated at this time.

Considerations for removing materials will include:

- The costs to collect, process, and/or ship to recycling markets outweigh the operational or resource management benefits of diverting the material from disposal.
- No market can be found for an existing recyclable material, causing the material to be stockpiled with no apparent solution in the near future.
- Its addition back into the disposal stream does not adversely affect long-term disposal capacity, costs, operations or infrastructure.
- Other conditions not anticipated at this time.

It is unlikely that any existing recyclables would be removed from the current collection program barring a sudden shift in market conditions. It is more likely that additional markets might become available for materials not currently recycled.

The process for including or deleting materials from the Designation of Recyclable Materials is as follows:

- SWAC will be the reviewing committee to recommend the addition or removal of materials from the Designation of Recyclable Materials. Parties interested in adding or removing materials from the Designation of Recyclable Materials will solicit the chair of SWAC to make a presentation to the committee.

5.5.2 Service Level 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.
- This Plan uses the following designations to determine the level of services provided to residents:

- Level 1 - A housing density equal to 3.5 dwellings per acre or are within a contiguous area with a population of 10,000 or more. Weekly recyclables collection is provided to residents.
- Level 2 - A housing density of less than 3.5 dwellings per acre or are within a contiguous area with a population of less than 10,000. Collection of recyclables may be available/drop-off facilities are available.

5.5.3 Composting

The 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." The State has established a goal to eliminate yard debris from disposal by 2012 in those areas where alternatives exist.

In 2004, Spokane County diverted 45,900 tons of yard waste from disposal by using a private composting facility. Based on the waste flow analysis conducted for the 2009 Plan Update, this equates to approximately 42% percent of the amount of yard waste generated in the region.

The System actively promotes backyard composting as a waste reduction method. However, not all residents have the ability or desire to compost their yard waste at home. For those residents, collection services or drop-off options are important.

5.6 Alternatives

Residential

1. Continue to strive to satisfy the State's priorities for recycling.
2. Periodically evaluate existing recycling programs to determine the feasibility of adding new materials or removing materials that are no longer economically feasible to collect.
3. Monitor public education efforts to maintain the current success as well as increase the amounts of materials diverted for recycling and composting.
4. Monitor and respond to Washington's electronic waste recycling law ESSB 6428.
5. Assess multistream recycling collection systems.
6. Expand voluntary curbside or drop-off collection of recyclables to rural areas.
7. Evaluate front-end processing of waste to improve recovery of material prior to incineration.
8. Evaluate the current residential recycling system for potential improvements that will increase diversion at the lowest cost with the highest effectiveness.
9. Explore technology to distill all plastics together for recycling.

Commercial Recycling

10. Continue to support and encourage private efforts to divert recyclable materials from commercial sources.
11. Continue to encourage non-residential recycling through local ordinances, policies, procedures, incentives, technical assistance, and recognition programs.
12. Encourage food waste management by the commercial sector.
13. Establish a Recycling Market Development Zone in Spokane County.
14. Establish a Resource Recovery Zone in Spokane County.

Composting

15. Expand yard waste collection efforts.
16. Build a local facility for municipal compost.

Public Recycling

17. Provide recycling at public venues and events.
18. Provide centralized neighborhood recycling bins.

5.6.1 Residential Recycling

1. Continue to strive to satisfy the State's priorities for recycling.

Washington State's goal is to achieve a statewide recycling and composting rate of 50 percent by 2007. In 2004, the State recycling rate achieved was 42 percent. The State's recycling rate is based on municipal solid waste as defined by the Environmental Protection Agency and includes durable goods, nondurable goods, containers and packaging, food wastes, and yard trimmings. It does not include industrial waste, inert debris, asbestos, biosolids, petroleum contaminated soils or construction, demolition, and landclearing debris disposed of at municipal solid waste disposal facilities.[iii]

Ecology also calculates a diversion rate by measuring non-MSW recyclables that are diverted from disposal such as asphalt, concrete, and construction, demolition, and landclearing debris. The tonnages for these materials are combined with recycled MSW tonnages for a total diversion rate.[iv] This rate for Washington State was 48 percent in 2004.

The System has had 21 years of experience in implementing a recycling program to meet the requirements of RCW 70.95 and the State's recycling goals. The System achieved a 44 percent recycling rate in 2004, up from 43 percent in 1998, with an average recycling rate of 41 percent since 1993. This rate was achieved through the combined efforts of solid waste haulers, recycling businesses, the County, cities and towns, military base, and the System. Even though the program has grown considerably, there is still opportunity for continued growth.

Though a recycling rate goal has not been established for this plan, the System should continue to monitor recycling and diversion progress as a means to measure effectiveness of recycling programs.

2. Periodically evaluate existing recycling programs to determine the feasibility of adding new materials or removing materials that are no longer economically feasible to collect.

Presently, the drop-off centers operated by the System do not offer collection for high-grade paper, computer paper, or mixed paper. The collection of mixed paper (a clean, sorted mixture of various qualities of paper—containing less than 10 percent of groundwood content)[v] could be considered for collection at drop-off centers, since it is a stream that is typically available from residences and it easy to explain to users. It also typically accounts for a large segment of the residential paper stream.

Mixed paper generally includes the following:

- Household papers, including junk mail and office paper (may not be contaminated with food or moisture).
- Chip board or boxboard (cereal boxes).
- Magazines and catalogs.
- Phone books.

The particular "mix" chosen for the System will depend primarily on agreements with local brokers or markets. Both the end product and the technology that a mill uses determine what types of paper it can use.

The costs to the System for collecting these materials would be the costs for drop-off containers, with additional costs for administration, education and outreach, and labor.

3. Monitor public education efforts to maintain the current success as well as increase the amounts of materials diverted for recycling and composting.

The results of the waste composition study provided an indication of the amount of recyclables still being disposed. Based on the results, current education programs should be examined and messages updated to target currently collected recyclable materials being disposed by residents (see Waste Flow Analysis, Section 2).

4. Monitor and respond to Washington's electronic waste recycling law ESSB 6428.

The past decade has seen swift growth in the manufacture and sale of consumer electronic products. Advances in technology have led to better, smaller, cheaper products. Industry analysts give every indication that the trend toward rapid introduction of new electronic products will continue.

The passage in 2006 of Engrossed Substitute Senate Bill 6428 establishing an electronic product recycling law for Washington State will impact on the role the System will have in the recovery of electronics in the future. Draft rules were released November 2007. Manufacturers will involve local jurisdictions, businesses, and nonprofits in the recycling plans. Manufacturers are encouraged to use local collection, storage, and recycling infrastructure, but ultimately their choices will depend on cost, efficiency, and quality

standards. The law has requirements for both manufacturers and local government to be responsible for education about the program. There may also be a role for the System to promote or provide recycling programs for other electronics not covered in ESSB 6428 such as cell phones, printers and peripherals, and equipment such as CD players, VCR's, and audio equipment.

5. Assess multistream recycling collection systems.

Many curbside programs in the State are implementing multistream collection systems in an effort to reduce collection costs and increase collection of recyclables. Under this approach, commingled recyclables are placed into one or two containers. Recyclables are then sorted after delivery to a material recovery facility ("clean" MRF).

Some evidence suggests that the convenience of not having to sort recyclables leads to increased participation by residents. Some studies note, however, that container capacity, not less sorting, is the significant factor in determining the amount of materials set out at the curb.

Because collecting recyclables is the curbside recycling hauler's biggest expense, gathering materials in one container, instead of several, leads to lower collection costs. Some communities have had capital costs for buying new carts. Lowered collection costs, however, can be negated by increased processing costs and, if necessary, the cost for building a MRF to sort the recyclables. Capital and operations costs for a clean MRF vary depending on the level of technology used at the facility but typically fall in the range of $10,000 to $22,000 per ton of daily capacity. Operations and maintenance costs can range from $20 to $60 per ton, exclusive of revenues gained from marketing recycled materials.

Problems that arise with this form of collection include:

- Contamination resulting from more non-recyclable materials being put into the recycling carts. A study of 70 multistream facilities found an average "residue percent" of 16.6 for multistream, compared to 4.3 for source-separated collection systems.[vi]
- Cross contamination between grades and types of recyclable materials.
- Recycling processors experience an increase in maintenance and repair costs to their equipment due to damage from contaminants.

Glass contamination is a major contributing factor to the problems noted above from materials produced from multistream collection that commingles glass with the other commodities. In many instances, this issue can be remedied by removing glass from collection or collecting glass separately or through drop off programs. In the City and County of Spokane however it is desirable to recycle glass as it is much less expensive to recycle this material than to dispose of it through the WTE facility. Glass also presents operational problems during the incineration process.

The Department of Ecology noted that the multistream trend was particularly evident in the state in 2003 as new sorting facilities and procedures were put into operation.[vii] In most cases, programs that changed to commingled collection also increased the range of materials collected. Compared to source-separated collection programs, the multistream programs

showed increases of about 10 percent in the volume of material collected.[viii] However, Ecology noted that this practice was producing mixed results where end markets are concerned. Reports from mills are showing that the contamination from these programs can be so great as to reduce the usable amount of material by up to 15 percent.[ix] Contaminates are often sent to disposal facilities outside of the jurisdiction's disposal system.

The Department of Ecology, in conjunction with local governments, has outlined the issue in a considerations document entitled "Single Stream Versus Source Separation: Considerations Document for Local Government."[x]

6. Expand voluntary curbside or drop-off collection of recyclables to rural areas.

In the unincorporated areas of the county, residential recycling collection is not available. Residents may choose to self-haul their recyclables to a drop-off location, but those are often not conveniently located nearby.

The collection and transportation of recyclable materials from single-family and multifamily residences is regulated under RCW 81.77 and RCW 36.58. Under these statutes, counties have the authority to directly regulate the collection of source-separated recyclable materials. There are two primary mechanisms available to Spokane County to provide recyclables collection in unincorporated areas:

- Counties may contract with private vendors to provide recycling services to residences. Counties that choose this option assign service territory, establish and enforce service standards, and set rates.
- Counties may notify the WUTC to implement the provisions of a recycling element of a comprehensive solid waste management plan. If a county chooses this option, the WUTC-regulated haulers will provide the recycling services specified in the solid waste plan, but under the economic and service regulation of the WUTC. To pursue this option, the County is required to adopt a service-level ordinance establishing the types and levels of service to be provided. Additionally, the ordinance can encourage rate structures that promote waste reduction and recycling activity. Prior to adoption, a service-level ordinance option needs to be included as part of a county's solid waste management plan.

Spokane County uses the latter mechanism. County staff could investigate further the possibility of providing collection for recyclables, particularly in areas that are increasing in population density and for those county residents currently receiving residential trash collection. Self-haul options could still be made available for residents not choosing collection services.

Access to recycling services is also limited in several of the smaller rural cities. The towns of Fairfield, Latah, Rockford, and Waverly have neither curbside recycling collection nor in-town recycling drop off facilities. These towns have chosen to default to the County's service levels. Each town could contract with a private recycler to provide a collection container for recyclables similar to the City of Spangle.

System staff should establish a committee made up of rural area and small outlying cities and towns' citizens, System staff, County staff and industry representatives to evaluate design, cost and logistics of a rural area recycling program. This program could take many forms,

such as strategically located compartmentalized drop boxes or community recycling collection events on specific days.

7. Evaluate front-end processing of waste to improve recovery of material prior to incineration.

A front-end processing facility, using a combination of manual and mechanical sorting, would allow the removal of non-separated recyclables and bulky, non-combustible materials from the waste stream. This facility would essentially operate as a "dirty" MRF.

For a typical front-end processing facility, mixed waste is dumped on the tipping floor and pushed onto a below-ground conveyor by a front-end loader.

Usually, residential waste must go through a bag-breaking operation. Screening drums or other special equipment such as air classification units are used to separate the mixed waste stream generally into size classifications: an undersize stream (fine particles and aggregate materials) and an oversize stream that contains recyclables and other large objects.

Ferrous metal is typically removed by an overhead electromagnetic separator. After passing through the magnet, the remaining waste often proceeds onto hand sorting conveyors. These are elevated, slow-moving conveyors that allow sorters to select recyclables and drop them into chutes leading to storage bunkers or processing equipment. Hand-sorting can be reduced or eliminated by using a high level of mechanical technology and by limiting the scope of commodities recovered.

The remaining waste can be further processed as a means to reduce the incinerator's air emissions (for example a trommel screen to remove items such as button batteries) or to reduce facility maintenance. After final processing, remaining wastes are diverted back to the tipping floor for combustion.

Capital costs for such a facility are variable and dependent on the level of mechanization and sophistication of the facility. A typical capital cost range is $20,000 to $30,000 per ton of daily capacity. Operations and maintenance costs typically range from $40 to $60 per ton of waste processed.

Similar to clean MRF's, contamination of recyclables can be a problem resulting in lower quality recyclables which are more difficult to market.

8. Evaluate the current residential recycling system for potential improvements that will increase diversion at the lowest cost with the highest effectiveness.

There is no "one" representative curbside recycling program; curbside programs vary greatly from community to community. A recent industry survey of municipal officials that operate curbside recycling programs conducted by the Aluminum Can Council found that:[xi]

- 68 percent of curbside programs pick up materials on a weekly basis, with most of the rest picking up every other week.
- 41 percent of recycling collection programs are single stream, and 22 percent are dual stream.

- The average participation rate (measured by set-out rate and reported by those with access to this information) is 58 percent.
- Two in ten communities expect to increase bin size in the near future.
- Approximately two in ten communities expect to change their programs to become either dual-stream (from a larger sort) or single-stream.

One trend that this survey highlights is that curbside recycling programs continue to change to improve efficiency and increase participation.

Spokane could also evaluate the current curbside program to look for opportunities to increase the quantity of recyclables collected with a minimum increase in the unit cost per ton or cost per household. Increases in diversion can be achieved by:

- Increasing the number of households served by curbside collection.
- Increasing the quantity of recyclables collected from households already served with curbside collection. This can be accomplished by increasing participation frequency and quality of participation (i.e., increasing capture and decreasing contamination).
- Implementing programs that either reward residents or penalize them.
- Increasing the size of the collection container to allow for more recyclables.

To keep costs from increasing requires a balance between changing household behaviors and increasing operational efficiencies. Operational efficiency is influenced by factors such as:

- Type of collection.
- Vehicle capacity (weight and volume).
- Productive time (time spent collecting versus driving/unloading).
- Physical properties of the targeted materials (determines whether vehicles meet weight or volume limitations).
- The collection container/method used to set out the materials.

A study undertaken by the City of St. Paul, Minnesota assessed recycling collection.[xii] Five collection methods were tested in different neighborhoods for a 4-month period and included components for education, sorting methods, types of containers used, pickup frequency, and addition of new materials. After measuring the costs, convenience, and environmental impacts, a recycling program was recommended. While the resulting recycling program developed for the City of St. Paul may not be suitable for Spokane, the methodology used by the study could be used as a starting point for evaluating options.

9. Explore alternative technologies for recycling commodities, such as distilling all plastics together for recycling.

5.6.2 Commercial Recycling

10. Continue to support and encourage private efforts to divert recyclable materials from commercial sources.

Economic incentives often provide impetus for businesses to recycle their waste as a means to reduce disposal costs. Businesses should be encouraged to avail themselves of private sector recycling collection opportunities through continued educational programs. There are several Chambers of Commerce in the County that can provide to new businesses locating to the region information about what materials are recycled in the area and who are the businesses to contact for service.

11. Continue to encourage non-residential recycling through local ordinances, policies, procedures, incentives, technical assistance, and recognition programs.

Many industry associations have taken on the role of promoting recycling within their industries. This is particularly true for large businesses where waste reduction and recycling provide opportunities to reduce overhead costs. It is often the smaller businesses that may lack information about opportunities and the role recycling may play in reducing disposal costs.

The Waste Reduction Assessment Program (WRAP) technical assistance visits should continue providing information on recycling opportunities that are not being used by the business.

Awards and public recognition can be used to increase motivation for businesses to recycle waste. Ecology offers awards through the Terry Husseman School Awards and the Environmental Excellence Award. Many communities publicly recognize and reward local businesses and organizations for their environmental achievements. For example, the System could host special events, publish case studies, and help businesses and organizations attract positive press.

12. Encourage food waste management by the commercial sector.

Many restaurants, institutions, supermarkets, and food suppliers often have leftover food, which can be a good candidate for diversion to meet the State's recycling goals as well as provide greater uses for this resource. Food waste accounts for 15 percent of the region's waste disposed. 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.

There are several businesses in Spokane County that report food waste and rendering tonnages in their annual recycling survey to Ecology, but other than food bank activities, there is currently no structured food waste management program or food composting operation. The suggested order for management of food waste is: (1) food donation; (2)

convert to animal feed and/or rendering; and (3) compost. Local establishments should be encouraged, through educational efforts, to follow this hierarchy when possible. Local haulers could also be encouraged to offer food waste collection services to commercial customers.

- Food Donation: Food that is not wanted and in edible condition may be donated to a food bank. This can include excess food prepared at a restaurant, excess produce or bread from a supermarket, or packaged food that may be about to expire. Food banks typically set standards to guarantee food safety.
- Animal Feed: Food waste may be used as a source of nutrition for animals. Food waste can either be processed minimally and fed to animals or fully processed to remove excess moisture and condensed into small pellets. For this to be a viable option, the food waste must be free of contaminants such as plastics, beverage containers, straws, and utensils.
- Rendering: Rendering companies process animal by-products into saleable commodities. Grease, fats, and oils from restaurants are common by-products collected and processed. Many companies also will accept meat, fat, bone, and carcasses.
- Compost: Food waste that is not fit for food donation or consumption by animals can be suitable for composting. Food wastes require proper source-separation and proper containers to deter odors prior to collection. Again, the waste must be free from plastic, glass, and other contaminants. Food can be collected and sent to a composting facility generally as part of a separate collection route, as well as composted on-site with commercially available vessels.

13. Establish a Recycling Market Development Zone in Spokane County.

Spokane County could consider a "Recycling Market Development Zone" as a means to attract businesses that manufacture products using waste materials, and also create jobs and tax revenue for the region, by offering profitable incentives to those manufacturers. Such a program could be modeled after that used in California.

The California Integrated Waste Management Board's (CIWMB) Recycling Market Development Zone program combines recycling with economic development to fuel new businesses, expand existing ones, create jobs, and divert waste from landfills. This program provides low-interest loans, technical assistance, and free product marketing to businesses that: (1) process secondary materials or use materials from the waste stream to manufacture their products; and (2) are located in one of the specially designated geographical zones throughout California. These designated zones cover roughly 71,790 square miles of California from the Oregon border to San Diego.[xiii]

Assistance offered by the CIWMB includes:

- Loans: The purpose of these loans is to promote market development for waste materials. CIWMB funds up to 75 percent of the startup costs, up to $2 million per business, for qualified recycling-based businesses (one that manufactures a recycled content product).
- Technical Assistance: Businesses are provided information on sources of secondary materials and processes, markets, technology, and useful organizations.

- Marketing Support: In addition to a state-wide buy recycled directory, the CIWMB operates an online "RecycleStore" to showcase innovative recycled-content products.

Assistance is provided by local zone administrators and the Board's Referral Team. Additional local government incentives, which vary from jurisdiction to jurisdiction, may include:

- Less stringent building codes and zoning laws;
- Streamlined local permit processes and siting assistance; and
- Reduced taxes and licensing.

Companies that have used the Recycling Market Development Zone program include a nonprofit e-waste recycler, an organic material recycler, a vermiculture and vermicomposting operation (using worms), a tire recycling business, and a construction and demolition debris hauling and recycling firm.

14. Establish a Resource Recovery Park.

Spokane County could investigate the feasibility of establishing a Resource Recovery Park to attract reuse, recycling, and/or composting businesses. Such a development demonstrates a commitment and support for these businesses.

A Resource Recovery (RR) Park combines unique waste reduction and recycling concepts with traditional industrial park development. It is essentially the co-location of reuse, recycling, compost processing, manufacturing, and retail businesses in a central facility. The public can bring all their wastes and recoverable materials to this facility at one time; recover some value from their discards; and also purchase innovative reused, recycled, or composted products. The park can serve as an incubator for businesses that reuse, repair, recycle, and compost materials diverted from the waste stream.

There is no definitive recipe or system for building RR Parks - the concept is still evolving. Examples of RR Parks highlighted in a case study by the CIWMB include: Cabazon Resource Recovery Park (Mecca, CA), Monterey Regional Environmental Park (Marina, CA), Urban Ore Resource Recovery Park (Berkely, CA) and Waste Management, Inc. Resource Recovery Park (San Leandro, CA).[xiv]

Generally, RR Parks operate on the cluster principle - the idea that similar businesses developing in a given location mutually benefit one another, such as those found in a typical shopping mall. There, specialized vendors of all sizes offer goods and services to crowds of customers. If run as isolated businesses, most of these enterprises would fail. But within the managed competition and cooperation of the mall environment, they thrive.

Potential companies that might locate in an RR Park include:

- Reuse: Drop-off or buyback center, salvage, repair, rehabilitation, refinish, rent, restoration, food banks, and retail sales for reuse items. These could include white goods (washers, dryers, refrigerators), brown goods (e.g., computers, TVs, electronics, and other small appliances), furniture, clothing, and latex paint. Companies might include: an electronics repair shop, a household appliance store, a reused furniture store, vintage

clothing and consignment shop, a household item thrift shop, a stove and porcelain refinisher, an antique restoration firm, and an eco-artist.

- Recycling: Drop-off, buyback, material recovery facilities, and manufacturing facilities for recyclable materials including paper, containers (glass, plastic and metal), textiles, scrap metals, plastics and tires.
- Organics: Collection and processing services for yard trimmings, food scraps, food-contaminated paper, wood, soils, and other putrescibles.
- C&D: Businesses collecting and processing construction and demolition (C&D) debris, deconstruction or dismantling, used building materials (e.g., scrap lumber, doors, windows, plumbing fixtures, and ceramics), concrete and asphalt recycling, and processors of roofing materials, bricks, and mixed demolition debris.

RR Parks can be developed through:[xv]

- Zoning of a district within a community specifically for such businesses.
- Siting of these businesses on or around a landfill or a transfer station.
- Renovating one or more abandoned buildings or industrial site (e.g., brownfield or military base for such businesses.
- Co-Promoting of nearby reuse, recycling and composting businesses.
- Master Plan to attract these types of businesses to an available site (like an auto mall).

The first steps Spokane County should undertake in exploring the development of a RR Park include:[xvi]

- Identify target wastes.
- Explore interest of local reuse, recycling, composting or recycled product businesses in expanding and/or participating in a RR Park.
- Identify other types of businesses that could be attracted to a RR Park to address targeted wastes.
- Identify estimated throughputs of materials and preliminary estimates of economics for proposed businesses.
- Identify policies and processes on how to respond to proposals to participate in the project (e.g., from recycling companies).
- Identify administrative structure, next steps to implement project, public and private roles, budget and timeline to accomplish.
- Identify policies and master plan to adopt locally in support of RR Park concept.
- Contact others who have developed or are developing RR Parks to learn how they approached this.

In summary, RR Parks conserve natural resources by processing and releasing materials back into the community, foster recycling market development, create local jobs and economic development, and lead to reduced costs for waste disposal.

5.6.3 Composting

15. Expand yard waste collection efforts.

The collection of yard waste still offers large diversion potential of urban and rural residential wastes. Collection services are offered in certain areas of the County, if requested by the homeowner. Residents should be encouraged to avail themselves of these services where available.

With the expansion of no-burn areas into the rural portions of the County, there is a need for expanded yard waste collection efforts.

System staff should establish a committee made up of rural area citizens and city staff, System staff, County staff, and industry representatives to evaluate design, cost, and logistics of a rural yard waste recycling program. SCAPCA and Ecology grants should also be solicited to fund these efforts.

16. Build a local facility for municipal compost

There is currently one local compost facility in Spokane County, operated by the City of Cheney for their residents as part of their biosolids management program. With proper permitting, any private operator could build and operate a local compost facility.

5.6.4 Public Recycling

17. Provide recycling at public venues

As the purchase of Code 1 PET plastic water, sport drinks and soda has increased, so has the behavior of taking these containers to public parks and event venues. These products are increasingly consumed in public places events rather than at home, there needs to be better access to recycling options at public places and events. The System should develop and distribute education material to businesses and sport and public venue organizations to support the recovery of recyclable material in public places and public events. The System could also loan public event recycling containers to organizations to encourage them to recover recyclables at their business or event.

18. Provide centralized neighborhood recycling bins.

Providing centralized neighborhood recycling containers would reduce collection costs for recycling containers. Contamination would be an issue, similar to contamination problems with multi-family recycling, where a small amount of contaminates can cause the entire container to be rejected and disposed.

5.7 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the recycling and composting alternatives discussed above leads this Plan to recommend implementing a progressive but monitored approach to recycling and composting activities. This approach will provide for continued progress toward meeting Washington State's 50 percent recycling goal, while maintaining a sustainable balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for further assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

The Plan supports the region's efforts in recovering recyclable material from the solid waste stream and endorses the recycling priorities and goals established by the State of Washington.

The Plan encourages an increased use of metrics to provide the necessary fact-based feedback upon which continued improvement can occur and recommends regular, recurring evaluation of existing recycling programs to determine the feasibility of adding new materials or removing materials that are not economically feasible to recycle.

However, it should be recognized that there could be a lower net cost to recovering recyclable materials and paying for their reentry into the commodities market or utilizing them in another beneficial application than it would be to dispose of them as a solid waste.

The Plan recommends continued examination of established residential recycling methods in the interest of increasing the amount of recyclable materials that is kept out of the waste stream and expanding the opportunity for greater participation in curbside or drop-off collection, particularly in rural areas. Simplicity is often the key to successful public participation in any substantive program. Therefore, modified alternative collection systems should be further examined as a potential means to increase residential recycling rates for both urban and rural areas.

The Plan recommends continued promotion of private efforts to further divert recyclable materials from commercial sources. Under RCW 70.95.020(7): "It is the intent of the legislature that local government be 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 recycling programs." Given this legislative intent, the System will encourage private sector solutions to present and future recycling and waste reduction challenges in Spokane County, including the incorporated entities that are signatories to the Plan. Contracted recycling should be considered either in lieu of or in addition to public recycling collection programs. Both public institutions and private enterprises could increase recycling through the establishment of a food-waste recycling program. Additionally, large public events and

special venues should offer greater opportunities for recycling through increased and more convenient placement of containers for collection.

Residential Recycling

1. Continue to strive to satisfy the State's priorities for recycling.

2. Periodically evaluate existing recycling programs to determine the feasibility of adding new materials or removing materials that are no longer economically feasible to collect.

3. Monitor and improve public education efforts to maintain the current success as well as increase the amounts of materials diverted for recycling and composting.

4. Monitor and respond to Washington's electronic waste recycling law ESSB 6428.

5. Perform study on costs and benefits of multi-stream and other curbside recycling systems. Use results to determine feasibility of changing curbside recycling systems from current three-sort system.

6. Assess voluntary curbside or drop-off recycling collection programs in rural areas. Provide results to collectors and rural jurisdictions.

8. Evaluate the current residential recycling system for potential improvements that will increase diversion at the lowest cost with the highest effectiveness.

Commercial Recycling

10. Continue to support and encourage private efforts to divert recyclable materials from commercial sources.

11. Continue to encourage non-residential recycling through local ordinances, policies, procedures, incentives, technical assistance, and recognition programs.

12. Encourage food waste management by the commercial sector.

Composting

15. Expand yard waste collection efforts, including construction of a local compost facility or other yard debris management systems.

Public Recycling

17. Develop program to facilitate recycling at public venues and events.

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[ii] Product Stewardship Institute. The Collection and Recycling of Used Computers Using a Reverse Distribution System: A Pilot Project with Staples, Inc., June 2005.

[iii] U.S. Environmental Protection Agency. Comprehensive Procurement Guidelines. Available at www.epa.gov/cpg.

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[v] Alameda County Waste Management Authority. More information available at www.stopwaste.org.

[i] *Solid Waste in Washington State—Thirteenth Annual Status Report,* Washington Department of Ecology, December 2004.
[ii] Ibid.
[i] U.S. Environmental Protection Agency. More information available at www.epa.gov/epaoswer/hazwaste/recycle/ecycling/index.htm.
[ii] End-of-life Electronic Products are either obsolete for their intended purpose or are no longer useful by the current user and lack any significant market value as an operational unit. Definition used by the Institute of Scrap Recycling Industries, Inc.
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[iv] Ibid.
[v] *Scrap Specifications Circular*, Institute of Scrap Recycling Industries, 2005.
[vi] *Single Stream: An Investigation into the Interaction between Single Stream Recycling Collection Systems and Recycled Paper Manufacturing*, Sonoma County Waste Management Agency, March 2003.
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[ix] Ibid.
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[xvi] Ibid.

SECTION 6

Solid Waste Collection

6.1 Introduction

Solid waste collection and transfer operations in Spokane County are coordinated with all elements and priorities of the Plan, including waste reduction and recycling (see Sections 4 and 5). Spokane County's goal is to "provide for efficient collection and transfer of municipal solid waste (MSW) and recyclables," with the following objectives:

- Ensure access to collection services for residences, businesses, and industry.
- Locate recycling facilities and System transfer stations to optimize service levels and transportation efficiencies.
- Recycle prior to WTE processing or landfill disposal.
- Encourage competition to reduce costs of collection and processing.

6.2 Existing Conditions

6.2.1 Legal Authority

The Washington Utilities and Transportation Commission (WUTC), municipalities within Spokane County, and the Air Force share legal authority for solid waste collection within the boundaries of Spokane County.

6.2.1.1 Washington Utilities and Transportation Commission Authority

RCW 81.77 gives the WUTC authority to supervise and regulate private solid waste collection companies operating in unincorporated areas of the county. These collectors are issued Certificates of Public Convenience and Necessity by the WUTC. Certificate holders have the exclusive right to collect specified types of solid waste (for example, solid waste or residential recyclables), within their certificated collection service area. In some places, the certificated areas may overlap for one or more types of collection. If a WUTC-certificated collector does not adequately serve its certificated area, a potential competitor may petition the WUTC for the right to serve that area. As a condition of holding a certificate, RCW 81.77.030 requires WUTC-certificated collectors to comply with conditions specified in the County Solid Waste Management Plan and related implementation ordinances. Additionally, the WUTC requires certificate holders to use WUTC rate structures and billing systems, and to provide collection and recycling services specified in the current Plan.

6.2.1.2 Spokane County Authority

RCW 36.58 requires counties to establish a system of solid waste disposal. Under Chapter 36.58A, counties may establish solid waste collection districts in unincorporated areas for the mandatory collection of solid waste.

Counties also may adopt regulations and ordinances governing the transportation, storage, and processing of solid waste, and establish bans or limitations on the disposal of certain materials.

RCW 36.58.040 states that counties may, "by ordinance, award a contract for collection of source separated recyclables from residences within unincorporated areas." If a county chooses this option, it "has complete authority to manage, regulate, and fix the price of the source separated recyclable collection service." Alternatively, a county may allow the WUTC "to carry out and implement the provisions of the waste reduction and recycling element of the approved County SWMP." RCW 36.58 also authorizes the County Commission to impose a fee to fund administration and planning expenses incurred in complying with the requirements of RCW 70.95.090.

RCW 70.95.160 provides for the establishment of minimum levels and types of service for any aspect of solid waste handling. In accordance with RCW 70.95.160, the Spokane Regional Health District updated the County's solid waste handling standards on February 26, 2004. These regulations govern the handling, storage, collection, transportation, treatment, utilization, recycling, and final disposal of all solid waste in Spokane County, including the issuance of permits and enforcement actions. To review the regulations, see: http://www.srhd.org/downloads/safety_environment/SolidWasteHandlingStandards2004.pdf.

6.2.1.3 Municipality Authority

County regulations and ordinances concerning minimum levels and types of solid waste services apply within the limits of cities unless a city adopts an ordinance that specifically limits the county's powers within its jurisdiction (RCW 70.95.160). A city may, by ordinance, adopt more stringent levels of solid waste management than required by the county at any time.

Under Washington State law, cities may choose one of the following options for managing solid waste collection. None of these options eliminate the right of citizens to haul their own waste, although citizens may be required to participate in a universal collection system and pay for collection service.

1. **City Contracted:** A city may enter into a contract with a private collection firm for collection of residential and commercial garbage, and residential recyclables. The contracted hauler does not need to hold a WUTC certificate or a franchise. Usually, such contracts are awarded on a competitive basis. The city regulates collection conditions and rates according to contract terms. The city may require that the contracted collection firm be licensed by the city.

2. **City Operated:** A city may operate its own collection system for residential and commercial garbage, and residential recyclables. In such cases, the city sets rates and has sole authority over all aspects of solid waste collection within its borders.

3. **WUTC Certificated:** A city may choose not to manage or regulate its own solid waste collection services. Collection services may be provided by private certificated collectors, subject to WUTC regulations.

According to RCW 35.13.280, the annexation of any territory into a city cancels any certificate granted by the WUTC for that territory. The newly incorporated area shall issue a franchise to the previously certificated collection firm to provide service for a term of not less than the remaining term of the original certificate 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. After 7 years, or the term of the franchise, the collection rights can transfer to the city. This 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 canceled 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. In addition, a city may implement universal collection. Under universal collection, a city may require residents and businesses to subscribe to designated solid waste collection services.

According to RCW 35.02.160, the incorporation of any territory as a city or a town shall follow the same guidelines as annexation under RCW 35.13.280.

6.2.1.4 U.S. Air Force Authority (Fairchild Air Force Base) Authority

U.S. military facilities are regulated under the Resource Conservation and Recovery Act, Section 6001. This federal statute requires military facilities to comply with all federal, state, interstate, and local laws. Thus, a county's regulations concerning minimum levels and types of solid waste services apply within the boundaries of military facilities. According to RCW 39.34, the county and the Air Force may enter into interlocal agreements. Also, the county and the Air Force both must comply with WAC 173-350 (Solid Waste Handling Standards) and 351 (Criteria for Municipal Solid Waste Landfills).

6.2.2 Recommendations of the 1998 Plan for Solid Waste Collection

Three recommendations of the 1998 Plan regarding solid waste collection in Spokane County continue to be followed:

1. Weekly collection service for refuse and recyclables should be available to all residential customers in Level 1 service areas.
2. The County should coordinate with WUTC staff to ensure that collection rates promote waste reduction and recycling to the full extent allowed under WUTC rate methodology.
3. The System should continue providing waste stream audits and encouraging the expansion of nonresidential recycling collection opportunities.

6.2.3 Collection Service Providers

There are various collection systems currently operating in both unincorporated and incorporated service areas of Spokane County.

The unincorporated areas are all served by private waste haulers (Exhibit 6-1 outlines specific areas of operation). The City of Spokane is the only municipal government that collects its own MSW through its Solid Waste Management Department. All other cities/towns in the County utilize private waste haulers. Fairchild Air Force Base also relies on a private waste hauler for collection of MSW, recyclables, and yard waste. Residents in the County have the option to subscribe to solid waste collection service, or self-haul solid waste, recyclables, yard waste, and household hazardous waste to the WTE Facility and to the Colbert and Valley Transfer Stations. Also, residents can self-haul recyclables to privately owned drop-off facilities and inert material to private inert landfills.

6.2.3.1 Unincorporated Areas

Solid waste collection in the unincorporated areas of Spokane County is provided to residents and businesses by four private collection companies that operate under certificates issued by the WUTC. The certificate provides each collection company with an exclusive collection certificate within a specified geographic area. The four collection firms (certificate number in parentheses) are:

- Empire Disposal Inc. (G-75).
- Newman Lake Disposal, Inc./Eric Holt (G-171).
- Sunshine Disposal and Recycling (G-199).
- Waste Management of Washington, Inc. (G-237).

Empire Disposal, Inc.

Empire Disposal provides solid waste collection services to a large unincorporated area located in the southeastern quadrant of Spokane County. Empire Disposal's service area also includes the cities of Latah, Fairfield, Rockford, Spangle, and Waverly, which are discussed below under Municipalities. Residents in Empire Disposal's service area have access to System recycling and HHW (household hazardous waste) drop-off facilities, as well as private recycling operations.

Newman Lake Disposal, Inc.

Newman Lake Disposal provides residential solid waste collection services in the unincorporated Newman Lake area in the east central portion of the County, north of Trent Avenue (State Highway 290) and bordering Idaho. Residents in Newman Lake's service area have access to System recycling and HHW drop-off facilities, as well as private recycling operations.

Sunshine Disposal, Inc.

Sunshine Disposal and Recycling provides non-residential roll off container service to east central Spokane County, and commercial and residential refuse collection service in northern and western Spokane County. Sunshine also provides residential and commercial refuse, yard waste, and curbside recycling collection services for the City of Deer Park as well as Fairchild Air Force Base, and residential and commercial refuse service for the cities of Airway Heights, Cheney, and Medical Lake. (see below).

Waste Management of Washington, Inc.
Waste Management of Washington offers weekly refuse collection service to customers in unincorporated areas of Spokane County, as well as the cities of Liberty Lake, Millwood, and Spokane Valley.

Waste Management offers weekly residential recycling and yard waste collection service to those unincorporated residents that live within the County's Service Level 1 definition, and to the residents in the cities of Liberty Lake, Millwood, and Spokane Valley. Yard waste collection is provided weekly for nine months of the year (March through November) and monthly during the winter months (December through February).

Self-Haul
Residential customers can self-haul waste, recyclables, yard waste, or household hazardous waste to the WTE Facility, or the North County or Valley Transfer Stations. In 2004, the minimum charge for refuse was $7 for up to 140 pounds, and $98 per ton thereafter. Business accounts at the Transfer Stations are charged slightly more to compensate for the cost of hauling the refuse to the WTE Facility: the minimum charge is $7.21 for up to 140 pounds, and $103 per ton thereafter (*System Tipping Fees*, 2005). Details of Transfer Station and WTE operations are in Sections 7 and 8, respectively.

Residents of the cities of Airway Heights, Cheney, Medical Lake, and Spangle can self-haul recyclables to recycling centers or drop-off containers located in their cities for the use of those residents only. Fairchild Air Force Base operates a recycling center on the Base. All residents in the County can self-haul to private recyclers which generally accept a wider range of commodities than public recycling facilities, and often pay for some of the materials dropped off. The Cheney and Medical Lake recycling facilities and the Airway Heights drop off area accept self-hauled yard waste, but only from their residents. Details regarding recycling, and yard waste drop off is contained in Section 5. Household hazardous waste is reviewed in Section 10. Exhibit 6-1 shows refuse collection service areas in the County.

6.2.3.2 Municipalities

Garbage collection services for residential, commercial and institutional generators are provided by several different haulers in cities in Spokane County. The residential collection services provided to each city are presented in Exhibit 6-2.

Liberty Lake, Millwood, Spokane Valley
Waste Management of Washington, Inc., offers weekly solid waste collection services to residential and commercial customers in the cities of Liberty Lake, Millwood, and Spokane Valley. In addition, Waste Management offers weekly curbside collection of recyclables to residents in Liberty Lake, Millwood, and Spokane Valley, which are located within its WUTC certificated collection area. Waste Management offers weekly yard waste collection service to Liberty Lake, Millwood, and Spokane Valley nine months of the year (March through November), and monthly service during the winter months (December through February).

EXHIBIT 6-1
WUTC Refuse Collection Service Areas of Spokane County

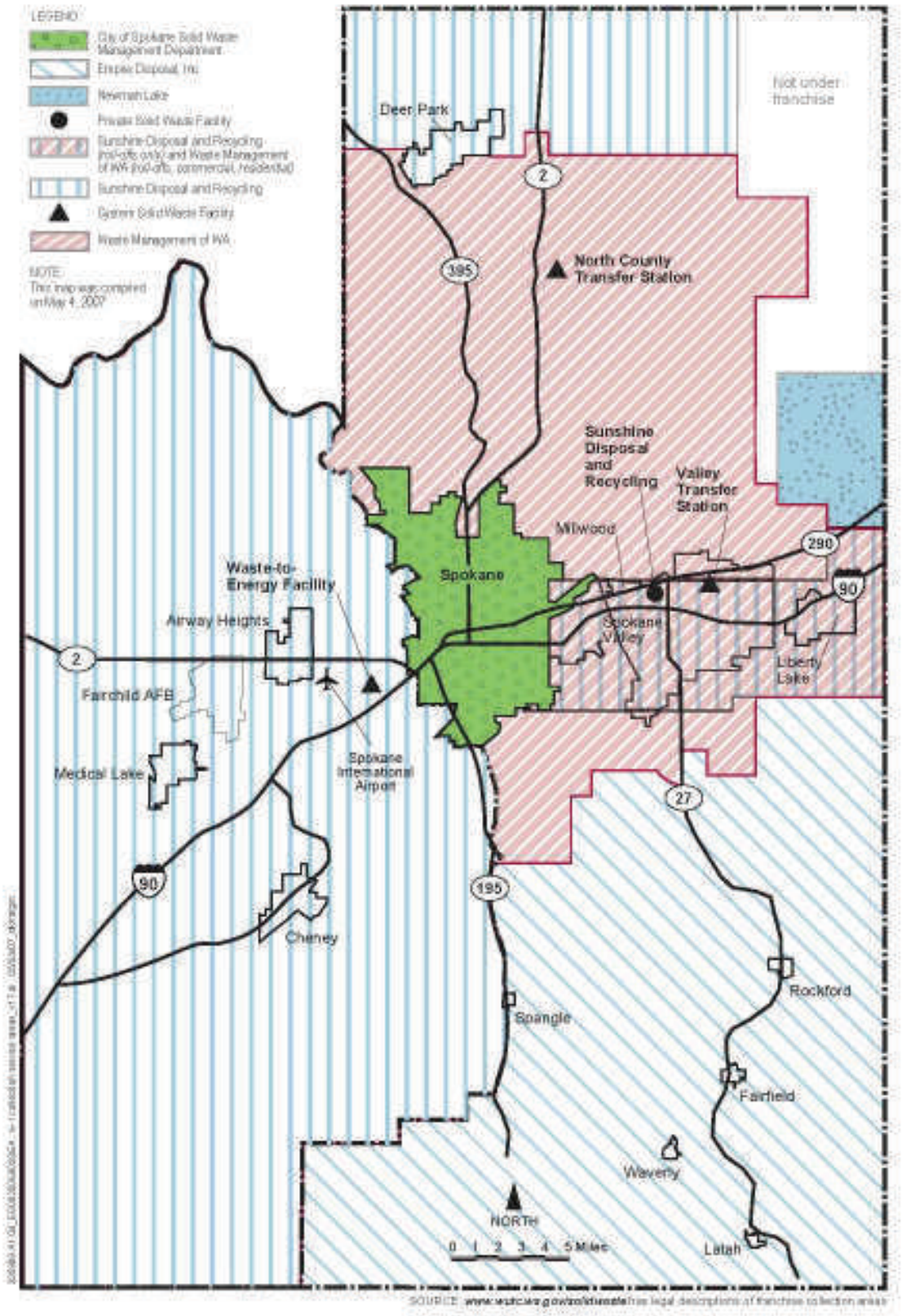


EXHIBIT 6-2
Residential Garbage Collection Summary

City/Town	Provider*	Curbside Collection			Drop-off Opportunity	
		Garbage	Recycling	Yard Waste	Recyclables	Yard Waste
Airway Heights	Sunshine Disposal[a]	Yes	No	No	Yes[b]	Yes
Cheney	Sunshine Disposal[a]	Yes	No	No	Yes[b]	Yes[b]
Deer Park	Sunshine Disposal[a]	Yes	Yes	Yes	Yes[d]	Yes[d]
Fairfield	Empire Disposal[c]	Yes	No	No	Yes[d]	Yes[d]
Latah	Empire Disposal[c]	Yes	No	No	Yes[d]	Yes[d]
Medical Lake	Sunshine Disposal[a]	Yes	No	No	Yes[b]	Yes[b]
Liberty Lake	Waste Management[c]	Yes	Yes	Yes	Yes[d]	Yes[d]
Millwood	Waste Management[c]	Yes	Yes	Yes	Yes[d]	Yes[d]
Spangle	Empire Disposal[c]	Yes	No	No	Yes[b]	Yes[d]
Rockford	Empire Disposal[c]	Yes	No	No	Yes[d]	Yes[d]
Spokane	City of Spokane[b]	Yes	Yes	Yes	Yes[d]	Yes[d]
Spokane Valley	Waste Management[c]	Yes	Yes	Yes	Yes[d]	Yes[d]
Waverly	Empire Disposal[c]	Yes	No	No	Yes[d]	Yes[d]
Fairchild AFB	Sunshine Disposal[a]	Yes	Yes	Yes	Yes	Yes[d]

[a] Contracted.
[b] City operated.
[c] WUTC certifiate.
[d] SRSWS facilities.

Airway Heights, Cheney, Deer Park, Medical Lake

Sunshine Disposal and Recycling, Inc. offers weekly solid waste collection to residential and commercial customers in the cities of Airway Heights, Deer Park, and Medical Lake. In addition, Sunshine Disposal provides weekly residential curbside yard waste and recycling collection services for approximately 1,200 customers in the City of Deer Park. Cardboard and office paper recycling (office pack) is offered to businesses on a subscription basis. 2004 residential collection rates for Deer Park customers were: 1 can ($12.14); 2 cans ($16.33).

Fairfield, Latah, Rockford, Spangle, Waverly

Empire Disposal provides residential and commercial solid waste collection services for the municipalities of Fairfield, Latah, Rockford, Spangle, and Waverly. Residents in Empire Disposal's service area have access to System recycling drop-off and HHW facilities, as well as private recycling operations.

Spokane

The City of Spokane's Solid Waste Management Department operates the only public solid waste collection utility in the County. Without a franchise from the City, no other institutional haulers are allowed to haul solid waste within the City of Spokane.

In 2004, City crews serviced 61,171 residential solid waste collection accounts with fully automated, side-load vehicles, and 2814 commercial solid waste collection accounts in front-loader, rear loader, and roll-off vehicles. Curbside recycling collection is offered to every single family residence, using side-loading vehicles. The City provided curbside recycling to approximately 750 commercial and multi-family accounts in 2004 through a subscription service. The City also provides yard debris collection to 13,263 subscribers.

Solid waste collected by the City of Spokane is delivered primarily to the WTE Facility, with some material going to the North County and Valley Transfer Stations, or to the Northside Landfill. Recyclables are delivered to one of two contracted processors. Yard waste is delivered to a private composting facility.

The City of Spokane charges customers for collection of solid waste and recyclables on a single invoice that also includes water and sewer charges. 2004 rates for residential customers were: 20-gallon mini-carts ($11.19), 32-gallon carts ($14.46), 64 ($22.32), and 95-gallon carts ($30.18). The rates include a charge for weekly recycling collection (details regarding recycling services are discussed in Section 5). Multi-family (five units or greater) and commercial rates vary, depending on the size of the container and the frequency of collection.

6.2.3.3 Fairchild Air Force Base

Fairchild Air Force Base contracts with Sunshine Disposal and Recycling, Inc. to provide weekly collection of its solid waste and residential recyclables. A base contractor provides nonresidential recycling services.

The base manages municipal solid waste (MSW) in the most efficient and economical way, consistent with environmental and health protection. The three basic approaches to solid waste management are in-service operations, contracts, and resource recovery. Municipal solid waste is generated in all community living quarters and by administrative functions. This includes all housing areas, office areas, base industrial operations, dining facilities, Clear Lake Resort, services facilities (for example, the Base Exchange and Commissary), and schools.

Sunshine Disposal removes and transports base-generated MSW to the WTE Facility. Sunshine Disposal's contract includes solid waste removal from military family housing (MFH) and the base, curbside recycling and yard waste collection from MFH, and quarterly pick-up of bulky items (for example, furniture, appliances) from MFH. Household yard waste also is taken to the WTE Facility, where it is transported to a private composting facility.

The Base operates an extensive recycling center and recycling collection program for non-residential materials. Additional information about this recycling program is provided in Section 5.

6.2.3.4 Private Recycling Collection Services

Private non-residential (commercial) collection firms can offer collection service for recyclables to any nonresidential customer in the County, regardless of solid waste collection hauling authority.

However, the City of Spokane requires that commercial recycling haulers submit a statement declaring where a hauler has located a recycling container within Spokane city limits and what type of recyclable is being collected. Commercial recycling haulers deliver materials to private recyclers. The most commonly collected recyclables from nonresidential customers are cardboard and office paper.

6.3 Key Issues

6.3.1 Service Level Designation

The 1999 planning guidelines issued by the Department of Ecology require local governments to develop clear criteria to determine the designations for urban and rural areas for waste reduction and recycling (RCW 70.95.092). Criteria to be considered include:

- Anticipated population growth;
- The presence of other urban services;
- Density of developed commercial and industrial properties; and
- Geographic boundaries and transportation corridors.

In the process of developing the 1992 Plan update, the County, the Spokane Regional Solid Waste Liaison Board, the System, and SWAC identified a need to improve the consistency of collection service levels in the County. Recognizing that it is more efficient to provide collection service in areas with relatively high housing density than in more rural areas where collection service is less cost-effective, service levels were developed using housing density and haulers' collection routes. The resulting service level designations require collection in more urban areas and make collection optional in rural areas of the County. They are defined as follows:

- Level 1: An area with a housing density equal to 3.5 dwellings per acre or greater and within a contiguous area with a population of 10,000 or more. Level 1 areas are offered weekly refuse and recycling subscription service at all residential properties.
- Level 2: An area with a housing density of less than 3.5 dwellings per acre or not within a contiguous area with a population of less than 10,000. Level 2 cities are encouraged to provide weekly refuse collection service and residents of unincorporated areas have the opportunity to voluntarily subscribe to weekly refuse collection service. Collection of recyclables may be available/drop off facilities are available.

In non-municipal areas, Level 1 applies to parts of unincorporated Spokane County to the north, east along the I-90 corridor, and west in the industrial areas surrounding the Spokane International Airport. Using 2004 population data, the Level 1 designation also applies to the cities of Millwood, Liberty Lake, Spokane, and Spokane Valley because they have not adopted an ordinance to limiting the County's solid waste collection authority within their city limits.

6.3.1.1 Spokane County Service Level Resolution

The County passed a Service Level Resolution in 1991 (91-0538) and amended in 1992 (92-0605) establishing minimum levels of service for residential curbside recycling collection in

the unincorporated areas of the County and those municipalities that choose to not regulate their solid waste.

The County Service Level Ordinance refers to the service level designations established in the SWMP, and lists the recyclables that are required to be collected in a residential curbside program. In late 2006, the County began the process of adopting and codifying a new Service Level Ordinance and creating updated service area maps.

6.3.2 Collection Growth

Requirements for future solid waste collection will depend upon population growth rates. As required in RCW 70.95.090(5)(d), solid waste collection needs must be projected for the next 6 years. Estimated current population and households are provided in Exhibit 6-3. Forecast growth in population for Spokane County for the years 2010 through 2015 are shown in Exhibit 6-4.

EXHIBIT 6-3
Estimated Population and Housing Densities for Incorporated Areas

Municipality	Land Area (sq. mi.)	2004 Population	Number of Housing Units (2000 Census)
Airway Heights	5.044	4,590	1,095
Cheney	4.015	9,855	3,293
Deer Park	6.909	3,045	1,210
Fairchild AFB	6.5	4,357	1,114
Fairfield	2.532	576	194
Latah	0.3	204	75
Liberty Lake	4.0	4,950	1,894
Medical Lake	3.648	4,120	1,197
Millwood	0.664	1,645	779
Rockford	0.645	511	169
Spangle	0.347	297	113
Spokane	59.042	197,400	87,941
Spokane Valley	38.5	83,950	Not Available
Waverly	0.411	131	49
Spokane County Unincorporated		116,369	

EXHIBIT 6-4
Projections of the Total Resident Population for Spokane County

2005	2010	2011	2012	2013	2014	2015
436,300	466,417	472,634	478,583	484,630	490,770	496,981

Source: *Office of Financial Management, Intermediate Growth Series*

Overall, Spokane County is experiencing an annual 1 percent growth rate. Areas experiencing major residential growth are on the eastern, western, and northern edges of the existing urbanized area, particularly the Liberty Lake area, the Airway Heights/West Plains area and the northern portion of the North South corridor. Portions of the County have recently been incorporated, reducing the population densities of the unincorporated areas. With the adoption of urban growth boundaries by the County, population growth likely will be concentrated in urban areas.[i]

6.4 Alternatives

At this time, solid waste collection appears adequate for the residents of Spokane County; however, continued population growth will likely require additional collection routes in the future.

The following alternatives were developed during the planning stages of the 2009 Plan:

1. Use of incentive rates in the certificated areas to encourage recycling.
2. Change service levels to capture more households.
3. Contracting for recycling.
4. Alternative collection strategies.
5. Mandatory collection.
6. Mandate that haulers offer commercial recycling.
7. Centralize recycling locations for rural households.

Each of these alternatives is discussed below.

1. Use of incentive rates in the certificated areas to encourage recycling.

Traditionally, the Washington Utilities and Transportation Commission (WUTC) establishes collection rates for certificate holders. The WUTC sets rates based on a "cost of service" principle whereby rates approximate how much it costs to offer a particular service to a particular customer class. Every collection company holding a WUTC certificate is required to file a tariff with the WUTC, showing rates and charges applicable to the collection, transportation, and disposal of solid waste in its service area. The WUTC then approves or modifies the requested rates. Certificate holders cannot alter their rates or charges without WUTC approval.

The WUTC, however, requires collection companies to "use rate structures and billing systems consistent with the solid waste management priorities set forth under RCW 70.95" and provide minimum levels of solid waste collection and recycling services pursuant to local solid waste management plans and municipal ordinances. Incentive rates can be used to encourage recycling. Implementing incentive rates in the certificated areas would require that the County adopt a service ordinance that provides the foundation for this approach. This concept was discussed fully in Section 5.

2. Change recycling service level designations to capture more households.

As discussed above, the WUTC requires certificate holders to implement the provisions of the waste reduction and recycling element of a comprehensive solid waste management plan. The 1992 Plan established a minimum residential housing density equal to 3.5 dwellings per acre and within a contiguous area with a population of 10,000 or more. Houses in these areas are offered weekly subscription service for refuse and recyclables collection at all residential properties. The County could consider lowering the housing density requirement as a means to offer more recycling services in certain areas. The WUTC haulers will be required to provide the recycling services specified in this plan.

By working with haulers, the County, and the System, a new minimum service level could be defined that expands recycling and encourages haulers to invest in additional equipment for service.

3. Contracting for recycling.

Counties have the authority to contract with private vendors to provide recycling services to residences. Counties that choose this option assign service areas, establish and enforce service standards, and set rates for those recycling services. The County can consider contracting for residential recycling collection in unincorporated areas where a hauler fails to provide residential recycling established by the minimum service level. At this time, the County does not find any hauler failing to provide residential recycling within the minimum service level definitions.

4. Alternative collection strategies.

The County and cities that do not currently offer curbside recycling service within their refuse collection contract could encourage haulers to implement alternative co-collection strategies as a means to offer collection of recyclables where it is currently not offered. Co-collection is the collection of waste and recyclable materials at the same time. Co-collection is accomplished by using methods that fall into two general categories:

- Bin-based methods: One truck with two or more compartments is used to hold the different materials (trash in one compartment and recyclable materials in one or more other compartments). The compartments are then emptied separately at two different facilities. This option would require haulers to purchase new trucks, or retrofit existing trucks.
- Bag-based methods: Sometimes recyclables are separated by residents into a "blue bag" but still placed in a container with their trash. The bags are then collected in the same

truck compartment as the trash and recovered later after the load is emptied on the floor of a transfer or processing facility.

The advantage of co-collection is that collection costs and truck traffic can be reduced. Potential disadvantages include the inefficiencies that result from incorrectly sized compartments (for bin-based methods) or the loss of recyclable materials due to bag breakage (for bag-based methods). Several co-collection programs have been tried in other areas and failed due to such problems.

5. Mandatory collection.

Currently, collection services in the unincorporated county are voluntary. Residents and businesses may choose to self-haul their waste to the transfer stations or to the Waste to Energy facility. The County could consider making collection services mandatory. Mandatory collection requires that all residents within a defined area sign up and pay for a minimum level of service. The primary reasons for taking this step are to minimize illegal dumping and to distribute the costs of recycling and solid waste management equitably among all residents.

Cities can require mandatory collection of waste within their jurisdictions. To require mandatory collection in an unincorporated area or county-wide, the County would be required to form a collection district as described in RCW 36.58A. The statute requires the County to hold public hearings on the issue and get approval by the County Commission. The Commission could approve a mandatory collection district in all or part of the County if it was deemed in the public interest and necessary for the protection of public health. The procedures and costs to the County to form a collection district could be substantial.

A proposal for mandatory collection also may draw criticism from private haulers and residents. Requiring mandatory collection of all residences, particularly those in remote areas, could incur substantial additional costs to haulers in terms of travel time, equipment maintenance, and use of vehicles with little payload. These costs are not easily recovered under the current WUTC regulatory system.

6. Mandate that haulers offer commercial recycling.

Currently, haulers offer commercial recycling as an additional service to those businesses that voluntarily choose to subscribe and pay for the service. Requiring haulers to charge for and provide for recycling services may increase diversion rates. Mandatory business recycling would require a substantial preliminary education program and support system to show the cost savings and value of commercial recycling for businesses. Businesses that did not have the voluntary commitment to participate in the program would protest the cost of a program that they did not chose to participate in.

7. Centralized recycling locations for rural households

This alternative is discussed in Section 5, Recycling.

6.5 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the solid waste collection alternatives discussed above lead this Plan to recommend implementing a progressive but monitored approach to collection activities. This approach will provide for continued responsible collection of solid waste, including recoverable materials, while maintaining a balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for the assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

The Plan recommends that additional means be assessed to improve the solid waste collection process. The use of incentive rates should be considered to encourage increased recycling and waste reduction. An example is the "Pay as You Throw" program where the rates are structured so that those who dispose of more are charged more than those with lower waste volumes. Alternative collection strategies such as co-collection and/or frequency of service should also be considered.

The option of mandatory collection should be carefully assessed. More centralized recyclable collection locations for rural households would support optional self-hauling and contribute to greater waste reduction. The Plan does not promote mandatory commercial recycling but does support a free-market economy with a progressive and participative business sector combined with public education to contribute to Ecology's priorities of waste management.

2. Assess changing service levels to capture more households.
3. Assess contracting for recycling.
4. Assess alternative collection strategies.
5. Assess mandatory collection.

[i] The urban growth area (UGA) boundary identifies areas where future urban growth should occur and establishes a clear separation between urban and rural development to provide economical and efficient provision of public services. The UGA is sized to accommodate the projected 20-year population. The intent of the UGA is that urban growth should occur first in areas with existing public services and facilities that have sufficient capacity to serve development (*Spokane County Comprehensive Plan, 2005*).

SECTION 7

Transfer System

7.1 Introduction

Transfer stations are conveniently located facilities where solid waste, delivered by collection companies and citizens, is consolidated, temporarily stored, and loaded into semi-trailers for transport. The solid waste is then delivered to a processing facility or a disposal site. Transfer stations lower overall solid waste disposal costs because they accept deliveries from local solid waste and recycling generators, avoiding the need for individual long-distance trips to final processing and disposal facilities. Transfer stations become cost-effective when the waste stream is large enough to support their construction and operation, and when the hauling distance to a disposal facility exceeds a certain distance (usually between 15 and 30 miles, depending on the volume of the waste stream).

The solid waste transfer system in Spokane County is designed to complement all other elements of its solid waste management plan. The transfer system goal, "to provide for efficient collection and transfer of MSW and recyclables," is the same as the collection goal and, therefore, some objectives are shared:

- Locate recycling facilities and System transfer stations to optimize service levels and transportation efficiencies.
- Recycle prior to WTE processing or landfill disposal.

7.2 Existing Conditions

The System operates three transfer facilities in Spokane County, and there is one private transfer station, owned and operated by Sunshine Disposal. The locations of these facilities are shown on Exhibit 7-1.

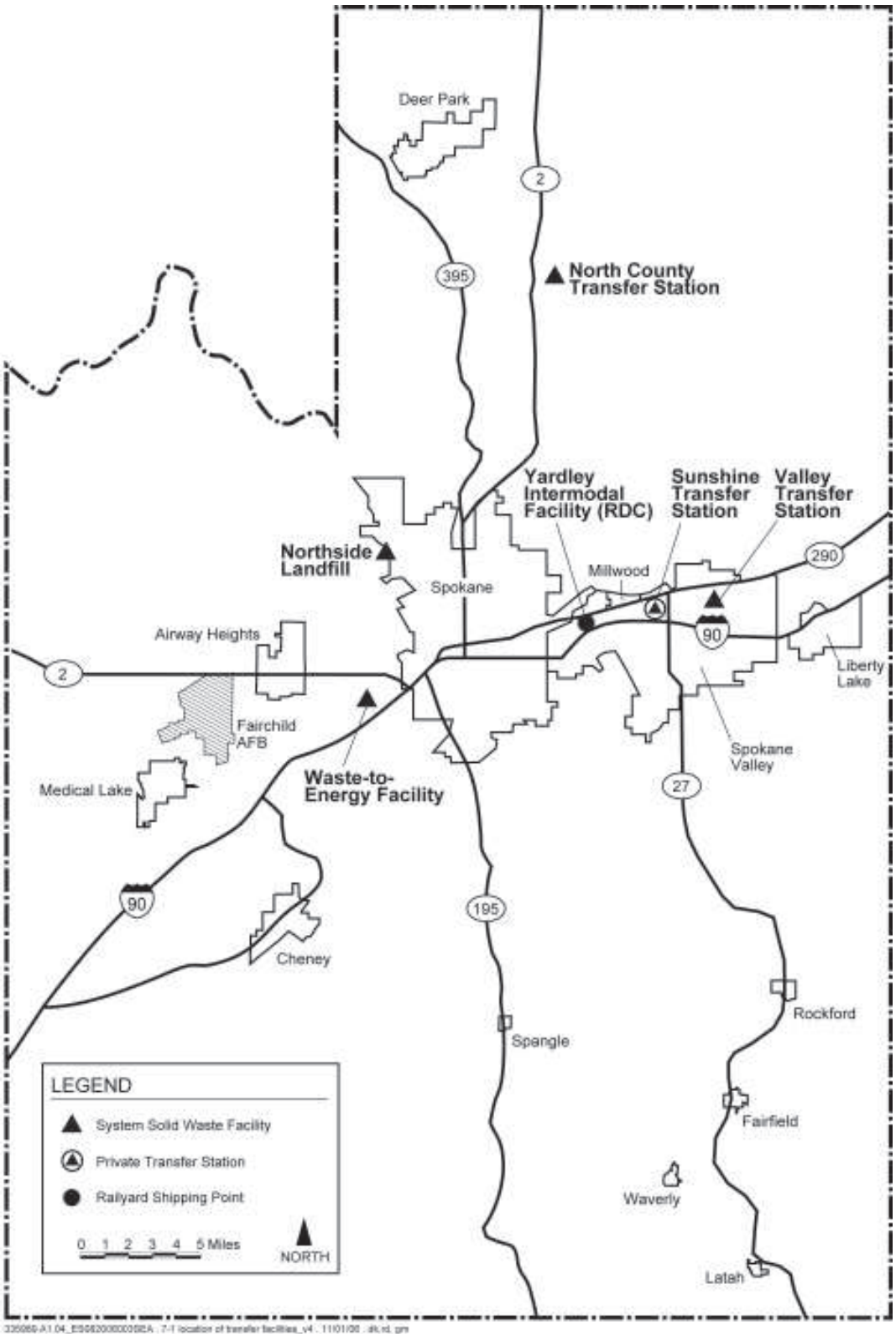
7.2.1 System Transfer Facilities

The System's solid waste transfer program is designed to transfer waste materials to and from various facilities as a means of efficiently and cost-effectively managing the large volume of wastes generated in Spokane County. The System facilities include:

- The WTE Facility.
- North County Transfer Station (NTS).
- Valley Transfer Station (VTS).

A flow diagram illustrating waste flow among facilities is presented in Exhibit 7-2.

EXHIBIT 7-1
Location of Transfer Facilities



7.2.1.1 WTE Facility

The WTE Facility is the designated disposal facility for MSW in Spokane County, but it is also a transfer facility for yard waste, inert and non-processible material, ash, large recyclable scrap metals separated from refuse on the tipping floor, recyclables from the Recycling Area, and household hazardous waste (HHW) from the HHW facility.

- Garbage collection vehicles servicing Spokane County deliver waste to the WTE Facility for disposal.
- Yard waste is delivered to the WTE Facility from curbside collection programs or self-hauled. The yard waste is transferred to a private compost facility for composting (see Section 5, Recycling).
- Inert waste delivered to the WTE Facility, such as cured concrete and other inert, non-burnable material, is transferred to an intermodal rail facility for shipment to the Roosevelt Regional Landfill.
- Ash from the WTE facility is transferred by rail to a designated ash landfill operated by Roosevelt Regional Landfill.
- Refrigerant-containing appliances are processed to remove refrigerants and, with other white goods and large scrap metal units from the tipping floor, are transferred to a local recycling processor.
- Recyclables from the site's Recycling Area are transferred to contracted recycling processors.
- Household hazardous waste is transferred from the site's Household Hazardous Waste facility to contracted recycling processors or appropriate disposal facilities.

Recyclable materials currently accepted at the WTE facility recycling area include:

- Corrugated cardboard.
- Brown paper bags.
- Newspapers.
- Magazines.
- Telephone books.
- Glass bottles and jars (clear, brown, green, excluding canning jars).
- Steel cans.
- Aluminum cans.
- Code 1 PETE plastic bottles.
- Code 2 HDPE plastic containers with narrow necks (all colors).
- Ferrous and non-ferrous scrap metal.
- Household batteries, including rechargeable batteries.
- Vehicle batteries.
- Cell phones, including batteries and chargers.
- Small electronics and hand tool batteries

The WTE facility was updated in 1997 to improve system efficiencies by adding:

- Building extension and load-out chute.
- New (third) scale and scalehouse.
- Tarping area.

7.2.1.2 North County and Valley Transfer Stations

The North County and Valley Transfer Stations were opened together along with the WTE Facility in December 1991. MSW is first delivered to one of these three facilities. The transfer stations transfer materials in a manner similar to the WTE except that they also must transfer disposable MSW to the WTE Facility. Each of these sites has separate areas set aside for customers to drop off disposable MSW, yard debris, refrigerant appliances and other scrap metal, non-burnables (such as sheetrock), recyclable materials, and moderate risk waste (MRW). Burnable MSW is transferred to the WTE facility or longhauled to RRLF. The other materials are transferred to the appropriate processing site.

The Valley and North County Transfer Stations are similar in design and function, except the Valley Transfer Station has a larger tipping building (15,700 square feet versus 8,600 square feet) and a preload compactor. The compactor is used to increase the payload (tons per load) of trailers and containers transported from the station. This is particularly important for containers that are transported from the station to the Yardley Intermodal Facility where they are loaded onto railcars and transported by rail to the Roosevelt Regional Landfill. A new knuckle-boom crane was installed in 2004 at the Valley transfer station, which enhances the efficiency of the operation by compacting top-load trailers and reducing the number of haul trips. The North County transfer station received site improvements in 1997, including a third scale and scalehouse, new vehicle routing and access, and a tarping area.

Conceptual site layouts for the facilities are shown in Exhibits 7-3 and 7-4. Customers can enter the station and drop off recyclables or household hazardous waste free of charge. Customers delivering yard waste or garbage cross the scales and are assessed a tipping fee. In 2004, the tipping fee for garbage was $98 per ton, with a minimum charge of $7. The 2004 Clean Green fee was $35 per ton with the first 100 pounds free during all operating hours from October through March, and during special operating hours from April through September. Yard debris is inspected to avoid contamination.

Recyclable materials currently accepted in the transfer stations' recycling areas are the same as listed for the WTE facility. The public deposits most materials into intermediate bins adjacent to the transfer container in the unloading areas. Site staff checks the intermediate bins for contaminates, and then empties it into the transfer containers. Recyclable materials are then transported to local recycling companies. The processing, marketing, and shipment to market of collected materials are handled by private recycling companies on a contract basis.

EXHIBIT 7-2
Flow Diagram of Waste Among System Transfer Facilities

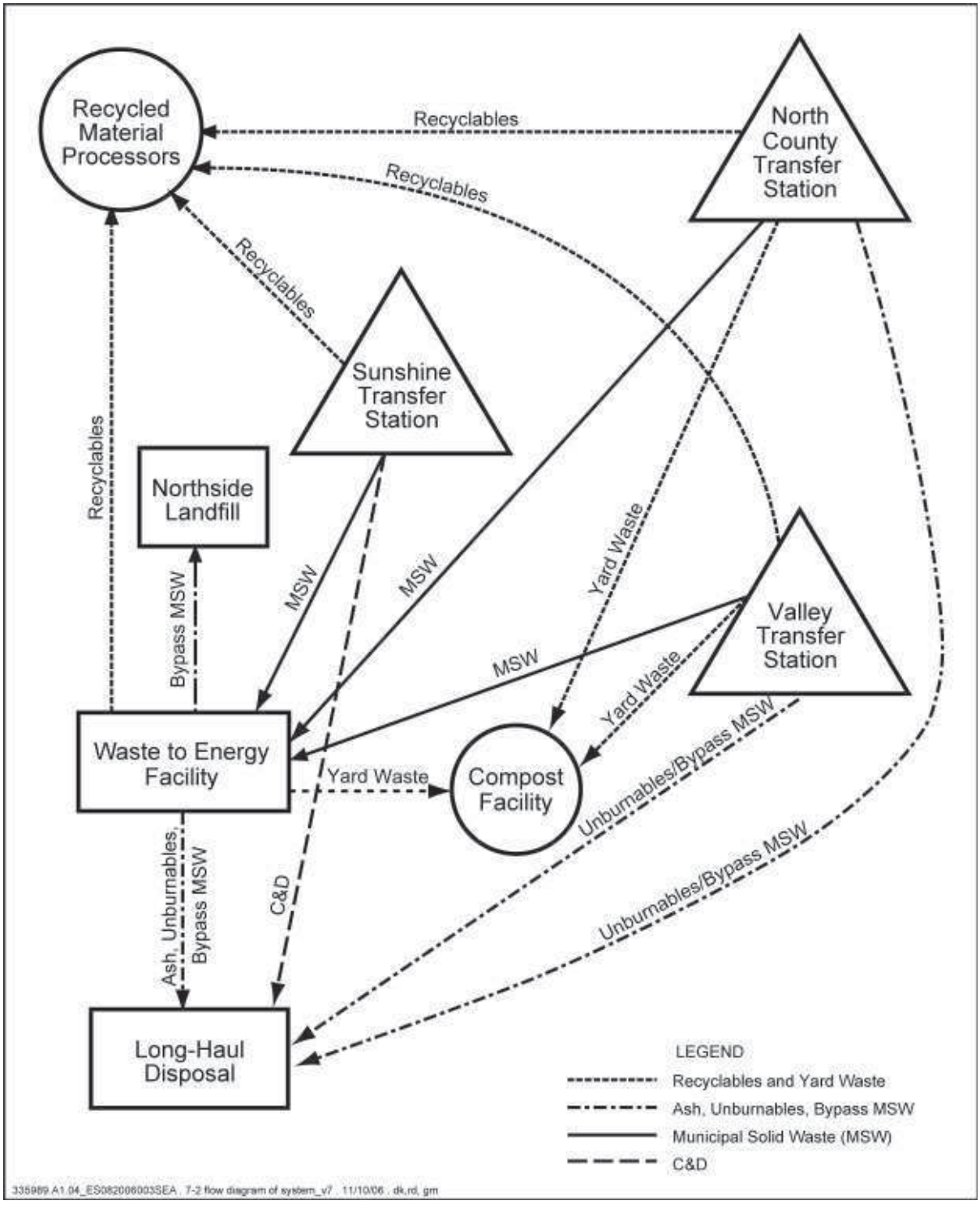


EXHIBIT 7-3
Site Layout, North County Transfer Station

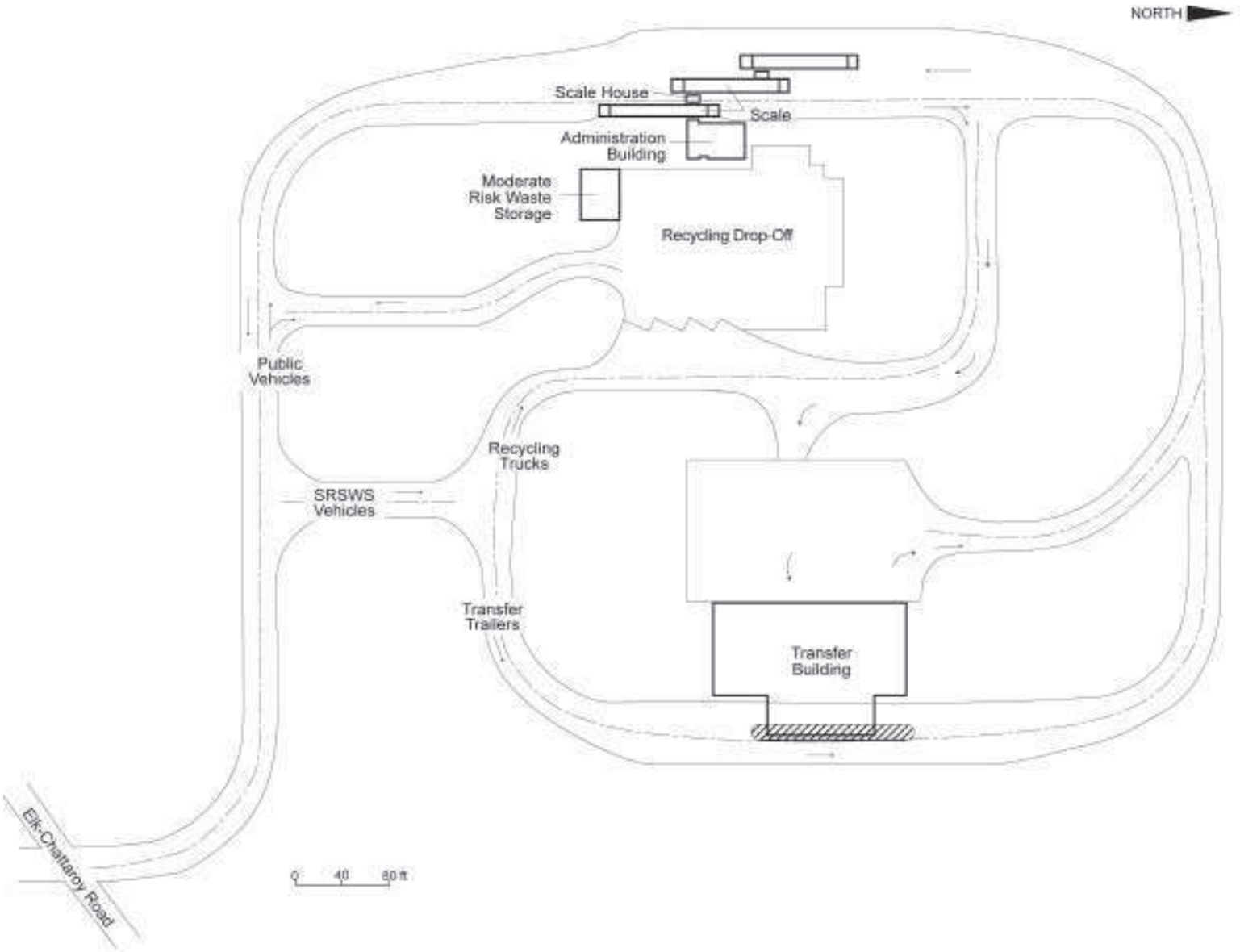
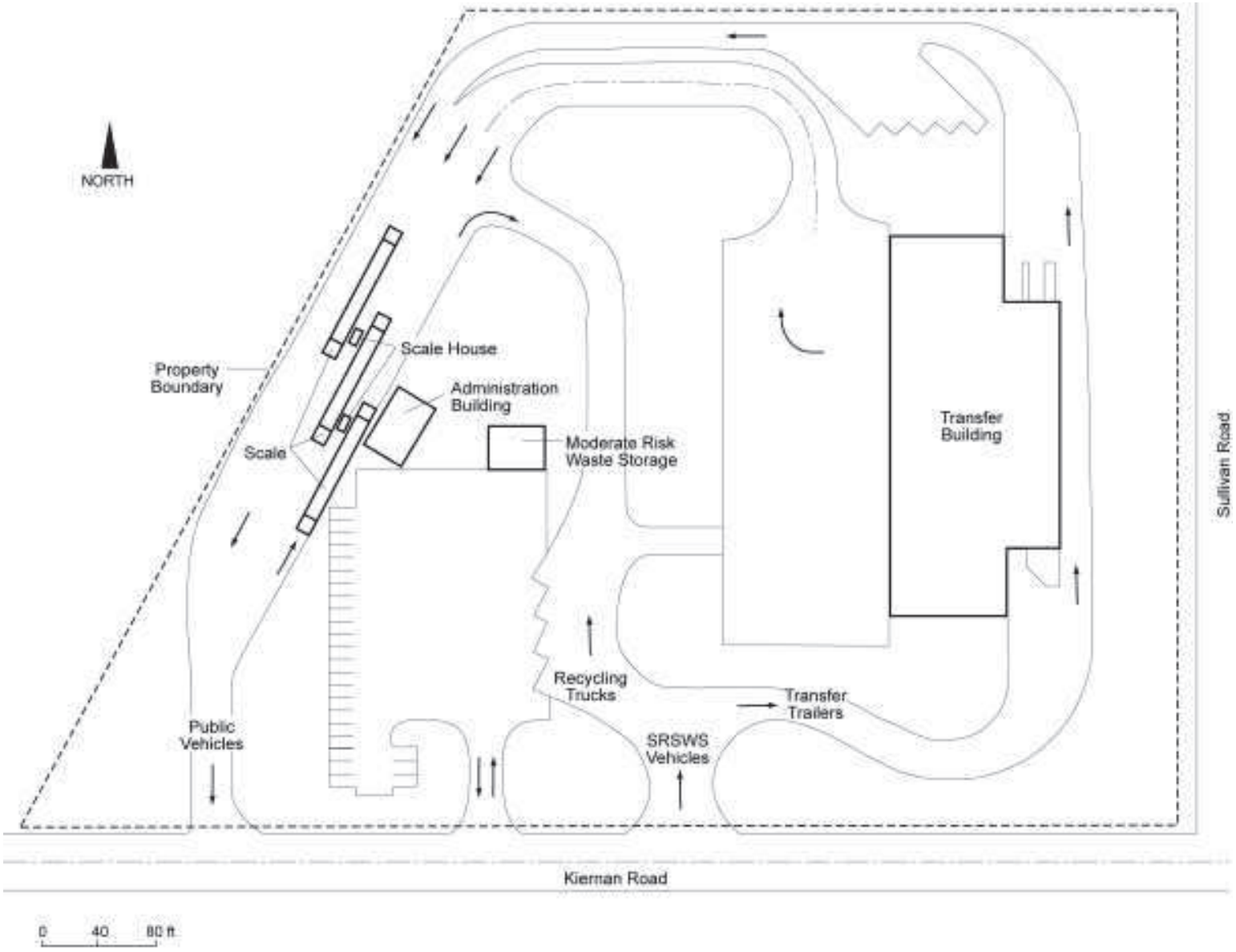


EXHIBIT 7-4
Site Layout, Valley Transfer Station



The HHW area accepts household batteries, automotive batteries, cell phones, motor oil, paints and solvents, and other household hazardous wastes. Items are place in a designated drop-off area by the public and transferred to a secure storage building by trained staff. Trained personnel sort and package the material for shipment to a hazardous waste landfill or incinerator. Some of the materials (such as cell phones, oil, vehicle batteries, button-cell batteries) are recycled. Each site also has a reuse table with items available free of charge to the public in exchange for a signed release. Household Hazardous Waste is covered in more detail in Section 12.

Certain materials such as yard waste, gypsum wallboard, and some unburnable materials and metal are unloaded separately from garbage on the tipping floor. A separate area is designated for customers delivering these materials in each of the transfer station buildings. The yard waste is sent to a private composting facility. Metals are sent to a local scrap metal broker. Unburnable materials are sent to Roosevelt Regional Landfill. For more than eight months of the year, bypass MSW also goes to RRLF.

Surveillance and control of waste going into the Waste-to-Energy facility and transfer stations is directed by Chapter 7 of the Operations Plan for the facilities. Inspections are carried out monthly at all sites and consist of random load screening and inspection. Any materials discovered that are not appropriate for the MSW stream are removed, and the generator is notified for proper disposal of the materials in question. The inspection records are maintained at the System operations office.

7.2.2 Private Transfer Station

7.2.2.1 Sunshine Transfer Station

The Sunshine Transfer Station is a permitted, privately owned and operated station located at 2405 University Road, east of the City of Millwood (see Exhibit 7-1). The station is used both for waste transfer and recycling.

Residential and commercial waste collected by Sunshine Disposal is delivered to the station. Depending on the source of generation, these wastes are consolidated into transfer trailers or intermodel containers, which are used to transport waste to its final disposal site. Cardboard and other recyclables collected from local businesses are delivered to the station and prepared for transport to markets. Workers also separate the recyclables from mixed loads on the station's tipping floor.

7.3 Key Issues

The North County transfer station has a maximum capacity of 950 tons, with a daily capacity of 800 tons. In 2004, the station received 49,580 tons of waste. The Valley transfer station has a maximum capacity of 2,400 tons, with a daily capacity of 1,200 tons. In 2004, the station received 110,460 tons of waste.[i]

The stations currently are able to manage the waste generated within the County. However, future influences on the quantities of waste received by the stations include:

- Population growth in the County.

- Effectiveness of waste reduction and recycling programs.
- Increased collection activities in the County.

Regarding the addition of private transfer stations, the existing County flow control ordinance prevents any type of MSW solid waste facility to be built in the unincorporated County. Municipalities could build or allow to be built a transfer station within their borders; however, they are legally obligated through the interlocal agreements to deliver MSW to the System facilities.

Two key issues were identified in the 1998 plan regarding the transfer system developed for Spokane County:

- The level of service provided to county residents: reducing time spent by customers or providing additional facilities.
- Operational issues: improving the efficiency or cost-effectiveness of transfer operations.

These issues continue to be important today and form the basis for the alternatives discussed below.

7.4 Alternatives

Waste transfer stations play an important role in Spokane County's solid waste management system, serving as a link between local waste and recycling collection programs and the final disposal or processing facilities. The primary reason for using a transfer station is to reduce the cost of transporting solid waste to disposal or processing facilities. Consolidating smaller loads from collection vehicles into larger transfer vehicles enables collection crews to spend less time traveling to and from distant disposal sites and processor facilities and more time collecting waste and recyclables. Transfer stations reduce overall transportation costs, air emissions, energy use, truck traffic, and road wear and tear.

The following alternatives were developed during the planning process:

1. Develop criteria for determining if the existing transfer stations need to be upgraded.
2. Assess needs for additional transfer stations.
3. Establish locations for staging and storage of natural disaster debris.
4. Offer a reuse area at System facilities.

Each of these alternatives is discussed below.

1. Develop criteria for determining if the existing transfer stations need to be upgraded.

The System's transfer stations were built in 1991 and are now 15 years old. It is important that service levels be maintained or improved as the population grows and the facilities reach their physical and functional limits. The following can be indicators that a transfer station is in need of upgrading:

- Time spent by customers on site becomes excessive.

- Facility hours are no longer meeting customer needs.
- The transfer station is experiencing difficulty in accommodating all vehicle and tonnage throughput during peak hours.
- The transfer station is experiencing damage due to changes in collection vehicle design.
- Traffic impacts on local streets are increasing.
- Environmental standards are not being met.

As the facilities age and the needs for solid waste services change, the transfer system may require upgrades to maintain operational efficiency. The System should establish a mechanism for assessing the transfer station system and determining actions for the future.

2. Assess needs for additional transfer stations.

A general rule for evaluating the need for collection vehicle transfer is based on hauling distance. Although cost-effectiveness will vary, transfer stations generally become economically viable when the one-way hauling distance to the disposal facility is greater than 15 to 20 miles. However, it should be noted that transportation conditions (i.e., traffic, road quality, size of vehicles used, collection routing, and volume of material delivered) would impact the benefit of direct-haul versus consolidating refuse at a transfer station.

In rural areas, transfer stations also provide increased convenience for residential and non-residential self-haulers, who might otherwise have to travel long distances to reach a disposal site. Increased convenience helps reduce the amount of illegal dumping, illegal burning, and other inappropriate forms of disposal.

The System currently operates two transfer stations as well as the transfer operations at the WTE facility. Two possible reasons for adding an additional transfer station include:

- Economic growth in outlying areas of the County, particularly in the south, may cause the waste stream to grow to a point where a small transfer station may become feasible. Drive times from this part of the County would be significantly reduced and convenience for residents would be greatly improved.
- There also may be a need to build an additional transfer station in urban areas particularly if existing stations are being over utilized and upgrades are insufficient to alleviate resulting issues.

The benefits of building a new transfer station must be weighed against the costs of adding new facilities.

The System could evaluate the long-term need for additional transfer stations based on the following:

- Projected population growth and growth patterns.
- Availability of suitable sites.
- Underutilized capacity of existing transfer stations.
- Customer usage of existing transfer stations.

- Convenience and accessibility for residential and commercial users.
- Effect on transfer system costs.

Sufficient time should be allowed for construction of new transfer stations as warranted.

3. Establish locations for emergency staging and temporary storage of debris generated by natural disasters.

Major natural disasters can generate enormous volumes of debris in short periods of time.

According to the Federal Emergency Management Agency (FEMA), natural disasters generally create similar types of debris:[ii]

- Tornadoes: debris consists primarily of trees, construction materials from damaged or destroyed structures and personal property.
- Floods: debris consists of sediment, wreckage, personal belongings, and sometimes hazardous materials deposited on public and private property. Additionally, heavy rains and floods may produce landslides; in such cases, debris consists primarily of soil, gravel, rock and some construction materials.
- Earthquakes: debris consists of building materials, personal property, and sediment caused by landslides.
- Wildfires: debris consists of burned out structures, cars and/or other metal objects, ash and charred wood waste.
- Ice Storms or Snowstorms: debris consists of significant amounts of woody debris from broken tree limbs and branches.

Though not discussed in FEMA literature, Spokane County must also be prepared to manage ashfall from volcanoes situated along the Cascade Range.

One of the first responses to a natural disaster is rapid debris removal from roads. Debris removal often relies on the availability of suitable temporary debris storage sites, where the debris is temporarily stored until it is reduced in volume (e.g., sorted, chipped, or burned) and/or taken to a permanent disposal location. Identifying these temporary sites before a major natural disaster occurs can expedite debris removal and subsequent volume reduction and disposal actions.

Spokane County should identify potential sites to be used as emergency staging and temporary debris storage sites to be used in the event of a natural disaster. Three potential sites include the Valley Transfer Station, the North County Transfer Station, and property at the closed Southside Landfill.

The number of temporary sites ultimately needed by the County for debris storage will vary with:

- Size of the site(s);
- Distance of the site(s) from the disaster area;
- Speed of reduction (mixed debris is slower than clean woody debris); and

- Removal urgency.

Generally, FEMA suggests the following considerations for evaluating potential temporary debris storage and reduction sites:[iii]

- Use public lands first to avoid costly leases. Pre-designated sites should be on public property and consist of between 50 and 100 acres, depending on anticipated needs. Consider the locations with respect to noise, traffic, and the environment. Use private land only if public sites are unavailable.
- When selecting public or private sites, consider pre-existing conditions that will have to be restored upon site closeout.
- The required size of the site will depend on the expected volume of debris to be collected and planned volume reduction methods. As a general rule, larger sites mean fewer sites and, hence, easier site closeout. However, larger sites may create logistical problems.
- Environmentally sensitive areas (such as wetlands, areas with endangered animal and plant species, critical habitats, well fields and surface water supplies and historic/archaeological sites) should be avoided.
- Whenever possible, avoid locating near residential areas, schools, churches, hospitals and other such sensitive areas.
- Look for sites with good ingress/egress to accommodate heavy truck traffic and a site configuration that allows for an efficient layout.

The Army Corps of Engineers uses the following assumptions to estimate debris storage site size requirements:[iv]

- Debris can be stacked to a height of 10 feet, and 1 acre can be used to store 16,117 cubic yards.[v]
- 60 percent of the site is for storage; the remaining 40 percent provides for roads and safety buffers.

For example, a natural disaster generating 1,000,000 cubic yards of debris will require 62 acres for debris storage only. To provide for roads and buffers, the acreage must be increased by a factor of 1.66, which increases the required site size to 103 acres.

Exhibits 7-5, 7-6, and 7-7 show schematic representations of emergency staging areas for Northside Transfer Station, Southside Landfill, and Valley Transfer Station, respectively.

4. Offer reuse areas at System facilities

The System contracted with reuse organizations when the facilities began operations in the early 1990's. The program was stopped because the items collected were not of high enough value for the businesses to continue taking the material. There were also problems with participants hiding refuse among the material that was left in the reuse area. The System should research other conditions that would allow higher quality material to be collected at System facilities for reuse.

Exhibit 7-5

Northside Transfer Station
Emergency Staging Area

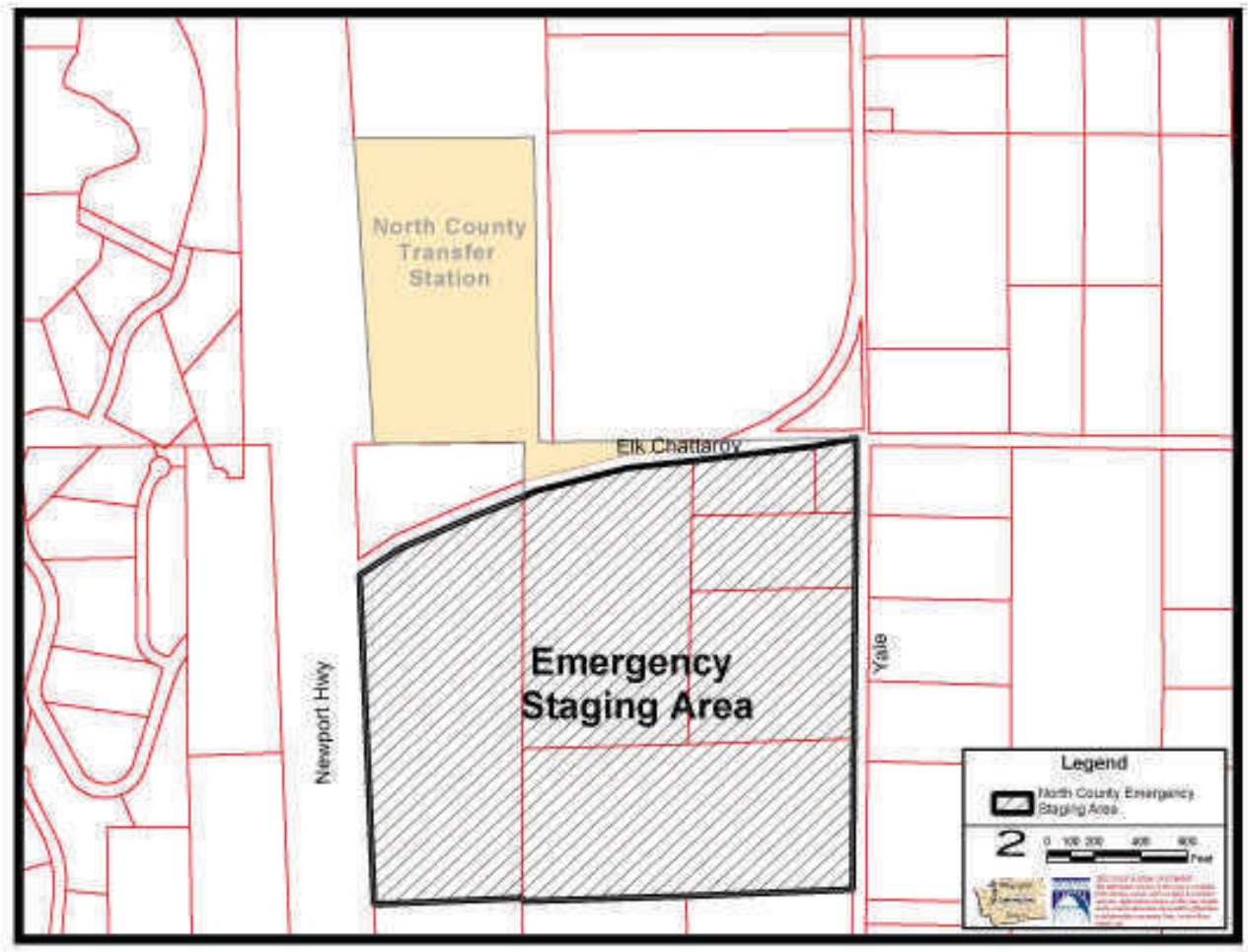


EXHIBIT 7-6
Southside Landfill
Emergency Staging Area

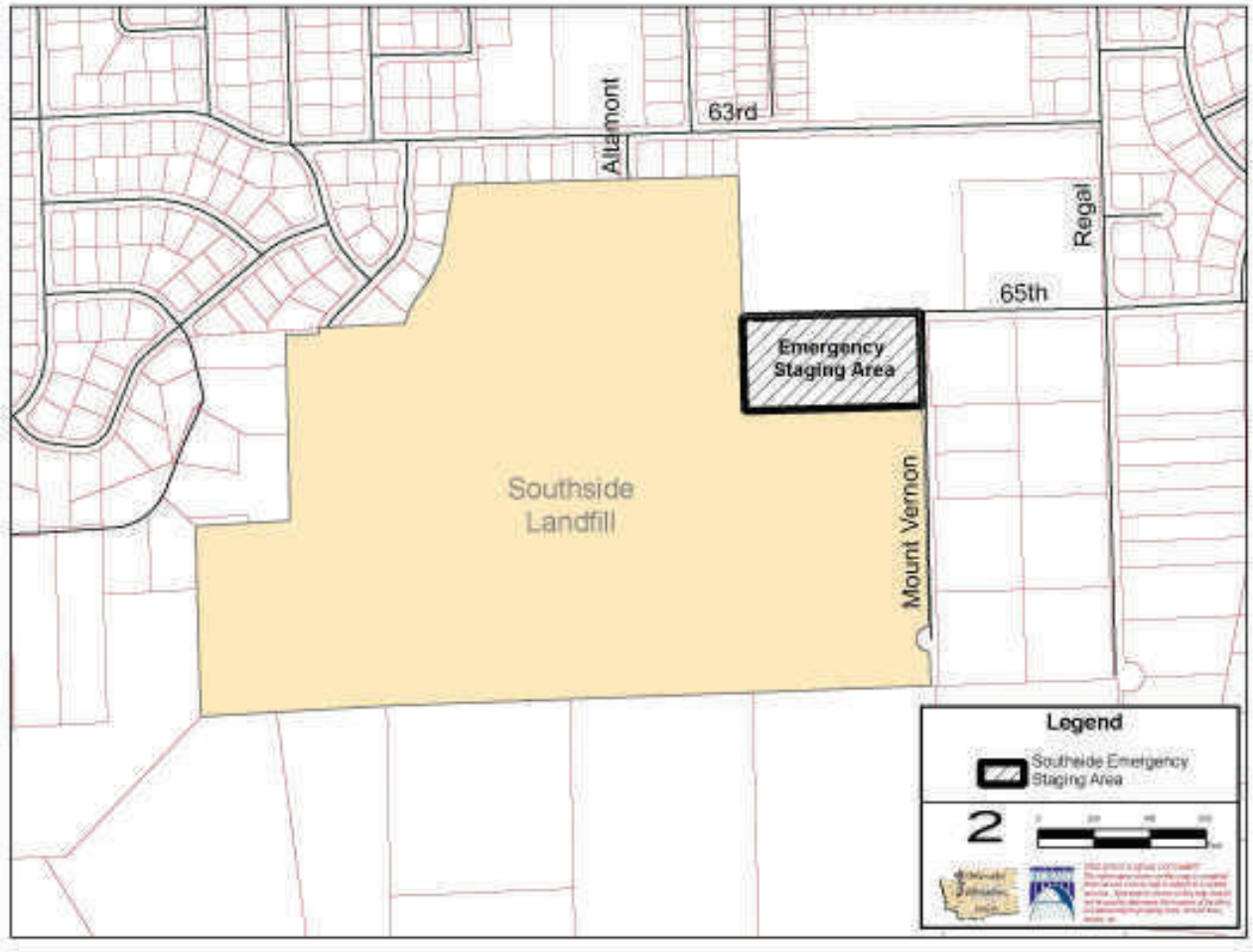
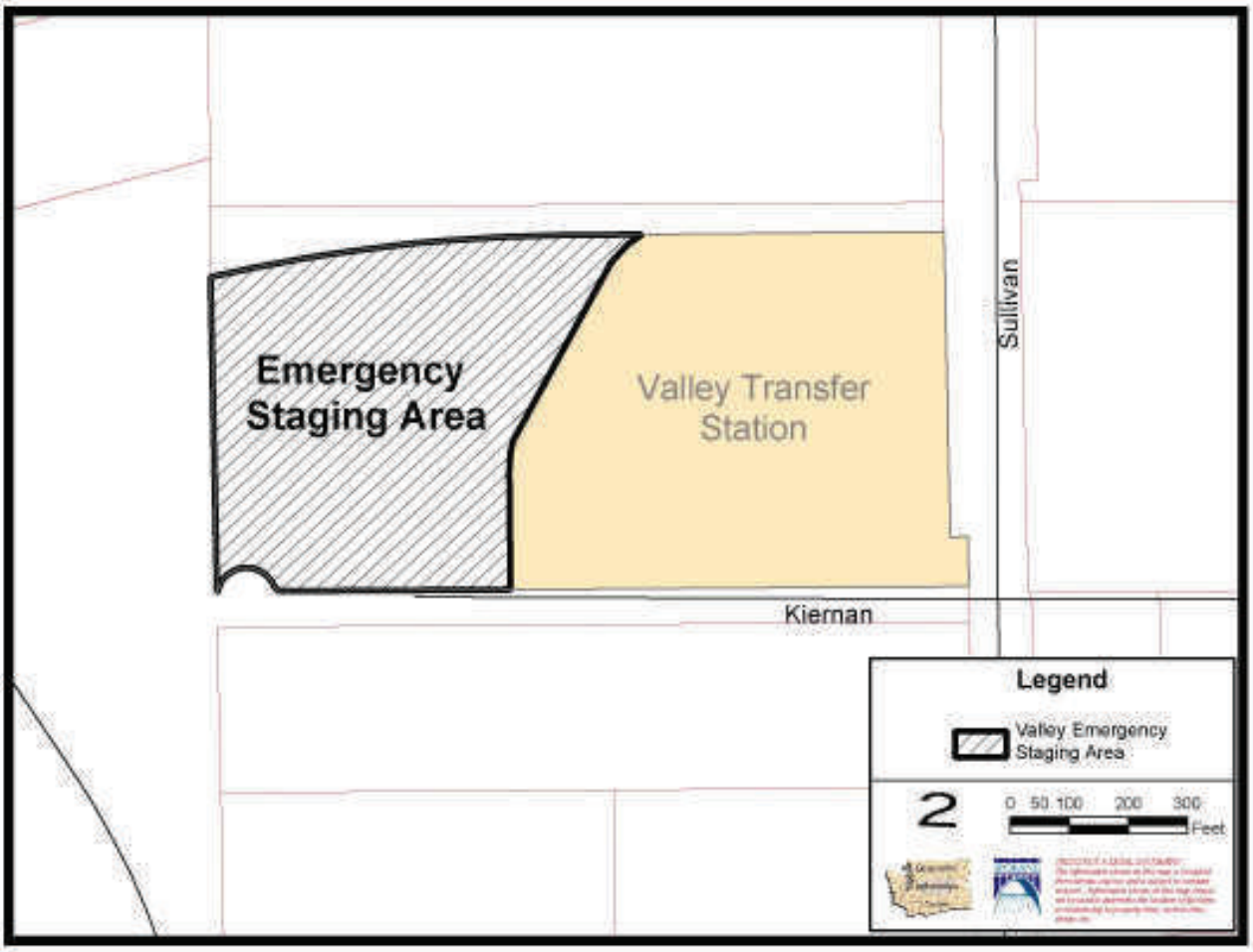


EXHIBIT 7-7
Valley Transfer Station
Emergency Staging Area



7.5 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the transfer system alternatives discussed above leads this Plan to recommend implementing a progressive but monitored approach to developing and maintaining transfer systems. This approach will provide for continued responsible maintenance of facilities, while maintaining a balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for the assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

The Plan recommends the development of criteria for determining if the existing Spokane Regional Solid Waste System owned transfer stations need to be upgraded. The need for additional Spokane Regional Solid Waste System owned and/or privately owned transfer stations operating within the Spokane Regional Solid Waste System should also be evaluated. Both the tonnage queuing capacity of the existing System Transfer Stations are not adequate.. The limited queuing space available at the Valley Transfer Station increases the time required to process through a facility can serve as an economic disincentive to commercial activities sensitive to time factors and costs. The SWAC is ideally suited for and willing to assist in development of the criteria necessary to support this recommendation.

The Plan strongly encourages regional planning leading to the establishment of locations for staging and processing of large surge volumes of debris that result from major disasters. Potential incidents for the Spokane area realistically include volcanic eruptions, wind storms, firestorms, ice storms, railroad derailment, and/or terrorist attack. Pre-identification of staging areas and the establishment of contingency handling processes, including potential contracted services, will ultimately reduce the impact of such disasters, increase the public safety during response/cleanup operations, and lessen the overall impact on our region.

1. Develop criteria for determining if the existing transfer stations need to be upgraded, including assessing operations for improvements in efficiencies.
2. Assess needs for additional transfer stations.
3. Establish locations for staging and storage of natural disaster debris.
4. Offer reuse areas at System facilities if costs, logistics, and demand for the service justify implementing a program.

[i] M. Bramble, 2006.
[ii] Federal Emergency Management Agency, "Debris Management Guide - FEMA Publication 325," available at: http://www.fema.gov/government/grant/pa/dmgtoc.shtm.
[iii] Ibid, page 12.
[iv] Ibid, Appendix A.
[v] 1 acre = 4,840 square yards.
10-foot stack height = 3.33 yards.
Total volume per acre = 4,840 square yards/acre x 3.33 yards = 16,117 cubic yards/acre.

SECTION 8

Energy Recovery/Incineration

8.1 Existing Conditions

8.1.1 Waste-to-Energy Facility Description

The City of Spokane owns and contracts for the operation of the Waste-to-Energy (WTE) Facility through the Spokane Regional Solid Waste System (System).

The WTE Facility commenced commercial operation on November 6, 1991. It is designed to process waste from mixed residential, commercial, and industrial sources. The WTE Facility incinerates municipal solid waste using two 400-ton-per-day "mass-burn" combustion units to generate steam and electricity by means of a 26-megawatt turbine generator. Each furnace is designed to burn 400 tons each day, but conservative design parameters allow them to operate in excess of that amount. The facility includes an air pollution control system consisting of dry scrubbers, GORE-TEX® baghouses, a Thermal DeNox system, and a urea to ammonia (U2A) system (Spokane Regional Solid Waste System, 2005). Both fly ash and bottom ash are collected and transported to the Roosevelt Regional Landfill (RRLF) for disposal. Ferrous metals are recovered from the bottom ash stream and recycled. An air-cooled condenser is used in lieu of a cooling tower to reduce the moisture resulting from the facility and to minimize any contributory effect on fogging at the Spokane International Airport, which is located approximately 1,500 feet from the facility.

8.1.1.1 Emissions Controls

Facility emissions, including those from the boiler units and fugitive emissions, are regulated through the facility's Title V Air Operating permit, Notice of Construction (NOC) permit issued by the Spokane County Air Pollution Control Authority (SCAPCA), and the Prevention of Significant Deterioration (PSD) permit issued by Ecology. The permits require continuous emission monitors, monthly reporting, and annual stack tests. The monitors, which are located in the stacks, provide data on oxygen (O_2), carbon dioxide (CO_2), nitrogen oxides (NO_X), sulfur dioxides (SO_2), temperature, and opacity every 15 seconds. These data are compiled into the monthly report.

The annual stack tests sample emissions at the spray dryer absorber inlets and the fabric filter outlets. The parameters measured include:

- Gas temperature.
- Gas velocity.
- Gas molecular weight (O_2 and CO_2).
- Gas moisture content.
- Volumetric flow rate calculated from the above measurements.
- Particulate and condensable matter.
- Sulfur dioxide (SO_2).

- Nitrogen oxides (NO_X).
- Sulfur oxides (H_2SO_4, SO_3, and SO_2).
- Visible emissions (opacity).
- Carbon monoxide (CO).
- Trace metals (including As, Be, Cd, Cr, Pb, Ni, Se, Zn).
- Fluoride (as HF).
- Chloride (as HCl).
- Hexavalent chromium (Cr^{+6}).
- Nonmethane hydrocarbons (NMHC).
- Mercury (Hg).
- Semivolatile organic compounds [including polychlorinated dibenzodioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs), polyaromatic hydrocarbons (PAHs), and polychlorinated biphenyls (PCBs)].

This testing is performed to demonstrate compliance with the System's Title V Air Operating permit and NOC permit. Copies of the full reports are on file in the System office and summaries of test results are available online at www.solidwaste.org. The Health Risk Assessment required by Ecology as a condition of the construction grant was completed and accepted by Ecology in 2001. A copy of this report is on file in the City of Spokane's Environmental Programs office. The facility is in compliance with all permits.

When the WTE Facility began operating in 1991, Thermal DeNox was considered state-of-the-art technology for controlling nitrous oxides from the plant. This technology requires injection of pressurized anhydrous ammonia into the boiler. As a result, up to 70,000 pounds of anhydrous ammonia was stored at the plant. Anhydrous ammonia is recognized as a dangerous chemical and potential health threat. For this reason, the System and WSI sought to eliminate it from the site.

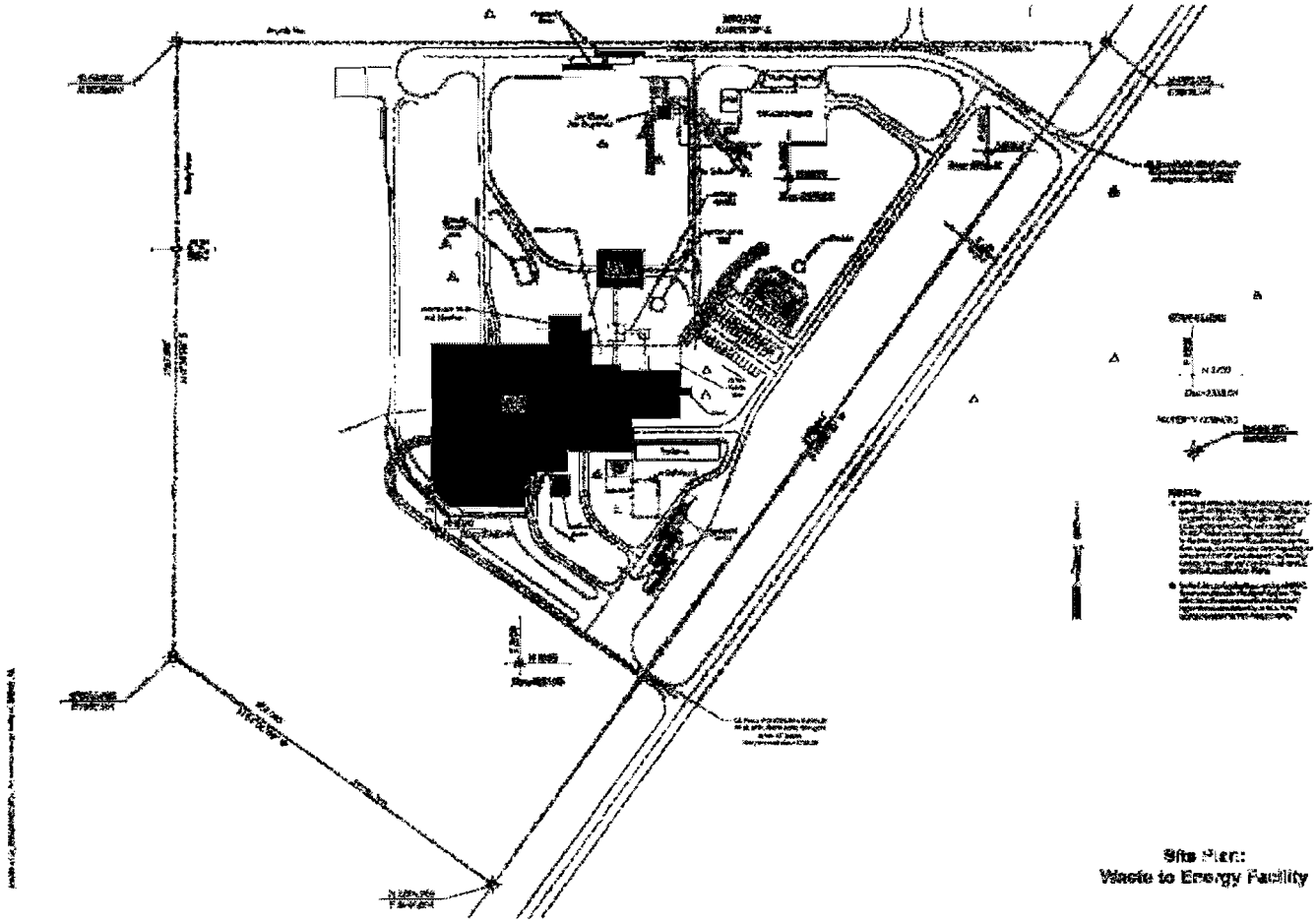
After a thorough investigation of alternatives, it was decided that the technology developed and licensed by Wahlco was the best system for controlling nitrous oxides from Spokane's plant. The Wahlco technology, known as Urea to Ammonia (U2A), generates ammonia on demand by using liquid urea and hydrolyzing it in a reactor. The need to store large quantities of ammonia was eliminated.

The retrofit project began in July 2005 and at the end of 2005 installation was complete. Final acceptance testing of the air treatment system was done in 2006 (Spokane Regional Solid Waste System, 2005).

8.1.2 Facility Site

The WTE Facility is located on a 52-acre site in Spokane County approximately 1.5 miles west of the City of Spokane limits (see Exhibit 8-1). The property is owned by Spokane County and the City of Spokane, and is leased to the System pursuant to a 30-year Facility Site Lease through the Spokane International Airport. This lease will expire in 2011, and will need to be renegotiated at that time. The site is zoned "restricted industrial." Land adjacent to the site is also zoned "restricted industrial" or manufacturing, including a commercial zone on the southeast border of the site.

EXHIBIT 8-1
WTE Facility



8.1.3 Facility Operations

8.1.3.1 General Operations

The WTE Facility is designed to process waste 24 hours per day every day of the year except for three scheduled maintenance periods. The facility receives waste from commercial haulers and the public 7 days per week from 7:00 a.m. to 4:30 p.m., closing on six designated holidays (New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving, and Christmas).

The guaranteed available capacity for acceptable municipal solid waste is 248,200 tons per year (TPY). Since opening in 1991, the facility has exceeded all operations performance standards. In 2004, the WTE Facility processed 282,479 tons (Spokane Regional Solid Waste System, 2005).

Wheelabrator Spokane Inc. (WSI) operates the facility, under contract to the System. WSI is a wholly owned subsidiary of Wheelabrator Technologies, Inc. (WTI), which is a subsidiary of Waste Management, Inc.

The facility includes three scalehouses, two independent refuse receiving areas, and a storage pit area with approximately 6 days of disposal capacity. Two overhead cranes mix and sort the waste and deliver it into the hopper for incineration. Combustion occurs in two waterwall furnaces. Each furnace has a design capacity of 400 tons per day of solid waste, having a heating value range of 3,800 to 5,500 British thermal units (Btu's) per pound. As hot gases resulting from combustion move through the boiler sections of the furnace, steam is generated and directed to the condensing turbine generator to produce electricity. The ash generated by the combustion process is approximately 30 percent of the incoming material by weight, but only about 10 percent by volume (Spokane Regional Solid Waste System, 2005). The Facility's ash is treated at the WTE facility using the Wesphix process. The ash consistently passes TCLP, pH, and bioassay tests, and therefore is neither a dangerous waste nor special incinerator ash.

8.1.3.2 Energy Generation

The facility is designed to produce a net electric output of at least 505 kWh per ton of solid waste processed on an annual average basis, while processing acceptable solid waste that has a heating value range of 3,800 to 5,500 Btu's per pound. All electricity generated by the facility, except that used for in-plant purposes, is sold under contract to Puget Sound Energy (formerly Puget Sound Power and Light Company). The contract was established for a period of 21 years from the commencement of commercial operation of the facility. The electricity enters the transmission system of Avista, Inc., through an interconnection line, and is wheeled to the Puget distribution system through the transmission lines of that company and the Bonneville Power Administration.

The facility produced 179,121 megawatt hours (MWh) of electricity in 2004 and sold 148,603 MWh, with net revenue of $12,609,695 (Spokane Regional Solid Waste System, 2005). Revenues generated from electricity sales constitute revenues of the System. If improvements are needed to the facility, the System, as the owner, is responsible for the costs of those improvements. Any other operational repairs and replacements are paid for by WSI.

Exhibit 8-2 includes an overview summary of the general roles and responsibilities of the WTE Facility based on contract provisions with WSI (specific exceptions apply to many of these general responsibilities).

EXHIBIT 8-2
Overview of General Roles and Responsibilities at WTE Facility

Responsibility	The System	Wheelabrator Spokane, Inc.
Operation, Maintenance, and Repair		X
Facility Site Repair and Maintenance		X
Equipment Maintenance		X
Compliance with All Permits	X	X
Compliance with Environmental Laws	X	X
Delivery of 220,000 TPY of Acceptable Waste	X	
Providing Landfill Capacity	X	
Processing 248,200 tons per year of MSW		X
Generating Electricity (505 kWh/ton)		X
Design and Construction of Capital Projects		X
Paying for Capital Projects (System-directed)	X	
Paying for Capital Projects (WSI-directed)		X

The WTE Facility processed over 282,479 tons of municipal solid waste (MSW) in 2004, resulting in 85,562 tons of ash and 8,955 tons of recovered ferrous metals. Exhibit 8-3 includes a comprehensive list of tonnage handled by the WTE facility since 2000, including ferrous metals recycled from the ash, ash sent to the Roosevelt Regional Landfill, and white goods collected from the tipping floor for recycling (Spokane Regional Solid Waste System, 2005).

EXHIBIT 8-3
Solid Waste Tonnage Processed at WTE Facility, 2000-2004

Year	MSW Processed at WTE	Ash	Recovered Ferrous Metals	Roosevelt Regional Landfill	Recovered White Goods
2000	270,842	91,455	9,211	35,127	889
2001	268,390	71,242	10,337	31,140	971
2002	274,506	77,571	12,394	60,304	N/A
2003	266,044	76,871	10,416	38,274	1,098
2004	282,479	85,562	8,955	41.424	1,066

N/A = No Available Data

8.1.3.3 Operational Costs of Facility

As discussed, the WTE Facility is owned by the System and operated under an operations service agreement with WSI. The System is required to pay a monthly service fee for operation of the facility. The service fee generally includes:

- A Base Operating Fee $35.195 per ton (2004), adjusted annually to reflect specific cost indices.
- Pass-Through Costs that include items such as certain taxes, insurance premiums, and utility costs.
- An Energy Revenue Credit, equal to approximately 10 percent of the revenue from energy sales.
- A Material Recovery Credit, equal to 50 percent of the net revenues from the sale of recovered materials (at $15/ton in 2004).
- An Energy Revenue Shortfall payment that is based on the total amount of energy produced at year-end.
- Turbine Upgrade Credit Adjustment.

In 2004, the average Service Fee paid by the System to WSI was $39.19 per ton.

In 2004, the System net costs for the WTE Facility were:

Debt Service	$ 10,248,600
Operations and Maintenance	12,740,906
Electricity Sales (credit)	(12,609,695)
Capitalized Expenses	1,331,178
Total Costs:	$ 11,710,989*

* Net costs are covered by tipping fee revenues.

8.1.3.4 Ash, Bypass, and Nonprocessible Wastes

The System is required by WSI to provide a landfill site and has made necessary arrangements for landfilling of certain types of solid waste pursuant to the terms of the contractual agreement. The System entered into a 10-year contract (from September 11, 1991) with Regional Disposal Company (RDC) to provide for the transportation and disposal of facility ash and the disposal of certain System bypass and nonprocessible waste at the RRLF. RDC owns and operates the RRLF, which is located approximately 200 miles southwest of Spokane County in Klickitat County, Washington. The System extended this RDC contract to 2011 with one additional 5-year term.

The RRLF has been permitted for the acceptance and disposal of WTE Facility ash in compliance with state regulations. Excess MSW and ash residue from the facility is currently being disposed at the RRLF. A special incinerator ash permit was issued in compliance with the provisions of the State's Special Incinerator Ash Residue Act (RCW 70.138). Permit

conditions included construction of an ash monofill, maximum daily receipt of 280 tons, and maximum yearly quantities of 102,200 tons.

In addition, the System's Northside Landfill, located on the north side of the City of Spokane, is also available to dispose of System bypass and nonprocessible waste.

The City of Spokane acquired a site in an area called Malloy Prairie in west Spokane County for a future ash monofill landfill as a long-term alternative to the RRLF, if that became necessary. An environmental impact statement was completed before site acquisition, but applications for permits have not been filed.

8.1.4 Waste-to-Energy Facility Tours

Tours of the WTE Facility are offered throughout most of the year. The tours are free of charge to interested individuals on a walk-in basis and to groups by appointment. Tours are available twice per day on Wednesdays and Thursdays and for groups of 10 or more by appointment. The tour begins with an information video, and includes a discussion of the solid waste management priorities of waste reduction, reuse, and recycling, including the ferrous metals recovered from the ash. During 2004, 890 students and 296 adults visited the facility. Elementary and middle school groups account for about half of the visitors. Other visitors include high school and college classes, special youth and adult groups, international students, international VIPs, and individual walk-ins (Spokane Regional Solid Waste System, 2005).

The tours provide an excellent education on solid waste management programs in Spokane County. The tour allows residents to view the WTE Facility processes and air pollution control equipment. In addition, tour participants learn about recycling, waste reduction, composting, and the integrated solid waste programs offered by local governments and private industries in Spokane County.

8.2 Key Issues

The System's WTE Facility provides permanent disposal of Spokane County solid waste in the most environmentally responsible method. The facility converts solid waste into electrical energy, allows for the destruction of dangerous organic products such as pharmaceuticals, and offers a sustainable method of solid waste disposal for future generations. The System's WTE operation is integrated with waste reduction, recycling, landfilling and refuse collection operations, and adheres to the waste handling priorities defined in Revised Codes of Washington (RCW) 70.95.

The timing of the 2009 Plan is unique because recommendations must satisfy bond obligations as well as explore foundations for continued solid waste management needs after those bonds are retired. Though the City of Spokane is responsible for repayment of the bonds, scheduled for retirement in 2011, System facilities and programs are designed to serve the needs of residents and businesses countywide. Regional cities and the County are partners through interlocal agreements that guarantee they will bring their waste to the System, providing revenue to the System through the tipping fees.

8.3 Alternatives

1. Maintain the WTE Facility to continue operations after bond retirement.
2. Add a third boiler to the WTE Facility.
3. Evaluate front-end processing of waste to improve recovery of material prior to incineration.
4. Develop Malloy Prairie landfill site for ash disposal.
5. Close WTE Facility.
6. Combine the ash and bypass disposal contract with the WTE operating contract instead of renewing the existing contract.
7. Maintain the WTE Facility to continue operations after bond retirement to serve the City of Spokane only.
8. Sell the WTE Facility to a private company or public energy utility.
9. Sell Malloy Prairie landfill site.
10. Prohibit importation of waste for combustion at the WTE Facility.
11. Recycle the fly ash from the WTE Facility.
12. Confirm that the WTE plant can meet requirements if Washington adopts the California standard of CO2 emissions for energy sources.
13. Consider alternative energy recovery disposal methods (earthen digester – or other similar facility) as alternative to trap methane gas and use for energy.

Further information is provided below for each alternative.

1. Maintain the WTE Facility to continue operations after bond retirement.

The WTE facility has operated since 1991. Typically, waste-to-energy facilities have a useful life of approximately 40 years, but with appropriate maintenance and upgrades, such as with Spokane's WTE Facility, its useful life can extend far beyond that; therefore, the WTE Facility will not exceed its remaining useful life during the solid waste management planning period. In general, the facility should continue to operate unless conditions change that make its operation not viable compared to other solid waste management alternatives. The System should continue to maintain the WTE facility to maximize its useful life, continuing to upgrade and renovate, as necessary, to provide continuous operation of the facility in compliance with all applicable federal, state, and local requirements.

Additionally, the System should investigate and consider implementation of new technologies for the WTE Facility such as efficiency upgrades, additional emissions controls, or non-ferrous metal recovery.

2. Monitor and assess the need for adding a third boiler at to the WTE Facility.

The WTE Facility has two 400 ton-per-day units for a total design capacity of 800 tons per day (TPD) or 248,200 tons per year (based on 85 percent availability). The facility has processed waste above that original design capacity for the past several years due to increased efficiency, as is shown in Exhibit 8-3. In fact, the facility has demonstrated a capacity of over 282,000 tons per year (TPY), which was the amount of waste processed in 2004. However, as Spokane County has continued to grow, the amount of waste requiring processing has surpassed the operating capacity of the WTE Facility. As a result, municipal solid waste has requires alternative disposal methods at RRLF or NLF.

The current design of the WTE Facility includes provisions for the future addition of a third boiler unit and required ancillary equipment. The addition of a 400 TPD unit would increase the capacity of the WTE Facility to 1,200 TPD or 372,300 TPY (based on 85 percent availability). The System should assess the need for a third boiler using waste generation estimates, taking into account projected recycling. The System can assess the economic viability of a third boiler, comparing costs for construction and operation against the costs of landfilling excess municipal solid waste.

As part of this alternative, the System could also consider importing waste from outside the County to use excess capacity, thereby increasing the energy generation of the facility, and revenues associated with this.

3. Evaluate front-end processing of waste to improve recovery of material prior to incineration.

A front-end processing facility, using a combination of manual and mechanical sorting, would allow the removal of non-separated recyclables and bulky, non-combustible materials from the waste stream. This facility would essentially operate as a “dirty” MRF.

For a typical front-end processing facility, mixed waste is dumped on the tipping floor and pushed onto a conveyor by a front-end loader. Usually, residential waste must go through a bag-breaking operation. Screening drums or other special equipment such as air classification units are used to separate the mixed waste stream generally into size classifications: an undersize stream (fine particles and aggregate materials) and an oversize stream that contains recyclables and other large objects.

Ferrous metal is typically removed by an overhead electromagnetic separator. After passing through the magnet, the remaining waste often proceeds onto hand sorting conveyors. These are elevated, slow-moving conveyors that allow sorters to select recyclables and drop them into chutes leading to storage bunkers or processing equipment. Hand-sorting can be reduced or eliminated by using a high level of mechanical technology and by the limiting the scope of commodities recovered.

The remaining waste can be further processed as a means to manage emissions (for example a trommel screen to remove items such as button batteries) or to reduce facility maintenance. After final processing, remaining wastes are diverted back to the tipping floor for combustion.

Capital costs for such a facility are variable and dependent on the level of mechanization and sophistication of the facility.

A typical capital cost range is $20,000 to $30,000 per ton of daily capacity. Operations and maintenance costs typically range from $40 to $60 per ton of waste processed.

4. Develop Malloy Prairie Landfill site for ash disposal.

The System is required by WSI to provide a landfill site and has a contract with Regional Disposal Company (RDC) to 2016 to provide for the transportation and disposal of facility ash at the RRLF, located in Klickitat County, Washington. In 2004, over 85,000 tons of ash was generated at the WTE facility that required disposal.

Presently, the ash is loaded into intermodel containers and trucked to the Yardley Intermodel Facility. There, they are loaded onto trains and sent by rail to the RRLF. The System currently experiences problems with interrupted deliveries of containers—both for pick up of full containers and delivery of empty containers. In general, these problems are due to increased use of rail lines by higher valued freight and unavailability of trains to handle increased freight demands. These problems are anticipated to increase, as tonnage shipped to regional landfills is expected to increase in the future.

The City of Spokane acquired a site in an area called Malloy Prairie in west Spokane County for a future ash monofill landfill as a long-term alternative to ash disposal at the RRLF, if that became necessary. An environmental impact statement was completed before site acquisition, but applications for permits have not been filed. The System could re-evaluate the development of the Malloy Prairie site for use as an ash landfill. This would eliminate the need for shipping the ash to Klickitat County, and would also reduce the problems associated with the availability of rail cars.

5. Close WTE Facility.

Following retirement of the bonds in 2011, the System could consider closing the WTE facility and converting it to strictly a transfer facility. This alternative would include decommissioning of the burners and ancillary equipment, and adding compactors and a loader to facilitate transfer operations. Added costs would be associated with the decommissioning, installation of the new equipment, as well as operations and maintenance of the facility. If the WTE Facility closes, the System would have to repay a portion of the grant from Ecology.

6. Combine the ash and bypass disposal contract with the WTE operating contract instead of renewing the existing contract.

The existing ash and bypass disposal contract is with a different company than the contract for the operation of the WTE facility. When there are problems in providing enough railcars to keep up with the delivery of waste at the WTE Facility, the operational consequences from the excess waste on the tipping floor are not handled by the bypass disposal contractor, but are handled by the System and the WTE operator. If the WTE was contracted to deal with the problems of excess waste on the tipping floor, they may have an incentive to provide more efficient service in handling ash and bypass waste from the WTE facility. Combining

the contract for the operation of the WTE facility with the ash and bypass waste disposal contract may reduce the competitiveness of bids. Since the WTE operators do not operate the transfer stations, a combined contract may not have any effect on operational problems at the transfer stations from excess waste due to a lack of adequate railcars.

7. Maintain the WTE Facility to continue operations after bond retirement to serve the City of Spokane only.

If the current Spokane Regional Solid Waste System were disbanded and the County and the regional cities chose to contract with other disposal facilities, the City of Spokane should consider the feasibility of operating the WTE facility for City of Spokane residents.

8. Sell the WTE Facility to a private company or public energy utility.

The City of Spokane could consider selling the WTE Facility to a private company or public energy utility.

9. Sell Malloy Prairie Ash Landfill site.

The City of Spokane could consider selling the Malloy Prairie ash landfill site. Selling the property would reduce the competitiveness of the System in negotiating a new ash disposal contract.

10. Prohibit importation of waste for combustion at the WTE Facility.

The WTE accepts certain wastes from outside of the county. These include wastes that the generator specifically wants disposed in the incinerator to ensure destruction, such as secure documents, drug paraphernalia, or proprietary materials. The System charges a premium rate for these "special burns."

11. Recycle the fly ash from the WTE Facility.

Ash recycling is discussed in Section 10, Miscellaneous Waste.

12. Confirm that the WTE plant can meet requirements if Washington adopts the California standard of CO_2 emissions for energy sources.

The use of waste-to-energy technology prevents the release of forty million metric tons of greenhouse gases in the form of carbon dioxide equivalents that otherwise would be released into the atmosphere on an annual basis, according to an analysis developed by the U.S. Environmental Protection Agency and the Integrated Waste Services Association (IWSA) using EPA's Decision Support Tool program. Annual reporting by IWSA to the U.S. Department of Energy's Voluntary Reporting of Greenhouse Gases Program confirms that waste-to-energy also prevents the release each year of nearly 24,000 tons of nitrogen oxides and 2.6 million tons of volatile organic compounds from entering the atmosphere.

America's waste-to-energy facilities dispose of trash, and are an alternative to land disposal that releases methane (a potent greenhouse gas) as trash decomposes. Waste-to-energy also produces electricity, lessening reliance on fossil fuel power plants that release carbon dioxide, another greenhouse gas, into the atmosphere when coal or oil is burned. Operation of waste-to-energy plants avoid the release of methane that otherwise would be emitted when trash

decomposes, and the release of CO_2 that would be emitted from generating electricity from fossil fuels.

In addition to the analysis using EPA's Decision Support Tool, and 8 years of reporting by the IWSA to the U.S. Department of Energy, a detailed, project analysis of a facility's contribution to solving the threat of global warming has been completed for a 1500-ton-per-day waste-to-energy facility in the Northeast.

Researchers used information regarding alternative landfill disposal, plant emissions, trash composition, and other plant-specific data and analyzed the information using the EPA Decision Support Tool. The study determined that about 270,000 tons of carbon dioxide equivalent emissions are avoided annually because of this one plant's operations. Company officials currently are talking to greenhouse gas credit brokers about marketing the reductions to buyers of GHG credits.

13. Consider alternative energy recovery disposal methods (earthen digester – or other similar facility) as alternative to trap methane gas and use for energy.

This topic is discussed in Section 9, Landfills.

8.4 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the energy recovery alternatives discussed above lead this Plan to recommend implementing a progressive but monitored approach to operating the Waste to Energy facility. This approach will provide for continued responsible maintenance and operation of the facility while maintaining a sustainable balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for further assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

Provided that the WTE facility remains an element of the region's solid waste management strategy, plant operations must remain responsive enough to be able to meet future State and Federal air emissions requirements through the application of maximum achievable controls technology in a manner that is deemed cost effective and affordable.

The federal government considers municipal solid waste to be a renewable energy source. The electricity produced from steam, generated as a result of the mass burn process, is a clean, easily distributed form of energy that contributes to the sustainability of our community. The revenue generated from the sale of the recovered energy helps offset the cost of the overall waste management system and allows for the subsequent disposal of solid waste in a manner that is less harmful to our environment. Additionally, there remains a

substantial amount of low-grade process heat after the steam turbine electrical generation process that might be sold as district heat in nearby development of the Spokane Airport Business Park.

The Plan recommends the careful assessment of expansion of the WTE Plant, specifically the addition of a third boiler, including considering the impacts from regional solid waste generation volumes. However, the capital bonds required to pay for the initial construction of the WTE Plant will be completely paid off by 2011. This will significantly lower the annual cash flow requirements of the system and perhaps allow for a substantive reduction in tipping fees. The plant has been well maintained and with continued maintenance, has many years of useful life remaining. Therefore, it makes sense to continue operations under the conditions stated above and to take advantage of this opportunity to lower overall system costs and/or tipping fees to competitive levels.

The Plan strongly encourages assessing all options that can reduce the cost of plant operations to be considered, including in-house operation, contracted operations, or its sale to a private entity.

The Plan also recommends consideration be given for additional waste processing on the receiving side in order to remove more material that is not burnable and to increase the recovery of recyclable materials. Similarly, the Plan recommends the pursuit of post-processing technologies for the substantial amount of residual ash that is a byproduct of the mass burn process. Possible applications include encouraging the use of bottom ash as a component of non-structural fill for roads, parking lots, and building sites. Possible uses for the fly ash might be as a component in cementitious construction materials as a substitute for cement. Additional waste processing at the WTE Plant and the system transfer stations can further increase recycling rates and improve the overall performance of the plant.

Finally, the Plan encourages the local consumption of the WTE Plant's energy production to help satisfy the area's needs, particularly for public infrastructure that is more heavily energy dependent, such as wastewater treatment or an electrified regional light rail system.

1. Maintain the WTE Facility to continue operations after bond retirement.
2. Assess issues and parameters of adding a third boiler to the WTE Facility.
3. Evaluate front-end processing of waste to improve recovery of material prior to incineration.
4. Assess development of Malloy Prairie landfill site for ash disposal.
6. Assess combining the ash and bypass disposal contract with the WTE operating contract instead of renewing the existing contract.
8. Assess sale of the WTE Facility to a private company or public energy utility.
9. Assess sale of Malloy Prairie landfill site.

SECTION 9

Landfill Disposal

9.1 Introduction

Landfills are disposal facilities or a part of a facility at which solid waste is permanently placed in or on the land, including facilities that use solid waste as a component of fill (Chapter 173.350.100 WAC). Landfilling of solid waste involves placing waste material in specially prepared sites that are regulated under Chapters 173-350 and 351WAC. Solid wastes are spread in thin layers, compacted to reduce volume, and covered each day with a material such as soil or a special synthetic cover. Modern landfills are sited, designed, and operated to prevent any adverse effects to ground- and surface water or to surrounding land uses.

Landfills are an important component of any solid waste program. For Spokane County, landfilling is a necessary and integral part of their disposal system requirements because:

- A landfill provides disposal for nonprocessible solid waste that cannot be incinerated, or bypass waste that exceeds the capacity of the WTE Facility and rail is not immediately available.
- An ash monofill, which is a landfill designed to accept ash, provides for the disposal of ash residue from the WTE Facility.
- A landfill provides an immediate emergency backup disposal option for disaster management if rail is not immediately available.

The current landfill program for Spokane County includes the export of nonprocessible and bypass wastes, as well as incinerator ash, to the Roosevelt Regional Landfill (RRLF) located in Klickitat County, Washington. In addition, the System owns and operates a 10-acre lined municipal solid waste (MSW) cell at the Northside Landfill (NSLF), which receives primarily bypass construction, demolition, and landclearing debris and inert waste material (CDL/I), and is designed under the Minimum Functional Standards (Chapter 173-351 WAC).

9.1.1 Goals and Objectives

Spokane County's primary goals for landfilling are to:

- Provide adequate backup disposal capacity for MSW and, as needed, WTE ash during the planning period (2009 to 2029).
- Provide facilities that allow for disposal in a cost-effective and environmentally sound manner.
- Continue to develop and procure cost-effective agreements for out-of-county disposal of bypass, nonprocessible, and incinerator ash at the regional landfills over the planning period.

- Maintain in county landfilling capacity or out-of-county landfill contingency plans to ensure that a backup disposal system is available for emergency situations.

9.1.2 Recommendations of the 1998 Plan for Landfills

As part of the 2009 Plan update process, recommendations from the 1998 Plan were reviewed to determine their status and to determine whether they should be considered in the 2009 Plan. The following recommendations regarding landfills were implemented:

1. The System should continue using the RRLF for its ash disposal needs for the remainder of the term of its contract with Regional Disposal Company (RDC). If bypass and nonprocessibles are not sent to the NSLF, these wastes should continue to be sent to the RRLF.
2. Two to three years prior to the expiration of the System's contract with RDC, System staff should investigate whether to issue a request for proposals or bids to the private sector for out-of-county disposal of ash and bypass MSW, or exercise its option to extend its contract with RDC for another 5-year term. The System should consider renegotiation of its contract prior to this time if an opportunity develops for the System to receive more favorable contract terms.
3. Because of environmental considerations, including aquifer protection, no new unlined sites for the land disposal of demolition materials, tires, or industrial wastes shall be allowed within Spokane County or in any incorporated areas within the County. Inert wastes, if separated from non-inert demolition materials, may continue to be accepted by unlined inert landfills or used as fill. Inert waste, in this recommendation, means noncombustible solid wastes such as clean and uncontaminated rocks, cured cement, sands and soils, glass, and bricks. Noncombustible materials not listed above may be considered "inert waste" if designated inert based in WAC 173-350-990. Any new private or public landfill proposal or expansion of existing landfills must be accompanied by a full Environmental Impact Statement rather than a Checklist, and must meet zoning requirements.

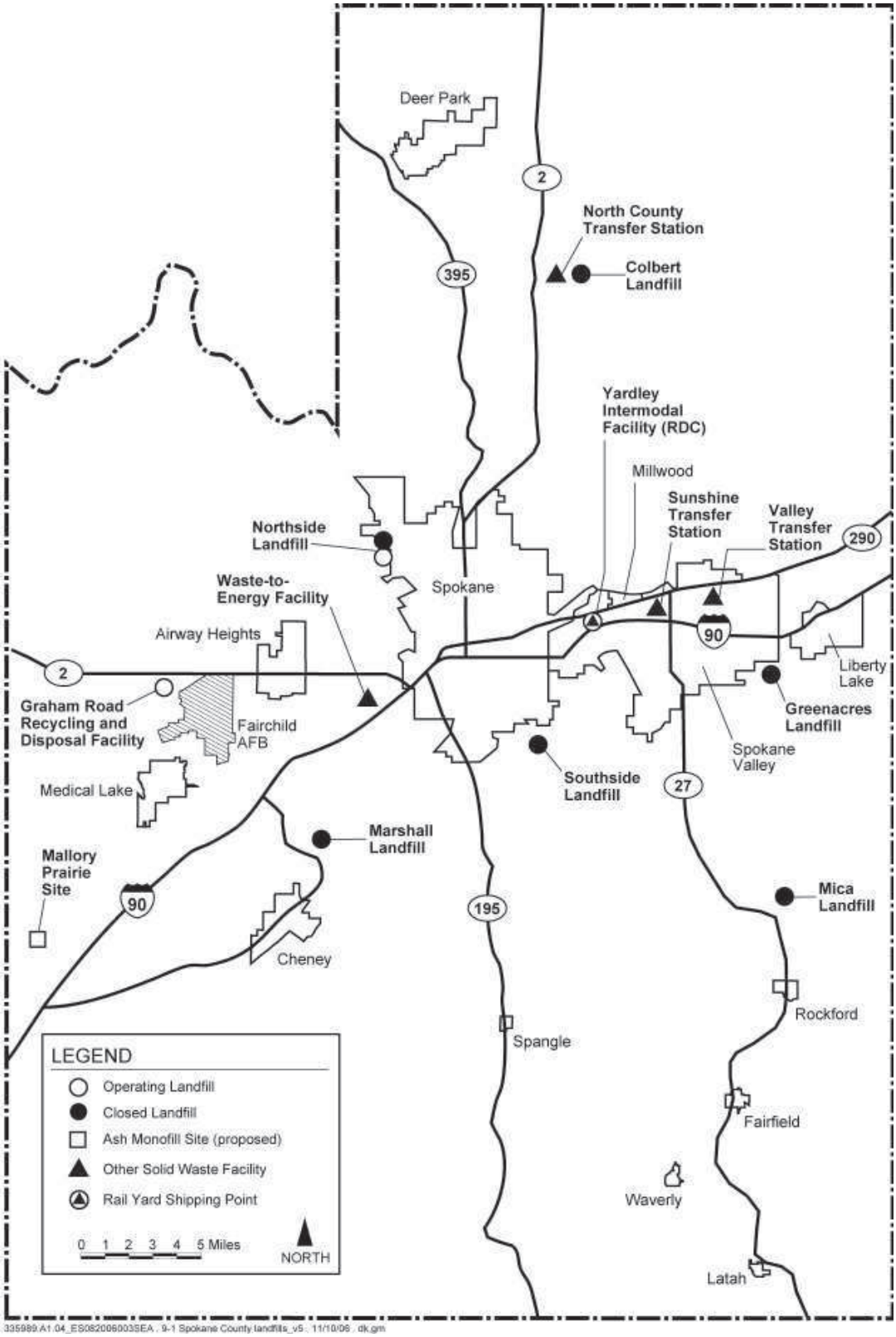
9.2 Existing Conditions

A map depicting the location of landfills in Spokane County is included as Exhibit 9-1. A table identifying the operating characteristics of each landfill is included in Exhibit 9-2.

9.2.1 Closed Landfills

Five landfills in Spokane County are closed and are undergoing post-closure activities: the Colbert, Greenacres, Mica, Northside (portion), and Southside landfills. The Marshall landfill is partially closed. All are located in unincorporated areas of the county.

EXHIBIT 9-1
Landfills in Spokane County



335989.A1.04_ES082006003SEA . 9-1 Spokane County landfills_v5 . 11/10/06 . dk,gm

EXHIBIT 9-2
Spokane County Landfills

Landfill	Status	Operations	Date Waste Delivery Ceased	Post-Closure Period (years)
Colbert Landfill	Closed	Public - Spokane County	Operations - Oct. 1986 Covered 1996	20
Greenacres Landfill	Closed	Public - Spokane County	Operations - 1972 Covered 1996	30
Mica Landfill	Closed	Public - Spokane County	Operations - Dec. 1994 Covered - 1994	30
Northside Landfill (old landfill portion)	Closed	Public - City of Spokane	Operations - Dec. 1991 Covered - 1992	40
Southside Landfill	Closed	Public - City of Spokane	July 1987	40
Marshall Landfill	Partially Closed	Private (defunct)	Operations - Dec. 1991 Interim Cover 1991	To be determined
Northside Landfill (MSW cell)	Open	Public - City of Spokane	Not scheduled	N.A.
Graham Road	Open	Private - Waste Mgmt.	Not scheduled	N.A.

9.2.1.1 Unincorporated Areas (County Owned)

Colbert Landfill

The Colbert Landfill, owned by Spokane County, was a solid waste landfill operated by the County between 1968 and 1986. In addition to accepting MSW, the landfill accepted spent chlorinated solvents and other petroleum compounds during a portion of its operational history. The spent chlorinated solvents impacted groundwater in the landfill vicinity. The landfill was named a National Priorities List (NPL) site under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1982. The Remedial Investigation (RI) for the landfill identified six main contaminants affecting groundwater at the site. The Consent Decree identified the six hazardous substances as "constituents of concern" for groundwater impacted by the landfill, and required Spokane County to design, construct, and operate a groundwater pump-and-treat system as the remedial action (RA) to address groundwater contamination emanating from the landfill.

Construction of the RA treatment facility was completed in June 1994. The facility consists of 10 groundwater extraction wells; conveyance piping; a treatment facility; an integrated instrumentation control, monitoring, and data collection system; and a groundwater compliance monitoring system. The extracted groundwater is treated by air stripping at the treatment facility, which is located near the southwest corner of the landfill. Treated groundwater is discharged to the Little Spokane River.

Currently, the treatment plant is operating 24 hours a day and is expected to be online for the next 20 to 30 years. To meet compliance criteria, the influent and effluent, extraction wells, monitoring wells and selected domestic wells are monitored frequently for the constituents of concern as well as other environmental indicator parameters.

Additionally, the groundwaters impacted by the landfill are carefully monitored for drawdown and constituent concentrations throughout frequent system adjustments, and during adjustments for seasonal fluctuations in groundwater levels.

During site characterization, pilot studies, and treatment plant construction phases, Spokane County was given permission by the regulatory agencies to delay actual closure of the landfill site. When the studies and construction were completed, design of the cover system commenced in April 1995, and has been completed. The final cover system consists of a gas collection and treatment system, a HDPE geomembrane cover system, erosion control ditches and stormwater infiltration system, and perimeter security fencing. The final cover system was designed in accordance with the Washington State Minimum Functional Standards.

Greenacres Landfill

The Greenacres Landfill was used as a dump site as early as the 1940s. In 1951, the property was deeded to the Greenacres Township for use as a municipal dump. Upon dissolution of the township governmental structure in 1967, the responsibility for operating and regulating the site passed to Spokane County, which owns the landfill and was responsible for landfill operations until the site was closed in 1972.

During routine monitoring in 1978, Ecology discovered contaminants in a residential well located 600 feet downgradient of the landfill. In 1983, as a result of the contamination found at the well, the site was nominated for Superfund eligibility. The Greenacres Landfill was placed on the NPL in 1984 by the U.S. Environmental Protection Agency (EPA).

In 1987, the County initiated a Remedial Investigation/Feasibility Study (RI/FS). The RI was completed in 1989 and the FS in 1991. The final FS contained two different points of view. This is an uncommon occurrence, and because of the disagreement on the necessity for compliance with certain regulations, both Ecology and Spokane County's points of view were included in the final FS.

In 1994, Ecology issued an Enforcement Order requiring the County to monitor the groundwater for a number of indicator parameters over a 3-year period. At the end of the 3 years, a statistical analysis was performed to determine if the groundwater data met the "No Further Action" criteria outlined in the Enforcement Order. The data did not meet these criteria, and an RA involving the construction of an impermeable landfill cover and associated components was required.

The landfill cover system construction was completed in 1999. Other components include a landfill gas treatment system and stormwater collection system. The site also incorporates a long-term groundwater monitoring program.

Mica Landfill

The Mica Landfill was an MSW landfill owned by Spokane County and operated from 1972 to late 1991. From 1974 to 1987, Kaiser disposed of aluminum slag, known as black dross, at Mica. In 1984, a dangerous waste permit application was submitted to Ecology for disposal of black dross at the landfill.

In 1981, the EPA sampled the original Mica monitoring well and a domestic well located one-half mile to the south of the landfill. A solvent, 1,1,1-Trichloroethane, was detected in

both wells. In response, Spokane County initiated a three-phase assessment of the potential groundwater contamination. EPA conducted a preliminary assessment in 1984; and in 1985, Mica Landfill was added to the NPL.

In 1988, Ecology and Spokane County entered into a Consent Decree obligating the County to perform an RI/FS. The RI was completed and approved in 1992. As a result of the findings in the RI, Spokane County agreed to place a dangerous waste cover on the landfill as part of an Interim Action (IA) clause of the Model Toxics Control Act (MTCA). Cover system construction began in early 1994 and was completed in July 1995. The landfill cover system includes leachate and gas collection systems and stormwater controls.

Under the IA agreement, the landfill was monitored for a period of 5 years after completion of the cover system construction. At the end of the 5-year period (ending in 2000), Ecology reviewed the monitoring data collected at the landfill to evaluate cover performance and establish groundwater compliance criteria. Based on this review, Ecology approved a Final Cleanup Action Plan that incorporates the same components as the IA and includes a landfill cover system, leachate and gas collection systems, stormwater controls, institutional controls, standard maintenance and operations, and a long-term groundwater monitoring program.

9.2.1.2 Municipalities

The City of Spokane is the only municipality in the County with closed landfills.

Northside Landfill - Closed Portion

The Northside Landfill, owned by the City of Spokane, is a 350-acre site in the northwest corner of the City (see Exhibit 9-1). The site became the area's primary refuse dump in about 1931. During the 1930s and into the 1940s, the northeast portion of the site was an open dump where the refuse was burned. A refuse incinerator was constructed in the 1940s, but open burning continued at the site into the late 1950s. Between 1962 and 1973, landfilling began in the central area of the site using land-spreading techniques. In 1973, trench filling began in the landfill area adjacent to Nine Mile Road.

In the early 1980s, hydrogeologic investigations revealed the presence of volatile organic compounds (VOCs) in offsite groundwater samples taken from residential wells located northwest of the landfill. Spokane immediately supplied the residences with bottled water, and approved the extension of municipal water to the area.

On October 15, 1984, the EPA proposed the NSLF for inclusion on the NPL, which designates the site as a priority cleanup site. The site was formally placed on the NPL on June 10, 1986. In February 1986, Ecology and the City of Spokane signed an agreement for the NSLF site. Based on that report, dry cleaning sludges and wastewater treatment plant skimmings were identified as potential sources of chemical contamination in the landfill waste.

Spokane conducted an RI and submitted a draft RI report in October 1986; a draft FS report was submitted in early 1987.

In this report, Spokane evaluated various alternatives for addressing contamination problems in three areas: contaminated refuse, treatment plant skimmings, and groundwater.

After reviewing the draft FS, EPA and Ecology asked the City of Spokane to install additional monitoring wells. These wells were required to help characterize the extent of the contamination plume in the aquifer. Spokane and Ecology were unable to come to an agreement on the proposed wells, and Ecology requested that EPA take lead agency status for the project. Subsequently, EPA signed a consent order with Spokane on March 16, 1988, to complete the wells and undertake future remedial actions. On January 23, 1991, the U.S. District Court formally signed the NSLF Consent Decree.

The NSLF stopped receiving wastes by December 31, 1991, in accordance with the Consent Decree. Landfill closure activities were initiated with the development of the Closure and Future Operations Plan for the NSLF (CH2M HILL, 1991). Closure activities that have been completed at the site include:

- Groundwater extraction and treatment (system construction completed April 1992).
- Landfill gas collection and treatment (system construction completed November 1992).
- Onsite sewer relocation, operation, and maintenance (system construction completed December 1992).
- Construction of a cover system for the old 150-acre landfill area in accordance with the Minimum Functional Standards (MFS, WAC 173-304) (system construction completed November 1992).
- Surface water drainage control and infiltration system (system construction completed November 1992).
- Groundwater monitoring (ongoing).

The City of Spokane will continue to perform gas extraction, gas sampling, cover system maintenance and water monitoring on the site during the post-closure period. The groundwater extraction and treatment system will function until indicator VOC parameters monitored in groundwater wells fall below the threshold criteria established in the Consent Decree. Site maintenance has also increased as the cover system and flare station age. In 1993, the Washington State Professional Engineers Association gave the Outstanding Civil Engineering Achievement Award of Merit to the NSLF Closure Project.

Southside Landfill

This closed landfill contains approximately 72 acres, is over 30 years old, and was part of the Moran Township disposal site prior to 1960. The Southside Landfill stopped accepting waste on July 21, 1987. During 1988, the site was closed in compliance with Washington State landfill closure requirements (WAC 173-304). The final cover system consists of a landfill gas collection and treatment system, a geomembrane cover [60-mil high-density polyethylene (HDPE)], drainage and vegetation layers, and stormwater control berms and ditches.

The site is secured around its entire perimeter, with no public access allowed on the covered area and only limited public access in certain portions of the site. The City of Spokane maintains a mobile home at the landfill for an onsite caretaker. Operations include erosion control, grading control and repair, maintenance, site security, operation of a landfill gas flare

station, internal and external methane control, cap maintenance, and ongoing gas and groundwater monitoring.

9.2.1.3 Private Landfills

Marshall Landfill

The Marshall Landfill is privately owned and was privately operated. The landfill is located eight miles southwest of the City of Spokane, about 0.5-mile west of the unincorporated town of Marshall. This disposal facility received wastes from the Cities of Cheney, Spangle, Medical Lake, and Airway Heights, as well as from southwest portions of Spokane County. However, this facility was not used by the other cities within the County. Fairchild Air Force Base disposed most of its solid waste at this facility during the landfill's operation. In addition, a small portion of the total waste received at the Marshall Landfill was imported by a private refuse collector from Lincoln County.

Landfilling at the Marshall Landfill was initiated in 1971, adjacent to a County landfill that operated from 1954 to 1971. The Marshall landfill received municipal solid waste and industrial wastes, including black dross. Waste from a creosote spill was also disposed at the Marshall Landfill.

The Marshall Landfill accepted solid waste from 1971 to December 1991, when its existing variance from the Spokane Regional Health District (SRHD) expired. It was granted a limited variance in 1992 from the SRHD to allow for closure. However, the landfill never operated under the 1992 variance, and closure has not been completed. A portion of the landfill was capped. The main landfill was not capped but covered with two feet of sand. The company that operated the Marshall Landfill was financially insolvent when operations ceased, so the landfill was never officially closed.[i]

9.2.2 Landfill Regulations, Permitting, and Enforcement

A summary of landfill closure regulations, permitting requirements, and enforcement authority for the closed MSW landfills of Spokane County is shown in Exhibit 9-3.

EXHIBIT 9-3
Landfill Closure Regulations, Permitting, and Enforcement Responsibilities

Landfill	Landfill Regulations	Permitting Requirements	Enforcement Responsibility
Colbert	CERCLA Discharge to Surface Waters SRHD Solid Waste Regs/MFS SCAPCA Air Emissions	 NPDES Facility Permit Air Emis. NOC/Permit	EPA EPA SRHD[a] SCAPCA
Greenacres	MTCA SRHD Solid Waste Regs/MFS SCAPCA Air Emissions	 Facility Permit Air Emis. NOC/Permit	Ecology SRHD[ab] SCAPCA
Mica	MTCA SRHD Solid Waste Regs/MFS SCAPCA Air Emissions POTW Discharge	 Facility Permit Air Emmis. NOC/Permit Discharge Permit	Ecology SRHD[a] SCAPCA City of Spokane

EXHIBIT 9-3
Landfill Closure Regulations, Permitting, and Enforcement Responsibilities

Landfill	Landfill Regulations	Permitting Requirements	Enforcement Responsibility
Northside	Record of Decision Consent Decree SRHD Solid Waste Regs/MFS SCAPCA Air Emissions	 Facility Permit Air Operating Permit	EPA SRHD[a] SCAPCA
Southside	SRHD Solid Waste Regs/MFS	Facility Permit	SRHD[a]
Marshall	MTCA SRHD Solid Waste Regs/MFS	Facility Permit	Ecology SRHD[ab]

[a] Ecology provides technical review and guidance to Spokane Regional Health District (SRHD) in review of permit applications and submittals.

[b] SRHD permit requirements pending Model Toxics Control Act (MTCA) requirements for site remedial actions.

MFS: Minimum Functional Standards.
SCAPCA: Spokane County Air Pollution Control Authority.
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act.
NOC: Notice of Construction.

9.2.3 Operating Landfills

The operating non-inert landfills in Spokane County are the NSLF and Graham Road Landfill. An MSW landfill cell was opened by the System at the NSLF in January 1992 for emergency backup and disposal of bypass MSW and nonprocessible wastes from the WTE Facility. The System also uses an out-of-county landfill for disposal of ash, bypass, and nonprocessible waste at the RDC facility in Klickitat County. The Graham Road Landfill is a private limited purpose facility owned and operated by Waste Management, Inc.

9.2.3.1 Unincorporated Areas

Within the unincorporated area there is only one permitted operating limited purpose landfill, the Graham Road Recycling and Disposal Facility, which is privately owned and operated. However, there are several private businesses within the county that accept inert waste only: Busy Bee, Inland Asphalt Landfill, Diversified Recycling Industry, and Spokane Rock Products (refer to Section 11 for more detailed information).

Graham Road Recycling and Disposal Facility

The Graham Road Facility is owned and operated by Waste Management of Washington, Inc., and is located west of the City of Airway Heights and northwest of Fairchild Air Force Base. 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. Graham Road processes and markets recycled asphalt and concrete. In addition to traditional recycling of cardboard, metals, and some plastics, wood waste is segregated and ground into chips for local co-generating plants.

Graham Road has been in operation since 1991. Waste Management has owned and operated the landfill since 1997. The Graham Road landfill disposal cells are constructed with a composite liner system consisting of 2 feet of clay, 60 mil HDPE, 1 foot of leachate collection gravel, a geotextile filter fabric, and 1 foot of operations layer.

Waste Management performs measurements of the Graham Road Landfill disposal volumes and remaining capacity estimates on an annual basis. Through 2005, 1,750,000 tons estimated capacity has been used, leaving a remaining estimated capacity of 11,588,000 tons. Assuming typical waste volumes, the Graham Road landfill has a remaining capacity of approximately 100 years.

Approximate historical disposal volumes since 2000 (tons):

- 2000 = 101,850
- 2001 = 103,760
- 2002 = 104,330
- 2003 = 99,940
- 2004 = 124,360
- 2005 = 343,460

9.2.3.2 System Landfill Facilities

The System uses the RRLF located in Klickitat, Washington for the majority of its landfilling needs. The System also owns and operates the lined MSW landfill cell at the NSLF.

The availability of an MSW landfill within Spokane County is a requirement of the Waste to Energy operating permit from the Spokane Regional Health District (SRHD). The lined cell at NSLF fulfills this requirement currently and will for the next 5 years or so. The expansion of the site in a phase 2 project of the initial design would provide this into the future. Other options to fulfill the requirements of the WTE operating permit would be to construct a new MSW landfill in Spokane County, or for Waste Management's Graham Road landfill to be re-permitted as a Subtitle-D MSW landfill. In order to comply with the County Waste Flow Control Agreement and the Regional City Interlocal Agreements, any new or re-designated landfill intending to accept MSW generated within Spokane County would need to be designated as a System facility.

Currently, there are three types of waste managed by System facilities that are eventually disposed in a landfill, either in or outside of Spokane County: ash, bypass MSW from the WTE facility, and non-processible wastes such as sheet rock from the WTE and System transfer stations (see Exhibit 9-4).

EXHIBIT 9-4
System Landfill Use

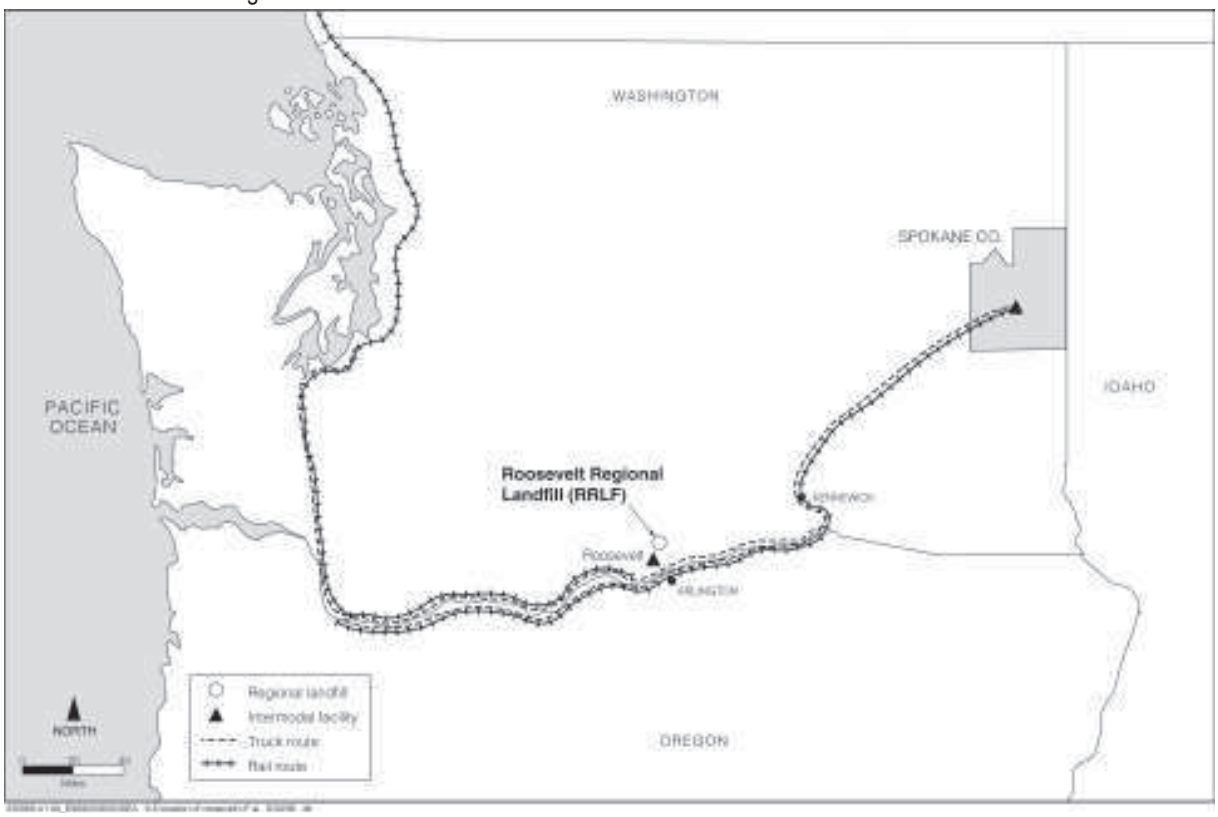
Material	Landfill	Location
Ash from the Spokane WTE Facility	RRLF	Out of County
Bypass waste from the WTE Facility	RRLF or NSLF	Both in and out of County
Nonprocessible wastes that are not suitable for recycling or processing at the WTE Facility	RRLF or NSLF	Both in and out of County

RRLF: Roosevelt Regional Landfill.
NSLF: Northside Landfill.

Ash from the WTE Facility has been regulated as special incinerator ash and is subject to the requirements of Chapter 173-306 WAC, Special Incinerator Ash Management Standards. The Facility's ash is treated onsite using the Wesphix process. Test results indicate that the ash consistently passes TCLP, pH, and bioassay tests, and therefore is neither a dangerous waste nor special incinerator ash.

The System uses RRLF for ash disposal. However, the City of Spokane continues to own an unpermitted reserve ash disposal site (Malloy Prairie) that is located in Spokane County and has potential as a future ash disposal site. Currently, ash is loaded into containers and sent by rail to the RRLF, operated by RDC, which is an affiliate of Rabanco Companies Ltd. From 1992 to 2005, the System sent an average of 87,922.25 tons per year of ash to the RRLF for disposal. RDC owns and operates the Roosevelt Landfill, located approximately 200 miles southwest of Spokane in Klickitat County, Washington, as shown in Exhibit 9-5.

EXHIBIT 9-5
Location of Roosevelt Regional Landfill



The System must also manage bypass waste diverted from the WTE facility when it is off-line for maintenance or because waste flow temporarily exceeds plant capacity. Bypass waste is sent to the RRLF or disposed at the NSLF MSW cell. The amount of bypass waste varies from year to year. For example, the System had an estimated 38,274 tons of bypass waste in 2003 and 41,423 tons of bypass waste in 2004. Furthermore, the RRLF is used for nonprocessible wastes (wastes that cannot be recycled or incinerated at the WTE facility).

The System entered into a 10-year contract (from September 11, 1991) with RDC to provide for the transportation and disposal of facility residue and the disposal of certain System bypass and nonprocessible waste at the Roosevelt Landfill. The System extended the contract to 2011 with one additional 5-year term.

The System also uses the NSLF MSW cell for a small amount of nonprocessible waste that typically consists of large bulky items, CDL waste, and assorted material not suitable for burning.
The NSLF MSW cell accepted 16,556 tons of waste in 2003 and 13,081 tons in 2004.
Exhibit 9-6 shows the volume of waste materials hauled to landfills outside of Spokane County, and the rates charged.

EXHIBIT 9-6
Waste Landfilled Out of Spokane County, 2004

Materials	Tons	Rate ($ per ton)
Ash	84,951	42.27
Bypass MSW	First 10,000	44.25
	25,338	42.22
CDL (Sheetrock and other non-burnables)	6,115	51.89

Northside Landfill MSW Cell

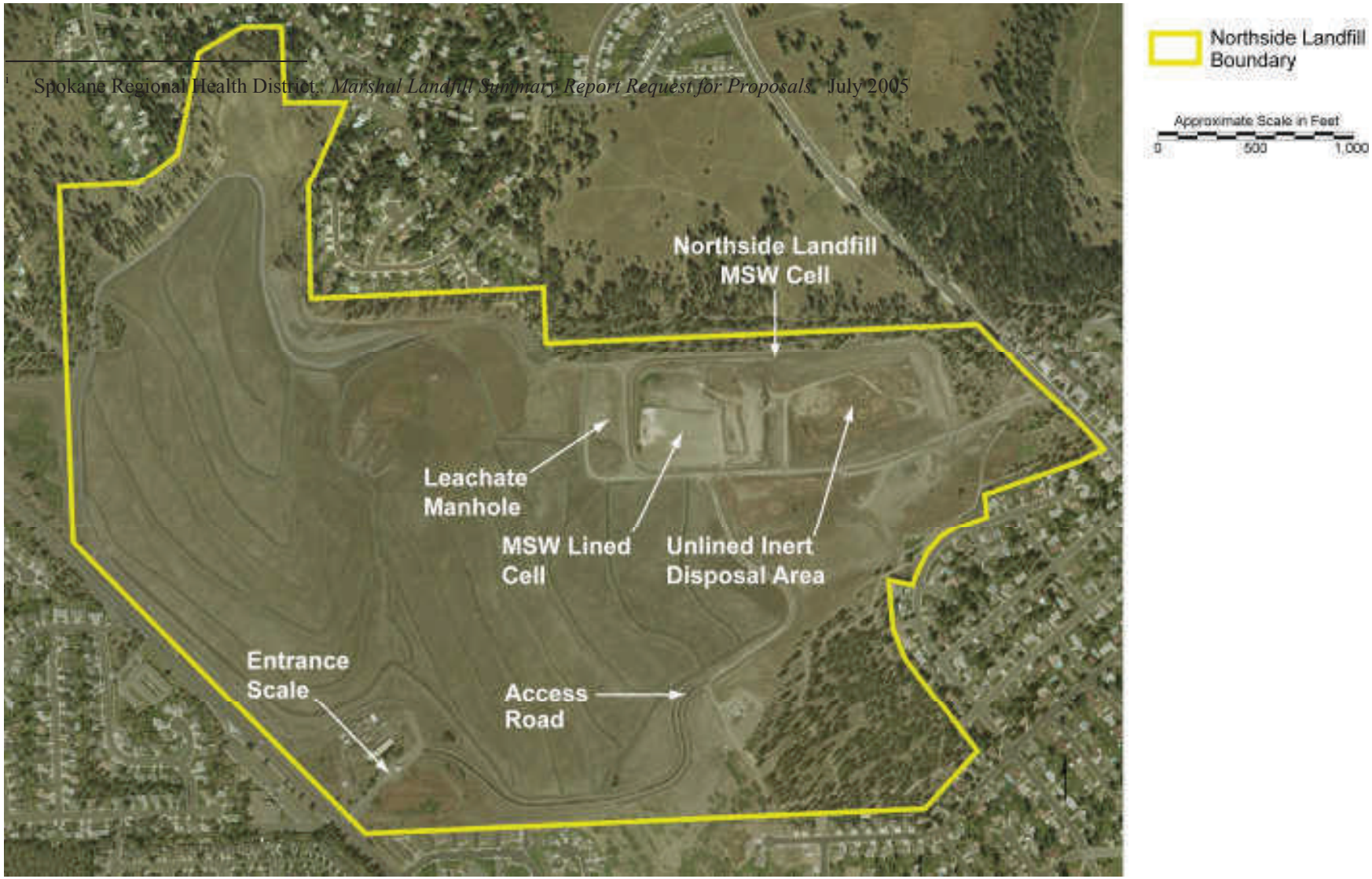
The MSW cell constructed at the NSLF (Exhibit 9-7) is the only operating landfill permitted to receive MSW waste in Spokane County. The NSLF is owned and operated by the City of Spokane. The NSLF MSW cell is designed to be developed in phases. The Phase 1 cell was constructed in 1991 and opened for disposal in January 1992. It was initially developed for disposal of materials that could not be processed at the WTE facility, and also serve as an emergency facility (contingency measure) to dispose of MSW in the event that the WTE plant was inoperable. A demolition waste disposal cell (unlined) was also constructed as part of the Phase 1 MSW cell work. This cell is positioned east of the MSW Cell. The original plan was to locate the two cells side-by-side to allow simultaneous disposal of MSW and demolition waste. The cells were designed to allow for Phase 2 expansion of the lined MSW cell by extending the bottom liner east into the demolition cell footprint. Demolition waste would be disposed in the eastern extent of the demolition cell to allow the MSW liner to extend as far as possible into the demolition cell area.

Currently, only the western lined area is used for waste disposal. The eastern unlined area, currently not permitted, has not been used since Washington State updated the solid waste handling standards in 2003 and the definition of inert waste landfills changed. No material

went into the unlined cell in 2004 and only one load per year was delivered for 2001, 2002, and 2003.

The available volume within the Phase 1 disposal area is approximately 400,000 cubic yards (CY). In the 1991 design for Phase 2 expansion, approximately 600,000 CY of disposal capacity would be added to the current MSW area, and approximately 500,000 CY of disposal capacity would be available in the eastern demolition/inert disposal cell. Since only a limited amount of demolition waste has been placed in the southeast corner area of the demolition cell, the System has concluded that the air space is too valuable to use as demolition cell, and has revised the Phase 2 plans. The revised Phase 2 expansion eliminates the demolition waste disposal area and designs Phase 2 with an additional 1 million CY of lined MSW cell area, bringing the total capacity for MSW disposal to approximately 1,500,000 CY.

EXHIBIT 9-7
Site Layout - Northside Landfill



[i] Spokane Regional Health District. *Marshal Landfill Summary Report Request for Proposals.* July 2005

The MSW cell has a liner, leachate collection system, and leak detection system. The bottom liner consists of 2 feet of soil-bentonite clay with permeability no greater than 1 x 10^{-6} cm/second covered by a 60-mil HDPE geomembrane. The geomembrane is covered by 3 feet of sand to protect the liner and to provide for leachate drainage. To enhance leachate drainage, strip drains are placed on top of the geomembrane to convey leachate to collection pipes located in the center of the cell and along the base of the side slopes. Leachate collector pipes are provided with clean-outs located at the top of the cell sideslopes for periodic maintenance by flushing or jetting. The leachate collectors join at the west end of the MSW cell where leachate is conveyed through a completely enclosed flow measurement element in a leachate manhole and on into an adjacent sanitary sewer for disposal and treatment at the City of Spokane's Riverside Park Water Reclamation Facility.

Perforated leak detection pipes are located beneath the center and perimeter leachate collectors. The leak detection pipes are surrounded by drain gravel and sand and placed above a 60-mil HDPE geomembrane that is joined to the soil-bentonite liner. The leak detection system conveys leakage through three solid pipes to a leak detection manhole at the west end of the MSW cell. The three pipes allow separate monitoring for leaks in the central and west perimeter leachate collector, the north perimeter collector, and the south perimeter collector.

The System is in discussions with the Washington State Department of Ecology and Spokane Regional Health District over concerns of the adequacy of the existing groundwater monitoring program, and its ability to meet the intent of 173-351 WAC. The agencies have requested that the System evaluate the hydrogeologic data and provide additional documentation and hydrogeologic borings to better demonstrate that the existing groundwater monitoring network can comply with the requirements of WAC 173-351 for the MSW Cell. The System is working with CH2M Hill to address these concerns in preparation of the permitting process to begin design of Phase 2 expansion.

The NSLF MSW cell has been in operation since December 1991 and has received wastes since January 1992. Most of the material deposited in the MSW cell has been construction and demolition materials and nonprocessible wastes. A summary of the material weights disposed at the landfill over the last 4 years is provided in Exhibit 9-8.

EXHIBIT 9-8
Northside Landfill MSW Cell Disposal Weights

Year	Gate Weight (tons/year)
2001	11,390
2002	14,965
2003	17,110
2004	13,080

One factor in the variable yearly tonnages is how often the NSLF MSW cell is used as emergency backup when the WTE Facility is down for maintenance and rail haul is not available.

The reliability of rail haul has significantly diminished over the last few years, leaving the NSLF as the only MSW disposal option. The unpredictable rail service has been experienced state-wide, and does not appear to have an immediate solution. This is one reason the NSLF MSW cell is an essential facility, and critical to the disposal needs of Spokane County.

Periodic measurements of the landfill disposal volumes and remaining capacity estimates have been performed by the System. Through 2004, 273,804 CY estimated capacity in the MSW cell has been used, leaving a remaining estimated capacity of 126,196 CY or 63,098 tons (using an average waste density of 1,000 lbs/CY). Assuming waste disposal tonnages remain consistent with previous years (11,000 to 16,000 tons/per year), the NSLF Phase I disposal area has a remaining capacity of 4 to 6 years.

Haulers that use the NSLF MSW cell are charged at the gate the following rates (2004):

- $98.00 per ton for MSW to lined cell
- $15.73 per cubic yard MSW to lined cell plus an administrative fee

Landfill regulations, permitting requirements, and enforcement responsibilities for the Northside MSW cell are summarized in Exhibit 9-9.

EXHIBIT 9-9
Northside Landfill MSW Cell Regulations, Permitting, and Enforcement Responsibilities

Landfill Regulations	Permitting Requirements	Enforcement Responsibility
SRHD Solid Waste Regulations 1.01.06	Operating Permit	SRHD[a]
Washington State Ecology Solid Waste Landfill Standards WAC 173-351	Operating Permit	SRHD[a]

[a] Ecology provides technical review and guidance to Spokane Regional Health District (SRHD) in review of permit applications and submittals. Ecology has the authority to appeal a solid waste permit to the Pollution Control Hearings Board.

9.3 Key Issues

Given current technology and disposal patterns, landfills are and will remain a necessary and important component of waste management. Source reduction and recycling can divert significant portions of the waste stream, but not all components of the waste stream are recyclable. Combustion of the waste stream significantly reduces waste volumes, but still requires disposal of ash and by-pass waste. Therefore, the System will be required to continue to secure out-of-county disposal capacity or create additional capacity in the County.

The System currently uses the Roosevelt Regional Landfill (RRLF) located in Klickitat County in South Central Washington. The landfill is designed to meet all current solid waste landfill regulations, including WAC 173-351. This landfill currently accounts for 81 percent of the State's disposal capacity and in 2003 received some type of solid waste from 34 counties in Washington.[i]

Many counties with landfills send waste to RRLF in order to reserve local landfill capacity for their citizen needs.[ii] RRLF has an estimated remaining capacity of over 170,000,000 tons, with a projected closure date of 2090.[iii]

9.4 Alternatives

The following alternatives were presented during the planning process for consideration:

1. Investigate alternative transportation modes for waste transferred to an out-of-County landfill.
2. Expand the Northside Landfill MSW cell for contingency/bypass use.
3. Examine post-closure care funding for County- and City of Spokane-owned landfills.
4. Monitor developments in alternative processing technologies for municipal solid waste.
5. Assess development of an in-county MSW landfill for use after 2011, either public or privately owned and operated.
6. Assess long haul of municipal solid waste out of the County.
7. Assess using both the WTE Facility and out-of-County landfill for disposal of MSW.
8. Build a landfill in a remote area (in or out of the county).
9. Separate biomass from solid waste for methane gas extraction.
10. Identify needs and costs to remediate closed landfills in the County (including private landfills).

Further information is provided below for each alternative.

1. Investigate alternative transportation modes for waste transferred to an out-of-County landfill.

Rail haul currently is used to ship ash from the WTE facility to the Roosevelt Regional landfill. Ash is top-loaded into 20-cubic-yard intermodal containers. Each container holds approximately 30 tons of ash. Approximately 8 to 15 containers per day are hauled by truck to the Burlington Northern Yardley Intermodal Hub and are loaded onto the train. Empty containers are returned by the same method.[iv]

The System currently experiences problems with interrupted deliveries of containers—both for pick-up of full containers and delivery of empty containers. In general, these problems are due to increased use of rail lines and unavailability of trains to handle increased freight demands. There are four regional landfills serving Washington that are accessible by rail. The total tonnage shipped to these landfills is expected to increase in the future as more local landfills close and counties opt to use these regional facilities. This will add further congestion to the rail lines serving these facilities.

The U.S. Department of Transportation estimates that general rail freight tonnage will increase by more than 50 percent by 2020.

Rail capacity has already become a problem in some areas, especially at intermodal facilities that represent the fastest growing segment of rail traffic.[v] As diesel prices continue to rise, use of rail for general freight becomes more economical, which likely will further increase rail congestion. It is unlikely that additional rail lines will be constructed in the near term.

The Washington State Transportation Commission is undertaking a statewide study of strategic freight and passenger rail system needs. The study will review current and projected capacity needs and assess the public benefits of state involvement in rail. A final report is expected to be issued in December 2006.[vi]

The System could evaluate use of other transportation modes, primarily road hauling, for transporting bypass waste and ash for final landfill disposal. A primary difference between road haul and rail haul is the fact that the payload on a rail car is up to 150,000 pounds or 75 tons, while the payload on a tractor trailer is generally less than 54,000 or 22 tons. This means that three truckloads are required to equal the capacity of one rail car. Use of trucks versus rail will also result in additional fuel use, which could increase costs and also emissions of greenhouse gases.

Potential benefits to road haul include:

- Highway usage is also expected to increase, but it is likely that highway capacity will be increased in the future to keep pace with demand.
- Each train contains many containers of waste and the late arrival of a single train may delay operations at the landfill or transfer station. With trucking, each truckload may develop a problem or be late, but it is less likely that a single problem would cause every truck to be delayed because trucks can easily be rerouted around a problem and more tractors/drivers can be brought in on relatively short notice.

2. Expand the Northside Landfill MSW cell for contingency/bypass use.

The System currently uses the NSLF MSW cell for limited amounts of waste. As discussed earlier in this section, the NSLF MSW cell has an estimated remaining capacity of 4 to 6 years. In order to meet the goal of maintaining in-county landfilling capacity to ensure backup disposal, the System should consider expansion of the NSLF.

- The available airspace in the existing lined footprint of the MSW Cell (Phase 1) is approximately 400,000 CY. With the designed (1991) Phase 2 expansion, the MSW Cell would grow an additional 600,000 CY; with approximately 500,000 CY of demolition waste disposal capacity in the eastern extent of the demolition cell (total airspace of approximately 1.5 million CY). To date, only a limited amount of demolition waste has been placed in the southeast corner area of the demolition cell. The current plan is to eliminate the demolition waste disposal area and re-design Phase 2 with an additional 1 million CY of lined MSW cell area.

3. Examine additional post-closure care funding for County- and City-owned landfills.

Once a landfill has stopped accepting waste, federal and state regulations require that a final cover be put on the landfill and the landfill owner is responsible for post-closure care.

During post-closure care, the landfill owner is required to operate and maintain the systems designed to control releases to the environment including leachate collection and treatment systems, landfill gas collection systems, surface water controls, groundwater monitoring systems, and the final cover. Post-closure care must continue for a minimum of 20 years. Financial assurance also is required when corrective action is necessary to clean up releases to groundwater.

Closure and post-closure costs can be significant. Federal and state laws generally require landfill owners to set aside funds during the active life of the landfill to cover closure and post-closure costs. Typically, a portion of the tipping fees collected while the facility is in operation is put into a reserve fund for closure and post-closure care.

The County currently must fund the post-closure activities for three landfills. The City of Spokane has two landfills that it must fund for post-closure activities. The System could investigate the possibility of assisting the County and City of Spokane with funding for these activities once the System's current bonds are retired.

4. Monitor and assess developments in alternative processing technologies for municipal solid waste, and promote those that are viable.

Several technologies, traditionally used for biosolids management, are being adapted for managing municipal solid waste, primarily for organics processing. While their use is not currently widespread for municipal solid waste, they show promise for being commercially developed.

Some of these methods include:

- Anaerobic digestion: This process breaks down organic material through the action of microorganisms. The process occurs in the absence of oxygen in an airtight vessel, called a reactor or digester. Several different digester technologies have been developed. Most common are cylindrical vessels with a turbine to mix the material. Following the anaerobic process, the solids may be cured in standard composting type systems. The biogas generated from this process can be used as an energy source. This system is commonly used for sewage sludge, but treatment of municipal solid waste is a relatively new application of the technology.
- Biorefining: This process breaks down organic material through chemical or physical reactions such as hydrolysis by acids, enzymes, or steam rather than by microorganisms. Biorefining typically is used with agricultural wastes to produce ethanol; however, processes are emerging for producing ethanol from municipal solid waste.
- Thermal transformation: Waste is heated in a controlled oxygen environment to drive off reduced or only partly oxidized gases. A variety of different technologies, all of which drive off biogas from the waste, fall within this group, including:
  - Pyrolysis, which heats the waste in the absence of oxygen.
  - Gasification, which heats the waste and reacts it with a controlled input of oxygen.
  - Plasma arc, which runs high-voltage electricity through the waste, in the absence of oxygen.

The products of thermal transformation are a biogas fuel, and can include energy and a compost product.

At present, these technologies are not fully commercialized in the United States for municipal solid waste; however, the System could track ongoing research and development of these technologies for possible implementation at some point in the future if the technologies become more feasible.

Bioreactors are a new technology currently being tested around the country for waste disposal. The primary function of a bioreactor is to accelerate the degradation of municipal solid waste. The increase in waste degradation and stabilization is accomplished through the addition of liquid and, in some cases, air to enhance microbial processes. Bioreactors are a new approach to landfill design and operation that differ from the traditional "dry tomb" municipal landfill approach.

There are three different general types of bioreactor landfill configurations:

- Aerobic: In an aerobic bioreactor landfill, leachate is removed from the bottom layer, piped to liquids storage tanks, and re-circulated into the landfill in a controlled manner. Air is injected into the waste mass, using vertical or horizontal wells, to promote aerobic activity and accelerate waste stabilization.
- Anaerobic: In an anaerobic bioreactor landfill, moisture is added to the waste mass in the form of recirculated leachate and other sources to obtain optimal moisture levels. Biodegradation occurs in the absence of oxygen (anaerobically) and produces landfill gas. Landfill gas, primarily methane, can be captured to minimize greenhouse gas emissions and for energy projects.
- Hybrid (Aerobic-Anaerobic): The hybrid bioreactor landfill accelerates waste degradation by employing a sequential aerobic-anaerobic treatment to rapidly degrade organics in the upper sections of the landfill and collect gas from lower sections. Operation as a hybrid results in the earlier onset of methanogenesis compared to aerobic landfills.

Potential advantages of bioreactors include:

- Decomposition and biological stabilization in years versus decades in "dry tombs."
- Lower waste toxicity and mobility due to both aerobic and anaerobic conditions.
- A 15 to 30 percent gain in landfill space due to an increase in density of waste mass. This recovered airspace can offer landfill operators the opportunity to extend the operating life of the landfill.
- Significant increased landfill gas generation that, when captured, can be used for energy use onsite or sold.
- Reduced post-closure care.

- Research has shown that municipal solid waste can be rapidly degraded and made less hazardous (due to degradation of organics and the sequestration of inorganics) by enhancing and controlling the moisture within the landfill under aerobic and/or anaerobic conditions. Leachate quality in a bioreactor rapidly improves, which leads to reduced leachate disposal costs.

Currently, the routine use of bioreactors is limited by current federal and state regulations, which generally are written to keep liquids out of landfills. Experimental and demonstration projects can be approved under the federal Research Development and Demonstration (RD&D) provisions of 40 CFR 258.4. This regulation allows states that have adopted to rule to issue research permits for 3 years (renewable four times) to landfills that want to demonstrate the technology.

While still experimental, bioreactor technology may show promise for future landfill designs. The System may wish to monitor developments and incorporate these features if a new landfill is planned in the future.

5. Assess development of an in-County MSW landfill for use after 2011, either public or privately owned and operated.

The System could elect to site, permit, and develop a new landfill in Spokane County that meets the regulatory requirements established by the Washington Department of Ecology. To be a viable disposal alternative, the landfill should be designed and permitted to accept the daily disposal tonnage needed by the System and should provide a minimum of 20 years of capacity. Capital costs that need to be considered include land acquisition, environmental studies, engineering design and permitting costs, new cell construction costs, closure construction costs, and post-closure maintenance costs. Landfill operating costs also need to be evaluated for waste placement, compaction, cover, and environmental monitoring and control measures.

Options for this alternative include public ownership and operation, private ownership and operation, or a combination public/private ownership and operation. Groundwater recharge issues and topography conducive to efficient landfill operations limit the availability of land within Spokane County for viable MSW landfill consideration.

6. Assess long haul of municipal solid waste out of the County.

Solid waste landfills located outside of Spokane County, including those located outside of Washington State, provide a potentially viable option for future disposal of municipal solid waste. Potential landfills should meet the following requirements:

- Must be in compliance with applicable landfill regulatory requirements.
- Must be permitted to accept the daily tonnage required by the System.
- Must have significant remaining disposal capacity to address long-term disposal needs.

Evaluation of long hauling solid waste out of the county must take into account transfer costs, transportation costs and availability, and disposal tipping fees:

- Because the System currently operates two transfer stations, transfer costs should not change significantly.

- Transportation costs are likely to be significant and will correlate with the distance between the point of transfer and the disposal location. With a large portion of costs attributed to driver labor costs and fuel costs, overall transportation costs will increase the farther the selected landfill is located from Spokane County.
- Tipping fees charged by regional landfills typically are based on what the market will bear and is driven by supply and demand. The tip fee would be based on contractual arrangements.
- Reliability of rail transport in delivering the waste to the regional facility.

To be an economically viable option, the combined costs for long haul out of the County should be less than the costs for current disposal methods. The System could assess these long-haul costs to determine if long haul of municipal solid waste is feasible.

7. Assess using both the WTE Facility and out-of-County landfill for disposal of MSW.

The WTE Facility processed more than 279,000 tons of municipal solid waste in 2004. The facility has a guaranteed available capacity of 248,200 tons per year. As Spokane County continues to grow, waste generation will increase to a point where the WTE Facility may no longer be able to process all of Spokane County's wastes. The System could assess using an out-of-county landfill to dispose of excess municipal solid waste as an alternative to adding an additional boiler to the WTE Facility.

8. Build a landfill in a remote area (in or out of the County).

This alternative is discussed above under alternatives 5 and 6.

9. Separate biomass from solid waste for methane gas extraction.

This alternative is discussed above under alternative 4.

10. Identify needs and costs to remediate closed landfills in the County (including private landfills).

9.5 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the landfill alternatives discussed above lead this Plan to recommend implementing a progressive but monitored approach to landfill operations and planning. This approach will provide for continued responsible maintenance and operation of landfills, while maintaining a sustainable balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for the assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

The Waste to Energy facility cannot handle all of the waste generated within Spokane County. A large component of the waste stream is non-burnable waste that does not lend itself to mass burn technology. Additionally, the process itself results in residual ash that currently is transported for disposal in the Roosevelt Regional Landfill in Klickitat County, Washington.

Therefore, until other technologies and/or waste disposal strategies become more available and affordable, landfill disposal will remain an element of the region's overall waste management strategy.

The Plan recommends assessing multiple transportation modes for out-of-county landfill disposal of waste in order to reduce the vulnerability and expense associated with any single transport mode. Contracts should be competitively based on cost, reliability, and responsiveness with respect to meeting the needs of Spokane County.

The Plan also recognizes the potential benefits of in-county landfill disposal, in part to provide for contingency disposal capacity when bypass solid waste cannot be sent to an out of county landfill, as well as in the event of civil or natural disasters that could result in a large surge of solid waste requiring immediate disposal. Any additional landfills should be sited within Spokane County with the greatest amount of scrutiny and consideration for the environment, in particular, the regional aquifer.

The Plan recommends that all post-closure costs for landfills that exist within Spokane County, and for which the public has a financial liability, be fully considered for inclusion within the overall regional waste management system. Taking a long-term approach in addressing the financial obligations presented by past and present landfill operations will be in the best interest of Spokane County, both fiscally and environmentally.

The Plan supports the continued development of alternative waste disposal technologies. The Plan is very supportive of monitoring and assessing gas extraction and energy recovery technologies that can further reduce the potential environmental impacts of landfills while adding to the overall sustainability of the region.

1. Investigate alternative transportation modes for waste transferred to an out-of-County landfill.
2. Expand the Northside Landfill MSW cell for contingency/bypass use.
3. Examine post-closure care funding for County- and City of Spokane-owned landfills.
4. Monitor developments in alternative processing technologies for municipal solid waste.
5. Assess development of an in-County MSW landfill for use after 2011, either public or privately owned and operated.
6. Assess long haul of municipal solid waste out of the County.
7. Assess using both the WTE Facility and out-of-County landfill for disposal of MSW.
10. Identify needs and costs to remediate closed landfills in the County (including private landfills).

[i] Washington State Department of Ecology, *Solid Waste in Washington State—Thirteenth Annual Status Report*.

[ii] Ibid.

[iii] Washington State Department of Ecology, Solid Waste Facilities Database, 2004.

[iv] Spokane Regional Solid Waste System. Information available at http://www.solidwaste.org.

[v] American Society of Civil Engineers, Infrastructure Report Card 2005. Available at http://www.asce.org/reportcard/2005.

[vi] Washington State Transportation Commission. Information available at http://www.wstc.wa.gov/Rail.

SECTION 10

Miscellaneous Wastes

10.1 Introduction

This section includes discussions of various waste types generated in Spokane County 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: agricultural waste; asbestos; ash from the WTE Facility; biomedical waste; biosolids and septic tank waste; contaminated soils; electronics; foundry waste; paper sludge; tires; and universal waste. Each strategy for the management and handling of these miscellaneous waste types is designed to be consistent with policies and programs for other Spokane County waste types, as well as with the general solid waste management goals expressed in this Plan update. The analysis of each miscellaneous waste type includes a description of existing practices, key issues, alternative management approaches, and recommendations.

Management goals for these waste types are similar to those for CDL and inert materials:

- Satisfy state priorities for waste management, and ensure adequate disposal capacity by reducing disposal through waste reduction or reuse programs as allowed by regulation.
- Maintain proper waste monitoring and regulatory procedures, which may include tracking the types and quantities of waste materials disposed and recycled.
- Provide for efficient collection and transfer of waste materials, including opportunities for competition to reduce costs of collection, transfer, and processing; and promote waste recycling and associated businesses as allowed by regulation.
- Continue public outreach and education efforts regarding waste reuse, reduction, and disposal.

10.1.1 Special Waste

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. Asbestos and foundry sand are special wastes that are permitted at the Limited Purpose Landfill Graham Road Recycling and Disposal Facility (Graham Road RDF).

In Spokane County, any generator wishing to manage hazardous wastes as special wastes should consult with the Washington State Department of Ecology (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 in Spokane County unless they are household hazardous waste or from small waste generators, and in those cases, the waste is collected at System Household Hazardous Waste (HHW) facilities located at the transfer stations and the Waste to Energy facility.

10.2 Agricultural Waste

Agricultural wastes are byproducts of farming and ranching: crop processing wastes, manure, and animal carcasses.

10.2.1 Existing Conditions

Presently, the Spokane Regional Health District (SRHD) regulates the handling and disposal of agricultural waste. Dead animals weighing 15 pounds or less may be disposed within the regular solid waste stream, provided they are bagged so as to be completely enclosed. Larger animals must be taken to a rendering plant, pet cemetery, or disposed at an incinerator or landfill with site operator approval. Owners may bury dead animals on their property subject to SRHD rules and regulations.

According to the WTE Facility operations plan, the operator will not accept large animals. Large animal owners are referred to Baker Commodities (a rendering plant) or the Northside Landfill (NSLF).

10.2.2 Key Issues

According to the 2002 Census of Agriculture, the number of farms in Spokane County is decreasing; down from 2,340 in 1997 to 2,225 farms in 2002 totaling 643,377 acres.[i] Livestock inventory also has mostly decreased since 1997:

- Cattle: In 2002, the inventory was 25,821, down from 28,845 in 1997.
- Hogs and pigs: In 2002, there were 956 hogs and pigs in the county, which is down from 1,953 in 1997.
- Poultry: In 2002, there were 172 poultry farms, up from 151 in 1997.

Agricultural wastes result from farming and ranching activities, and consist of primarily crop residue and manure. Of the total farm acreage, approximately 315,000 acres are harvested cropland, 1,200 acres are used for vegetables, and slightly less than 800 acres are used for orchards.

A rural waste characterization study conducted for the Washington State Department of Ecology attempted to quantify and characterize the types of waste reused, recycled, or disposed for four agricultural groups (field crops, orchards, vegetables, and livestock).[ii] The study found that less than 1 percent 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.

The United State Department of Agriculture (USDA), Washington State Department of Agriculture, Ecology, and Spokane County Health District have policies in place to respond to the management of animal carcasses that have been diagnosed or suspected of being carriers of an infectious disease (for example, Mad Cow Disease, Avian Bird Flu).

10.2.3 Alternatives

The System should continue development of emergency response plans regarding agricultural waste specific to available resources and operations and in coordination with local, state, and federal agencies. Existing federal, state, and other agency policies and procedures for the management of animal carcasses that have been diagnosed or suspected of being carriers of an infectious disease have been developed. Large-scale incident response mechanisms would be coordinated with federal or state authorities. Policies and procedures would depend on the type of disease, its presentation, and consensus among agencies and facility operators to determine adequate final disposition at any given incident.

10.3 Asbestos Waste

Airborne asbestos can present a considerable risk to human health and is therefore considered a hazardous air pollutant. Asbestos wastes are most commonly generated when older buildings are remodeled or demolished.

10.3.1 Existing Conditions

10.3.1.1 Regulations

Asbestos waste is any waste that contains more than one percent 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. On February 5, 1998, the Spokane County Air Pollution Control Authority's (SCAPCA) Board of Directors (Board) enacted Resolution #98-01, which recognized asbestos as a serious health hazard, and implemented a comprehensive asbestos program, structuring a fee schedule to ensure full program cost recovery. As a result, Article IX and Article X, Section 10.09, were adopted. The following summarizes the current asbestos rules that SCAPCA enforces[iii]:

- Regardless of the age of the building, if you plan to alter a structure or component (e.g., equipment, pipe, structural member, etc.) in any way, or wreck, raze, level, dismantle, or burn a structure, you are subject to SCAPCA's asbestos regulations. This includes performing under the Asbestos Hazard Emergency Response Act (AHERA).

- Asbestos surveys and submitting Notices of Intent (NOIs) for all asbestos projects and demolitions.
- Under Washington State Department of Labor & Industries regulations, a "good faith" inspection of any renovation or demolition site must be completed prior to any demolition or renovation activity.
- When asbestos-containing material (ACM) is stripped, removed, or disturbed, the work must be done by a person certified by the Washington State Department of Labor & Industries.
- 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.
- Owners or operators of waste disposal sites are required to maintain waste shipment records and must immediately report improperly enclosed or unsealed waste to SCAPCA. Owners or operators are also required to maintain records on the location, depth, area, and volume of ACM within the disposal site on a map or diagram.

10.3.1.2 Quantities

In Spokane County, the Graham Road RDF, a Limited Purpose landfill owned and operated by Waste Management, Inc., is the only landfill that accepts asbestos. The Regional Disposal Company accepts and hauls some asbestos to its Roosevelt Landfill in Klickitat County. System facilities do not accept asbestos, and generators must deal directly with permitted disposal facilities. Asbestos tonnages sent to the Graham Road site from 2000 to 2004 is shown in Exhibit 10-1.

EXHIBIT 10-1
Asbestos Disposal

Facility	2000	2001	2002	2003	2004
Graham Road RDF	1,607.55	1,214.98	1,277.85	1,233.66	1,438.88

Note: All numbers are listed in tons.

10.3.2 Key Issues

Much of the asbestos waste generated results from demolition and remodeling projects. While private contractors are generally aware of asbestos handling requirements, homeowners doing their own project work may not recognize asbestos-containing materials. Current SCAPCA requirements allow homeowners to perform their own asbestos surveys if they are doing the renovation/remodeling work themselves. Some homeowners may unknowingly place asbestos-containing materials from small remodeling projects in with their trash.

10.3.3 Alternatives

There may be a need to educate homeowners about proper identification of asbestos-containing materials and proper handling and disposal methods. Information is available on the SCAPCA website www.scapca.org. The System should continue to work with SCAPCA to develop more comprehensive information and outreach strategies.

10.4 Ash from Waste-to-Energy Facility

The ash generated by the WTE Facility is generally categorized as follows: bottom ash, which is residual material from the combustion chamber, and fly ash, which is collected from the air pollution control equipment. Both types of ash are normally combined within the WTE Facility prior to transport for processing and/or disposal. This section describes current practices for disposing of the ash, and opportunities for recovery and processing of the ash for reuse.

Ash from the facility is regulated as special incinerator ash subject to the requirements of Chapter 173-306 WAC, Special Incinerator Ash Management Standards, updated in 2000. However, the facility treats ash onsite with the WES-pHix™ process, and testing of the treated ash indicates that the ash should not be classified as special incinerator ash. The ash consistently passes TCLP, pH, and bioassay tests and therefore is neither a dangerous waste nor a special incinerator ash.

For further information, see discussion in Section 8.1.3.4.

10.4.1 Existing Conditions

WTE ash is a byproduct of the mass-burn technology used at the WTE Facility. Generally, the ash remaining after incineration is about 10 percent of the incoming waste stream by volume. After screening and removing the ferrous metals in the ash, it weighs about 30 percent as much as the incoming waste stream. In 2004, 85,562 tons of ash was generated.[iv] The ash is loaded into containers and sent by rail under contract with the Rabanco Disposal Company (RDC) to the Roosevelt Regional Landfill (RRLF). The location of the RRLF is shown in Exhibit 9-5

The System has a 10-year contract to 2011 with RDC for disposal of ash with one additional 5-year term (see Section 9 and Exhibit 9-6 for 2004 contract prices paid to RDC for transportation and disposal). Total ash tonnages generated by the WTE Facility are shown in Exhibit 10-2.

EXHIBIT 10-2
Total Ash Generated[v]

Facility	2000	2001	2002	2003	2004
Waste-to-Energy Facility	91,455	71,242	77,571	76,871	85,562

Note: All numbers are listed in tons.

10.4.2 Key Issues

Ash currently is landfilled, but there is the possibility that ash could be used in the future as an aggregate in construction materials such as:

- Unstabilized base or subbase material: Ash has been used alone or in combination with conventional aggregate as the subbase material for roads, parking lots, and other pavements.
- Bituminous concrete (asphalt): Ash can be used as aggregate material in bituminous concrete that will serve as a base course, binder course, or as surface wear material on roads.
- Concrete block: Ash can be used as an aggregate in the production of concrete blocks.

The use of ash as an aggregate depends on it suitability to substitute for natural aggregate (e.g., sand, crushed stone, gravel).

10.4.3 Alternatives

The System should continue to monitor research and investigate alternatives for ash utilization. The handling of ash residue must be protective of public, worker, and environmental health and safety. Substantive changes to the handling of the ash residue shall be accompanied by an early and extensive public process consistent with WDOE permit requirements. Any ash recycling program must be preceded by extensive research into recycled ash, with documentation that no significant harmful effects exist from the recycled ash products before a project is undertaken. Any notification of permit changes shall be copied to the governing bodies over the SRSWS.

10.5 Biomedical Waste

This section discusses existing regulations, treatment and disposal practices, and programmatic planning needs facing infectious waste management in Spokane County.

10.5.1 Existing Conditions

10.5.1.1 Regulations

Definitions

Medical treatment and research facilities generate a wide range of special wastes that require specific 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 Update, biomedical waste means, and is limited to the following types of waste in accordance with RCW 70.95K.010 and SRHD's Rules and Regulations for Solid Waste Handling Standards under 1.06.100, Definitions:

(a) 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.

(b) Biosafety Level 4 disease waste – waste contaminated with blood, excretions, exudates, or secretions from humans or animals who are isolated to protect others from highly communicable infectious diseases that are identified as pathogenic organisms assigned to biosafety Level 4 by the centers of disease control, national institute of health, biosafety in microbiological and biomedical laboratories, current edition.

(c) 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.

(d) Human blood and blood products – discarded waste human blood and blood components, and materials containing free-flowing blood and blood products.

(e) 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.

(f) Sharps waste – hypodermic needles, syringes with needles attached, IV tubing with needles attached, scalpel blades, and lancets that have been removed from the original sterile package.

Regulatory Framework

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

- U.S. Environmental Protection Agency
- Washington Department of Health
- Washington Department of Transportation
- Washington Utilities and Transportation Commission (WUTC)
- Spokane Regional Heath District
- Spokane Regional Clean Air Agency
- City of Spokane Solid Waste Management Department
- 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 offsite treatment only)
- Gas vapor and irradiation sterilization

Other regulations concerning infectious wastes are contained in the SRHD's Rules and Regulations for Solid Waste Handling (1.06.000).

10.5.1.2 Quantities

Potentially infectious waste from facilities in Spokane County is handled and/or treated by one of the following:

- **WTE Facility.** Potentially infectious waste is mixed into the MSW stream by residents and small generators and burned with all MSW in the WTE Facility.
- **Onsite Treatment.** Some facilities have their own infectious waste treatment units that render infectious waste innocuous and then dispose of it mixed in with the facility's solid waste. Because there are no regulations requiring sites to record quantities of infectious waste treated on site, no tonnage estimates are available for this portion of the infectious waste stream.
- **Permitted Haulers.** The City of Spokane currently grants a permit to one hauler, Stericycle of Washington, Inc., to collect medical waste and deliver it to a treatment facility. Collected tonnages from 2000 through 2004 have remained relatively constant at 480 tons per year. Some materials are treated prior to disposal (Stericycle, 2006).
- **System HHW Facilities.** Sharps are accepted at the Northside Landfill from commercial generators such as dental offices. Residents may take sharps to System Household Hazardous Waste facilities in bleach jugs or other puncture resistant containers (not drinking bottles).
- **Spokane Regional Health District.** The SRHD gives information to home health care providers on the proper handling of sharps and outdated pharmaceuticals.

10.5.2 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. In Spokane County where drinking water

comes from a sole-source aquifer, this practice could affect drinking water quality. 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. For the most part, large scale human disease disaster planning is determined through the County Sheriff Department of Emergency Management Emergency Support Function #8.

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 Spokane Regional 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.

10.5.3 Alternatives

Two alternatives to address residential biomedical waste are presented:

1. **Continue to coordinate with SRDH in the distribution of educational materials for correct management of medical waste generated by residents.**

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.

2. **Continue to plan and coordinate with the appropriate federal, state, and local agencies regarding emergency response plans involving human or animal diseases.**

10.6 Biosolids and Septage

10.6.1 Existing Conditions

Biosolids or "sewage sludge" is solid, semisolid, or liquid residue generated during the treatment of domestic and industrial sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge (WAC-173-351-100). Biosolids historically were considered solid waste. However, if biosolids are beneficially reused, biosolids are no longer classified as a solid waste and are regulated under WAC 173-308 and the federal biosolids rule, 40 CFR Part 503.

Currently, biosolids are categorized as Class A, Class B or EQ (Exceptional Quality). Class A biosolids are essentially free of pathogens prior to land application. Class B biosolids may have low levels of pathogens that rapidly die off when applied to soils, essentially becoming pathogen-free within a short period following land application if the requirements stated in

40 CFR Part 503 are followed (California Integrated Waste Management Board, 2006). Exceptional Quality biosolids is the name given to treated residuals that contain low levels of metals and do not attract vectors, and can be applied to land with fewer reporting and management requirements. Land application of biosolids is regulated through the Dept. of Ecology, under chapter WAC 173-308.

The sources of biosolids in Spokane County are from facilities shown in Exhibit 10-3. All of the biosolids generated from these facilities are transported to the RPWRF and subsequently treated and disposed by Riverside Park Water Reclamation Facility (RPWRF), except for Cheney and Liberty Lake, who have their own biosolids disposal program. Exhibit 10-3 shows the jurisdictions generating biosolids in Spokane County, their populations, and their wastewater disposal systems.

EXHIBIT 10-3
Community Wastewater Disposal Systems[vi]

Community	2004 Population	Wastewater Disposal Systems
Unincorporated Spokane County	120,726	Septic tanks or sewer to RPWRF
Airway Heights	4,590	Septic tanks or sewer to RPWRF
Cheney	9,855	Secondary treatment plant with wetland and composting of biosolids
Deer Park	3,045	Lagoon
Liberty Lake	4,950	Liberty Lake Wastewater Treatment Facility
Medical Lake	4,120	Lagoon
Millwood	1,645	Sewer to RPWRF
Spokane	197,400	RPWRF
Spokane Valley	83,950	Septic tanks or sewer to RPWRF
Fairfield	576	Lagoon
Latah	204	Septic tanks
Rockford	511	Lagoon
Spangle	297	Lagoon
Waverly	131	Septic tanks

RPWRF - Riverside Park Waste Reclamation Facility.
POTW - Publicly Owned Treatment Works.

10.6.1.1 Unincorporated Spokane County

Community Wastewater Disposal Facilities

Spokane County operates the wastewater disposal facilities shown in Exhibit 10-4. Two extended aeration treatment plants receive 116,000 gallons per day of raw sewage. Wet biosolids accumulate in an aerated holding tank at each facility, and periodically the County removes the biosolids from the tanks and hauls the material to the RPWRF. Both treatment plants operate in compliance with the Department of Ecology Statewide General Permit for Biosolids Management (Chapter 173-308 WAC). There is one County-operated community septic tank system, which is pumped every 2 years, and the material is hauled to the RPWRF. There are no County-operated drying beds, nor any land application program operated by

Spokane County, because these final treatment processes are managed by the RPWRF. In 2005, Spokane County hauled the equivalent of 4.72 dry tons of biosolids to the City of Spokane WWTP.

EXHIBIT 10-4
Spokane County Wastewater Facilities

Facility	Type	De-commissioning Schedule
Heritage Estates	Community Septic Tank	Unplanned
Peone Pines	Treatment Plant	Unplanned - depends on expansion of Urban Growth Areas
Hangman Valley	Treatment Plant	Unplanned - last to go

Spokane County proposes to construct a new 8 million gallon per day (mgd) regional wastewater treatment plant in the Spokane Valley, with operations planned to commence by the end of year 2011. This capacity will supplement the 10 mgd that will continue to flow to the RPWRF. This new regional plant will initially produce Class B biosolids, which will be land-applied in a program managed very similarly to the City of Spokane's RPWRF biosolids management program. However, the plant will be planned and constructed in a manner that makes it suitable to produce Class A biosolids in the future, with composting and beneficial reuse of the product.

Spokane County plans to construct a septage receiving facility at the new regional WWTP for treatment and disposal of septage from commercial haulers.[vii]

Biosolids are generated from the community wastewater disposal systems within the county. Exhibit 10-3 lists the county communities, population, and types of wastewater disposal systems that are in use.

The biosolids that accumulate in the region's community wastewater lagoon systems are cleaned out approximately every 8 to 10 years. The communities that rely on individual septic tanks for onsite wastewater disposal generate septage that needs disposal every 2 to 5 years (SRHD). Septage disposal in Spokane County is discussed below.

Septage Disposal

Septage is defined as semisolids consisting of settled sewage solids combined with varying amounts of water and dissolved materials generated from a septic tank system (SRHD's Solid Waste Management and Handling, Section 1.06.100, Definitions). Septage is generated from onsite septic tank disposal systems, either from individual residential systems or larger community systems. Approximately 9 million gallons of septage are disposed in Spokane County annually.[viii]

Septage from the County-operated community septic tank systems are cleaned out approximately every 2 years and hauled to the RPWRF for disposal. Septage received by the RPWRF from the County wastewater disposal facilities is treated and the solids eventually become part of the biosolids generated by this facility.

Septage from individual onsite septic tank systems throughout the county is pumped out occasionally by system owners. There are approximately 31 septic tank pumpers in Spokane County which dispose at RPWRF.[ix] All septic tank pumpers require licensure by SRHD. Septage generated in Spokane County is disposed at the following facilities:

- City of Spokane Riverside Park Water Reclamation Facility.
- Cheney Wastewater Treatment Facility.
- Land application site operated by Walker Septic (private facility that manages only its own septage).
- Groves Farms, Naples, Idaho.

Most septage is disposed of at the RPWRF. A small amount is disposed at the Groves Farms site, in Naples, Idaho, when Idaho pumpers provide services in Spokane County.

10.6.1.2 Municipalities Generating Biosolids

City of Cheney

The Cheney wastewater treatment facility (WWTF) has maintains an innovative and environmentally responsive approach for removing and reusing biosolids. After the microorganisms have consumed the most harmful of pollutants from the sludge, this material is stored and then dewatered. The dewatered sludge is conveyed to the compost building where bulking agents such as yard waste and wood chips are mixed with the sludge to create biosolid compost. The biosolid compost is sold to the public under the product name "Eco Green" and is suitable for use as a soil amendment on ornamental plants and food crops alike. The process is explained below.

The biologically treated wastewater consisting of solids or sludge and liquid material flows from the aeration basins to the plant's three clarifiers. The sludge settles to the bottom of the clarifiers and the liquid effluent flows to the chlorine contact basins for disinfection. The majority of the microbial laden sludge is returned from the clarifiers back to the conditioning tanks to interact with the influent waste stream in the biological treatment process. The balance of the sludge is wasted, which means it will be removed from the treatment system and converted in biosolid compost. The wasted sludge is pumped to the sludge holding tank, then pumped into the sludge dewatering building where polymers are added to help congeal the sludge. The sludge is then run through a belt filter press to squeeze out as much of the moisture in the sludge as possible. The sludge holding tank has the capacity to store 75,000 gallons of sludge, but the significant increase in the volume of solids at the plant has necessitated much more frequent dewatering in order to avoid overflowing the capacity of the sludge holding tank.

The compost building where the material is cured stores up to eight windrows containing 420 yards of biosolid compost material (sludge, yard waste, wood chips, and finished compost). The windrows are stored eight weeks inside the compost building. During that timeframe the biological action in the windrows heats the material, which kills harmful bacteria (pathogens). Blowers underneath the windrows help to dry the material and provide oxygen for the biological action as well as controlling the heat that builds up in the windrows. After the first eight weeks have elapsed, the compost is stored outside for another eight weeks and then after passing all testing parameters (heavy metals and fecal coliform pathogen indicator

organisms) the material qualifies as Class A compost biosolids and is sold to the public under the product name "EcoGreen."[x]

Liberty Lake Sewer District

The Liberty Lake Sewer and Water District operates a 1.0 MGD permitted wastewater treatment facility located at 1926 N. Harvard Road in Liberty Lake. In 2006, they completed a major upgrade to the existing facility. Constructed in this project were anaerobic, anoxic and aeration basins to provide biological treatment, phosphorus removal, and nitrification/ denitrification for 2 MGD. Improvements to solids handling include conversion of the existing aerobic digesters to waste activated sludge holding tanks, and the construction of a new dewatering building which houses a 2-meter belt filter press. Pressed biosolids will be transported and composted by a contracted off-site sludge handling company.

Plans call for removal of sludge to the Boulder Park Incorporated facility located in Douglas County in central Washington.

There are approximately 500 to 600 dry tons of biosolids that have been stockpiled in the existing sludge drying beds. The City hopes to begin removal of this material soon, with additional stockpiling being employed only when conditions are not favorable for transport. The contract will be extended to provide continued removal of the solids as they are generated. Estimates of exact dry tonnage to be produced will depend upon the mass of organisms required to obtain advanced nutrient removal levels. The City anticipates this to be 150 to 200 dry tons per year range.[xi]

City of Spokane Biosolids Program

The Riverside Park Water Reclamation Facility (RPWRF) generates the largest volume of biosolids within Spokane County, and produced 8,611 dry tons in 2004. These biosolids were land-applied in Spokane and Lincoln Counties. Exhibit 10-5 shows the land-applied tonnages in both counties in 2004.

EXHIBIT 10-5
Land Application of Biosolids, 2004

County	Dry Tons	Acres	Tons/Acre
Lincoln County	7,768	2,526	3.1
Spokane County	843	526	1.6

Currently, biosolids from the RPWRF are handled through a land application program. The biosolids are hauled to farm fields and applied at agronomic rates (the amount of biosolids necessary to provide enough nitrogen to grow a dry-land grain crop). Frequently, the calculated agronomic rate requires approximately 4 dry tons of biosolids per acre to provide sufficient nitrogen for a successful crop yield.

Incorporation of the biosolids cannot occur during certain months (December 1 to April 1) when the soil is frozen. During this time, the biosolids are stored within berms constructed on frozen ground. Because biosolids are inert and do not generate heat, the biosolids will not

thaw the ground beneath them. The biosolids insulate the ground, which remains frozen until the biosolids are removed in the spring.

Site suitability is evaluated based on physical site inspection and laboratory soil analysis. Criteria for site selection include location, number of available acres, number of groundwater wells, number of soil types, crop type, surface water proximity, neighbors close to site, proximity to major highways, road restrictions, prevailing winds, farmer performance and outcome of soil, and biosolids and groundwater analyses. Returning to existing prequalified sites is beneficial because they have already been approved by SRHD, the site life is established, and sampling requirements are less stringent.

The biosolids land application program began in 1982. Since that time, groundwater monitoring has been an integral part of the program. Nitrates are the primary constituents of concern. Results have been inconclusive related to local application sites, but studies in other areas of the United States have indicated a reduction in water table nitrates when farmers have substituted biosolids for commercial fertilizers as a nitrogen source.

Decreases may be attributable to more frequent monitoring data, which indicate true trends in groundwater; higher solubility, hence more mobility in commercial fertilizer nitrogen versus biosolids nitrogen; and more conservative application rates of nitrogen when biosolids are used. Nitrates are a prime indicator of pollution because they are highly mobile in soil and readily leach into groundwater, are a nutrient source that is often used in excess in agricultural areas, are easy to test for, and at relatively small concentrations do not make drinking water unpotable.

10.6.2 Key Issues

Land application is the prevailing practice for biosolids disposal in Spokane County and this practice does not significantly impact solid waste systems. Presently, the City of Spokane's Riverside Park Waste Reclamation Facility (RPWRF) operates a successful Class B land application program. However, at some time in the future, there is a potential that land application of Class B biosolids will become limited, should regulations require that wastewater treatment plants' produce only Class A biosolids for land application. Class A biosolids will require additional and more complex digestion processes that may include composting.

As a result of complying with anticipated total maximum daily loads (TMDLs) for dischargers to the Spokane River, the next level of wastewater treatment to be imposed on the dischargers will likely require chemical injection and effluent filtration. These treatment processes will result in increased volumes of biosolids and may require modifications to existing treatment plants and the biosolids disposal program.

The City of Cheney's biosolids composting facility has equipment that needs maintenance or replacement. The increase in solids loading and operations over time have contributed to the wear and decreased efficiency of existing equipment that is used to process the dewatered sludge and to handle the bulking agents. The compost mixer, which is used to combine dewatered sludge with bulking agents such as yard waste, and wood chips is more than ten years old and is beginning to shows signs of deterioration. The trommel screen that is used to

separate Class A biosolids compost from the bulking agent materials is also more then 10 years old and is showing the same signs of wear and tear as the compost mixer. The front-end loader that loads and transports the materials used in the biosolid process along with loading and transporting the finished product is also 10 years old and will need to be replaced within the next few years.

Moreover, the compost building has virtually no additional storage capacity to accommodate the increased solids loading. Every inch of available space within the compost building is being used at this time in order to accommodate the equipment needed to mix and screen the material as well as to store the compost windrows and the bulking materials. Retention time is as important in the biosolids compost process as it is in the biological treatment process. Just as the microorganisms need time to biologically treat wastewater in the conditioning tanks, the curing of compost windrows takes time as well in order to ensure the material will meet the EPA's criteria for use as a Class A soil amendment. The compost building will need to be expanded in order to prevent the biosolids compost process from being compromised.

Furthermore, back-up equipment would provide a more reliable operation. If the one and only belt filter press were to become inoperable for a prolonged period of time, the plant's biosolids process would be significantly hampered. Process improvements need to be incorporated into the operations.

10.6.3 Alternatives

In the future, land application of Class B biosolids could become limited because of regulatory changes. Spokane County should continue to monitor these potential changes and examine other alternatives for future disposal, if necessary, such as application to forest and pasture lands, or composting. If land application were no longer a viable option for the majority of biosolids disposal, a substitute method would need to be implemented.

Funding sources should be pursued for existing biosolids composting facilities that need to replace aged and worn-out equipment, to improve system processing, and to provide reliable operations. New facilities should be promoted as funding sources are available.

10.7 Contaminated Soils

10.7.1 Existing Conditions

Contaminated soils and contaminated dredged material is soils and dredged material containing contaminants (fuel oil, gasoline, other volatile hydrocarbons, or other hazardous substances) at concentrations which could negatively impact the existing quality of air, waters of the state, soils or sediments, or pose a threat to the health of humans or other living organisms (SRHD's Solid Waste Handling Standards, 1.06.100, Definitions). Contaminated soil results from leaking underground storage tanks and releases of hazardous substances into the soil. Most of the underground storage tanks in Spokane County have been updated and replaced with double-walled containers.

Graham Road RDF accepts contaminated soils from generators in Spokane County. The Graham Road RDF is a permitted facility and regulated by SRHD as a Limited Purpose Landfill. Exhibit 10-6 shows the disposed tonnages of contaminated soil from 2000 through 2004.

EXHIBIT 10-6
Contaminated Soil Disposal

Facility	2000	2001	2002	2003	2004
Graham Road RDF	4,044.11	11,995.94	8,100.88	4,607.05	19,397.26

All numbers are listed in tons.

Whole contaminated soils are accepted at the WTE plant for disposal, the County and cities should continue to allow the private sector to manage and dispose of contaminated soils in permitted facilities. These operations are likely to continue to use the Graham Road RDF or other appropriately permitted facilities. Where appropriate, the County and cities should support and encourage the private sector to treat contaminated soils to minimize the amounts landfilled.

10.8 Electronic Waste

In Spokane County, there are no restrictions on disposal of residential electronic waste. Disposal of commercial electronic waste follows no additional restrictions in the County beyond state and federal rules regarding hazardous or dangerous wastes.

There are several commercial and non-profit enterprises that collect electronic units for reuse and/or recycling from Spokane County residents. The amount of deconstruction of units varies. Most of the components are sent – whole or partially deconstructed, to facilities outside of Spokane County for further deconstruction and processing.

The Washington State Legislature passed in 2006 Engrossed Substitute Senate Bill 6428 establishing 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 will be 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 four inches when measured diagonally, desktop computers, laptops, and portable computers.

Updated information on the law and rules are on Ecology's Electronic Waste webpage http://www.ecy.wa.gov/ programs/swfa/eproductrecycle/. Section 5 contains more information on electronics recycling, and Exhibit 5-7 lists sites in Spokane County where electronic units are recycled.

10.9 Foundry Operations

Industrial wastes such as those from foundry operations, if not otherwise designated as dangerous waste under 173-303 WAC, are regulated by the SRHD. Several large foundry operations are located within Spokane County. These processes produce significant quantities of wastes, primarily sand, and may contain such elements as nickel, chromium, zinc or copper. Foundry sand is delivered to the lined cell at the Graham Road RDF. A small amount of sand is exported to Idaho.

The County and cities should continue to allow the private sector to manage and dispose of foundry wastes. These operations are likely to continue to use the Graham Road RDF or other appropriately permitted facilities. Management practices should be encouraged to reduce and recycle these wastes, when feasible.

10.10 Paper Sludge

The paper-making process produces a waste sludge in large quantities that contains cellulose and lignins, as well as significant levels of nitrogenous materials. Other compounds may also be present in the waste, depending on the manufacturing process and the raw materials used.

Inland Empire Paper Company (IEP) treats wastewater from its paper-making process with an existing wastewater treatment system consisting of the following major components: 462,000-gallon primary clarifier; 3-channel 2,100,000-gallon Orbal aeration basin, and a 705,000-gallon secondary clarifier. The system is currently processing between 3.2 and 3.5 million gallons of effluent each day.

Approximately 50 dry tons per day of sludge is produced from IEP as a by-product from the processing of old newsprint (ONP) and wood chips for its paper-making process. The sludge consists primarily of "paper sludge" from wood and paper fiber fines and residuals from the de-inking process removed in the Primary Clarifier, and "bio-solids" removed in the Secondary Clarifier. The majority of this combined sludge is consumed in IEP's fluidized bed combustion system to produce steam for the mill's processes. The ash remaining from the combustion system is sent to the LaFarge Cement Company for beneficial reuse as a cement admixture.[xii]

The County and cities should continue to allow the private sector to appropriately manage and dispose of its paper sludge wastes. Management practices to reduce and recycle these wastes should be supported and encouraged, when feasible.

10.11 Tires

10.11.1 Existing Conditions

In Spokane County, an estimated 680 tons per year of tires are discarded. This estimate is based on the Waste Flow Analysis conducted for the Plan Update, which modeled the waste composition of the County utilizing available waste characterization data. According to

Ecology data, in 2004 1,000 tons of tires were recycled in the County, and an additional 990 tons were burned for energy in facilities other than the WTE facility.

For many years, tires were discarded into legal and illegal tire piles around the county. Tire piles in the county were reduced when the state Department of Ecology cleaned up piles at licensed facilities as part of a volume reduction initiative in 1995. Since then, SRHD has set standards for facilities that store waste tires in quantities of greater than eight hundred automobile tires or the combined weight equivalent of 16,000 pounds of all types of waste tires. These standards are not applicable to the storage of waste tires in an enclosed building or in mobile containers used to transport waste tires (Waste Tire Storage and Transportation, 1.06.350). SRHD's regulations contain the same requirements on dimensions and fire protection measures for tire storage areas as contained in 173-350-350 WAC. Neighboring counties often transport waste tires to Spokane County to avoid strict disposal requirements and fees in their own areas.

Many of the operations that received tires in the past have gone out of business. At this time, the locations that are receiving tires are as follows:

- **Auto scrap yards** save reusable tires for resale or recapping. Unreusable tires are sent with the scrapped vehicles to contracted scrap metal processors, sent to tire recycling facilities, or disposed.
- **Graham Road RDF** receives tires and disposes of them directly into the landfill. No pickup service is available.
- **L&S Tires** receives tires for processing. Equipment is used to bale and compress tires into "T-blocks" that are wire bound and used for recycling. Certain requirements must be met at the facility, including limiting onsite tire piles to less than 800 loose tires.
- **RRLF** receives a low volume of tires and disposes of them directly into the landfill. No pickup service is available.
- **Tire shops**, in the process of doing business, accept, collect, temporarily store, and haul tires to a disposal or recovery site. A disposal fee is charged to customers. Many tires generated in the County are shipped to Montana or Canada for disposal.
- **WTE Facility** receives a low volume of whole tires as a part of the general MSW stream. However, dedicated loads of tires are not permitted, and large tires (such as those used on heavy machinery) are not accepted.

10.11.1.1 Regulations

State

The State of Washington requires maximum tire pile dimensions to be limited to 5,000 square feet in area, 50,000 cubic feet in volume, and 10 feet in height (WAC 173-350-350). The State also requires the presence of onsite fire control equipment and fencing around the tire pile area to control access.

Local

Tire piles are permitted by the SRHD under their Solid Waste Handling Standards. Unincorporated Spokane County and municipalities may enact stricter standards within their jurisdictions through zoning or nuisance ordinances.

10.11.2 Key Issues

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 like 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.

10.11.3 Alternatives

Four alternatives are presented to address tires:

1. County and city purchasing programs for recycled tire products.
2. Continue to promote and implement County and city fleet programs to reduce tire waste.
3. Public education programs.
4. Waste tires as feedstock for Waste to Energy Facility during seasonal low-volume periods.

Each is discussed below.

1. County and city purchasing programs for recycled tire products.

As was discussed in Section 4, jurisdictions can use their purchasing power to promote markets for scrap tires. There are a wide variety of tire-derived products available in the marketplace such as molded rubber products (e.g., carpet underlay, flooring material, dock bumpers, patio decks, railroad crossing blocks, roof walkway pads, rubber tiles and bricks, movable speed bumps). EPA has developed recycled-content recommendations for many products made from scrap rubber. Additionally, rubberized asphalt can have applications in many public works projects and loose fill crumb rubber can be used in a variety of applications for recreation and outdoor use such as playgrounds and walking trails.

Purchasing programs also can promote the use of retreads in government fleets, which is a common practice in commercial fleets for large truck tires. Retreading refers to reusing a tire casing and applying a new tread to the tire surface. EPA also has a procurement guideline developed for retread tires.

2. Continue to promote and implement County and city programs to reduce tire waste.

Most city and County governments in Spokane County already divert tires from the waste stream from their fleets through maintenance and repair programs. Good tire maintenance can extend the life of a tire significantly. Windshield stickers are used to remain 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.

3. Public and business education programs.

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.

4. Tires as feedstock for Waste to Energy Facility during seasonal low-volume periods.

The waste to energy facility could stockpile tires during the year, for use during months when the facility does not receive waste with high Btu content. This would alleviate pressure on other tire facilities, and would help to reduce illegal dumping of waste tires.

10.12 Universal Wastes

10.12.1 Existing Conditions

Regulations for universal waste management were promulgated to address the needs of commercial generators. These types of materials generated by households are regulated as household hazardous waste and are addressed in Section 12.

The State of Washington considers the following to be classified as universal waste (WAC 173-303-073). These wastes are not as fully regulated as dangerous wastes and are subject to specific regulations under 173-303-573:

- Batteries, such as lead-acid batteries.
- Mercury-containing thermostats.
- Mercury-containing equipment (such as thermometers, barometers, manometers, relay and tilt switches, and flame sensors).
- Lamps, including fluorescent, mercury vapor, metal halide, high-pressure sodium, and neon.

The intent of 173-303-573 WAC is to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and

send them for recycling or proper disposal. Benefits of managing dangerous wastes as universal wastes (UW) include:

- Simple, streamlined waste management requirements.
- Higher accumulation quantity limits.
- Longer accumulation time limits.
- UW does not count toward waste generation totals to determine generator status.
- UW does not require a manifest when sent off-site.
- UW is not included on the Dangerous Waste Annual Report.

The generator of UW must be able to document the length of time that their UW has accumulated. This is most commonly done by marking the collection container or individual UW item with the first date of accumulation. UW can only be accumulated for 1 year from that date. An exception to the 1-year accumulation limit is allowed if the facility needs more time to collect enough items to facilitate proper recovery, treatment, or disposal.

10.12.2 Key Issues

Small quantity generators may manage their batteries, mercury-containing thermostats and equipment, and lamps as either UW or in accordance with the more stringent Small Quantity Generator (SQG) requirements for dangerous wastes.

10.12.3 Alternatives

1. Continue to allow small quantity generators to bring UW to existing SQG waste collection events for proper disposal.
2. Continue to promote the private sector to appropriately manage universal waste for recycling.

10.13 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the miscellaneous waste alternatives discussed above leads this Plan to recommend implementing a progressive but monitored approach to maintaining or developing miscellaneous waste programs and activities. This approach will provide for continued responsible programs for miscellaneous waste education and enforcement, while maintaining a balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for the assessment or monitoring of an issue.

The Plan supports public education as it relates to miscellaneous waste handling and disposal. Specifically, efforts to promote awareness among individual homeowners regarding the proper identification, handling, and disposal procedures for asbestos containing materials should be included as part of the System's public outreach program. Similarly, the Plan supports continued coordination with the Spokane Regional Health District to produce and distribute educational materials related to biomedical wastes. The Plan emphasizes the need

for continued System involvement in the planning and execution of local, state, and federal emergency response plans, particularly as they involve agricultural or other miscellaneous wastes discussed in this chapter.

The Plan recommends additional research and investigation of alternative uses for the ash generated as a by-product of operating the Waste to Energy facility. Currently, disposal of the resultant ash by rail to a regional landfill is a major cost component of plant operations. This recommendation supports a careful and thorough examination of the issue in the hope that better information will ultimately lead to lower disposal costs for the citizens of Spokane County, a further reduction of waste volumes, increased sustainability of our community development, and continued protection of our environment.

The Plan supports the diversion of yard debris in biosolids composting programs, but funding sources should come from outside of System or solid waste grant funds. The Plan recommends the existing programs related to contaminated soils, recycling of electronics, foundry operations, paper sludge, tires, and universal waste continue to be managed by the private sector. The Plan further encourages that, wherever appropriate, the private sector be allowed to recycle and treat other miscellaneous waste streams as they exist or become established.

Special Waste

1. In Spokane County, any generator wishing to manage hazardous wastes as special wastes should consult with the Washington State Department of Ecology (Ecology) and, as appropriate, solicit the services of qualified waste management contractors for handling and managing the wastes.

Agricultural Waste

2. Develop emergency response plans regarding agricultural waste specific to available resources and operations and in coordination with local, state, and federal agencies.
3. Continue to support existing federal, state, and other agency policies and procedures that have been developed for the management of animal carcasses that have been diagnosed or suspected of being carriers of an infectious disease.

Asbestos Waste

4. Continue to educate homeowners about proper identification of asbestos-containing materials and proper handling and disposal methods.
5. The System should continue to work with SCAPCA to develop more comprehensive information and outreach strategies. Information is available on the SCAPCA website www.scapca.org.

Ash from Waste-to-Energy Facility

6. Continue to monitor research and investigate alternatives for ash utilization. The handling of ash residue must be protective of public, worker, and environmental health and safety. Substantive changes to the handling of the ash residue shall be accompanied by an early and extensive public process consistent with WDOE permit requirements.

Any ash recycling program must be preceded by extensive research into recycled ash, with documentation that no significant harmful effects exist from the recycled ash products before a project is undertaken. Any notification of permit changes shall be copied to the governing bodies over the SRSWS.

Biomedical Waste

7. Continue to coordinate with SRDH in the distribution of educational materials for correct management of medical waste generated by residents.
8. Continue to plan and coordinate with the appropriate federal, state, and local agencies regarding emergency response plans involving human or animal diseases.

Biosolids and Septage

9. Continue to monitor potential changes and examine other alternatives for future disposal, if necessary.
10. Funding sources should be pursued for existing biosolids composting facilities that need to replace aged and worn-out equipment, to improve system processing, and to provide reliable operations.

Contaminated Soils

11. Continue to allow the private sector to manage and dispose of contaminated soils in permitted facilities.
12. Where appropriate, support and encourage the private sector to treat contaminated soils to minimize the amounts landfilled.

Electronic Waste

13. Support e-waste recycling activities within the private sector.

Foundry Operations

14. Continue to allow the private sector to manage and dispose of foundry wastes.
15. Management practices should be encouraged to reduce and recycle these wastes, when feasible.

Paper Sludge

16. The County and cities should continue to allow the private sector to appropriately manage and dispose of its paper sludge wastes.
17. Management practices to reduce and recycle these wastes should be supported and encouraged, when feasible.

Tires

18. Encourage County and city purchasing programs for recycled tire products.
19. Continue to promote and implement County and city fleet programs to reduce tire waste.

20. Continue to include information on reducing tire waste and recycled tire produces in public education programs.

21. Assess use of waste tires as feedstock for Waste to Energy Facility during seasonal low-volume periods.

Universal Wastes

22. Continue to allow small quantity generators to bring UW to existing Small Quantity Generator (SQG) waste collection events for proper disposal.

23. Continue to promote the private sector to appropriately manage universal waste for recycling.

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[i] 2002 Census of Agriculture, Spokane County, United States Department of Agriculture, Washington Agricultural Statistics Service.
[ii] Washington State Department of Ecology, Rural Waste Characterization Report, 2003.
[iii] Westby, SCAPCA.
[iv] Spokane Regional Solid Waste System, 2005.
[v] Spokane Regional Solid Waste System Annual Reports (2000-2004).
[vi] Washington State OFM.
[vii] Rawls, Spokane County, 2006.
[viii] Holderby, SRHD, June 2006.
[ix] Pelton, RPWRF, 2006.
[x] MacDonald, Cheney WWTF.
[xi] Grogg, Liberty Lake, 2006.
[xii] Krapas, Inland Empire Paper, 2006.

SECTION 11

Construction, Demolition, Landclearing and Inert Waste Management

11.1 Introduction

This section was titled "Construction, Demolition, and Landclearing Waste" in the 1998 Plan. It has been reorganized to focus on more than construction, demolition and landclearing (CDL) waste, and to include inert waste management. Under the new WAC 173-350 regulations (replacing WAC 173-304), CDL materials are managed differently from inert materials, and each type of material has special permitting requirements. CDL waste is disposed in Limited Purpose Landfills under WAC 173-350-400, and inert waste is disposed in Inert Waste Landfills under WAC 173-350-410. Some facilities in Spokane County focus primarily on CDL and/or inert waste reuse and recovery, and other facilities provide both CDL and/or inert material recovery and waste disposal services.

The following describes existing conditions in Spokane County related to the generation, recovery, and disposal of CDL and inert waste. Furthermore, key issues for both types of materials, alternative strategies for management; and recommendations for implementation are provided.

11.1.1 CDL and Inert Waste Management Goals

CDL and inert waste management goals include:

- Satisfy state priorities for waste management, and ensure adequate disposal capacity by reducing disposal of CDL and inert waste through waste reuse or reduction programs.
- Maintain proper CDL and inert waste recovery and disposal practices that protect the environment and encourage economic development.
- Maintain proper CDL and inert waste monitoring and regulatory procedures that include tracking types and quantities of CDL and inert materials disposed and recycled, and coordination among government departments that regulate land use and flow control to assure establishment of permitted facilities.
- Where provided for by regulation or local ordinance, allow opportunities for competition to reduce costs of collection, transfer, disposal, or recovery; and promote CDL and inert recycling and associated businesses.
- Establish guidelines and strategies for management of specific waste streams, including CDL and inert wastes.
- Continue public outreach and education efforts on CDL and inert waste reuse, reduction, and disposal.

11.2 Existing Conditions

11.2.1 Regulatory Framework

Construction, demolition, and landclearing waste is solid waste, largely inert, resulting from the construction, renovation, and demolition or razing of buildings, roads, and other man-made structures. In general, various types of materials come from CDL activities and those different types of materials are managed and regulated differently. 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, plumbing fixtures), and
- Trees, stumps, earth, and rock from clearing sites.

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 regulated under WAC 173-306, landfills regulated under 173-303 WAC (Dangerous Waste Regulations), or chemical waste landfills regulated under Title 40 CFR Part 761.

Inert Waste Landfills are landfills that receive only inert wastes regulated under WAC 173-350-410 (solid wastes that meet the criteria for inert waste in WAC 173-350-990).

Waste materials generated in Spokane County from CDL activities are primarily disposed in a privately owned Limited Purpose Landfill facility, the Graham Road Recycling and Disposal Facility (Graham Road RDF). Inert materials may be disposed at either Limited Purpose Landfills or Inert Waste Landfills. However, not all CDL materials may be disposed in Inert Landfills unless they are classified as inert. Also, there are several privately owned inert facilities that recover CDL waste for reuse.

In addition to the state regulations, there are local regulations for CDL and inert waste management. Section 1.06.410 of the *Solid Waste Handling Standards* published by the

Spokane Regional Health District (SRHD) contains standards for inert waste landfills that mirror those contained in the Washington Administrative Code (Thorburn, 2004).

It is important to note that in accordance with RCW 70.95.305 and SRHD 1.06.410, facilities with a total capacity of 250 cubic yards or less of inert wastes are categorically exempt from solid waste handling permitting and other requirements of this section, provided that the inert waste landfill is operated in compliance with the performance standards of WAC 173-350-040 (Washington State Legislature, 2006).

Finally, according to the Spokane County Air Pollution Control Authority (SCAPCA), 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 the System's WTE Facility.

State guidelines for the reuse or recycling of wood waste (Section 5), and disposal of solid waste (Section 9) and hazardous waste (Section 12) are provided elsewhere in this Plan.

11.2.2 Types of Material

CDL and inert waste are major components of all solid waste generated, reused, recycled, and disposed of in the United States and in the local region. Ecology data for 2004 estimate that 1.6 million tons are disposed annually in Limited Purpose Landfills (including wood waste and demolition) and inert landfills in Washington State.[i] In April 2006, a waste flow analysis was performed in Spokane County. Applying the waste flow analysis percentages to 2004 Ecology data, an estimated 118,000 tons of material disposed from Spokane County in 2004 consisted of CDL materials.[ii], [iii] Another 218,400 tons of inert waste were disposed. Continued rapid growth in the state, accompanied by the corresponding construction and remodeling activities, is likely to ensure a supply of this "waste."

11.2.3 CDL Waste Quantities

Disposed waste from Spokane County construction, demolition, and land clearing activities totaled an estimated 118,000 tons in 2004. Exhibit 11-2 shows the proportion of the CDL waste stream that consists of recyclable paper, other recyclables, compostable material, and other non-recyclable materials. Exhibit 11-3 shows detailed composition results for CDL waste.

- Over half (54%) of CDL disposed waste consists of recyclables. This includes mainly recyclable wood materials (38,700 tons), metal building materials (13,200 tons), and dirt and concrete (4,800 tons).
- Compostables (2%) and recyclable paper (4%) represented minimal portions of the CDL waste stream. Compostable materials were composed of yard wastes (2,400 tons), while recyclable paper consisted of cardboard (4,100 tons).
- "Other materials" account for approximately 40% of the C&D waste stream. These materials are typically difficult to recycle and/or do not have well established markets for the recovered commodity. The most prevalent of these materials include non-recyclable wood products (17,600 tons), composition shingles and mixed/demolition gypsum scrap

(12,700 tons), built-up roofing and tarpaper (5,500 tons), and non-recyclable paper (3,000 tons).

EXHIBIT 11-1
Waste Composition & Recoverability, C&D Disposed Waste [iv]

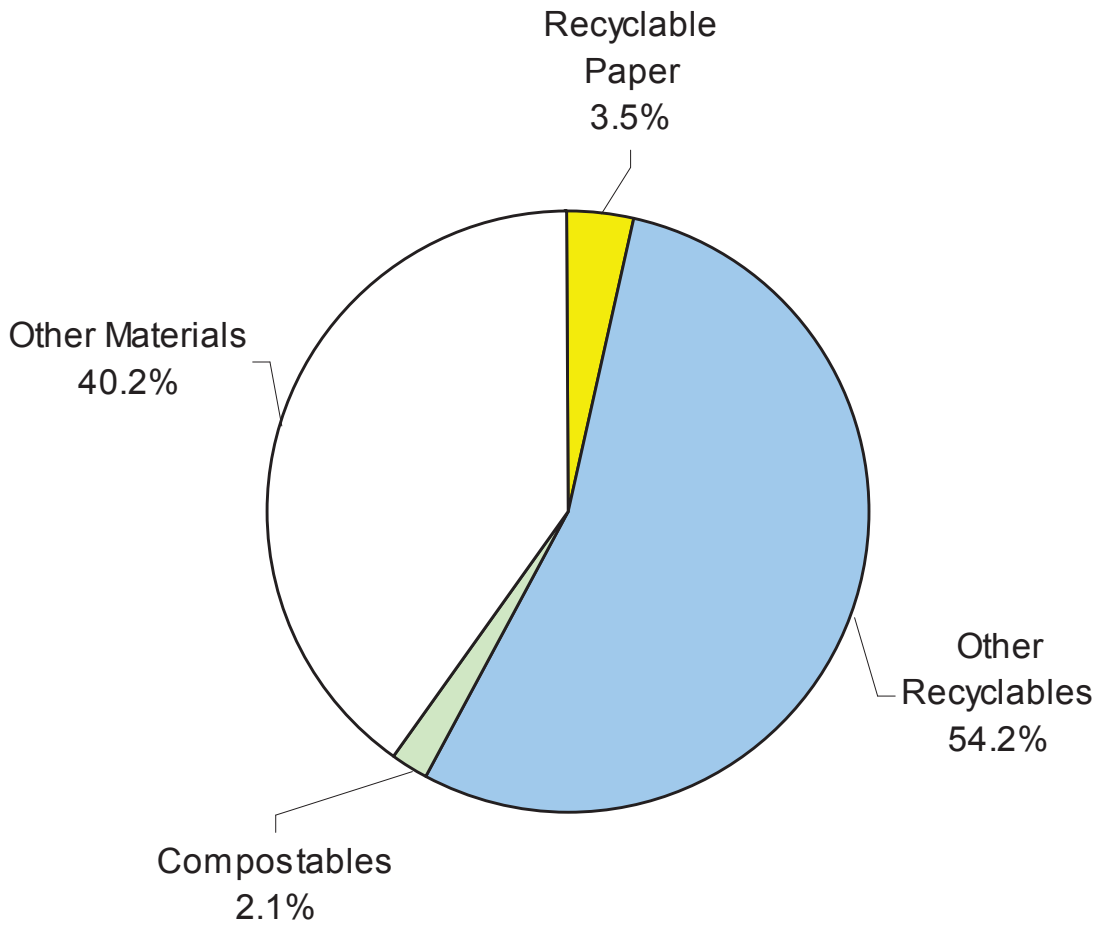

EXHIBIT 11-2
Detailed Waste Composition, C&D Disposed Waste [v]

Material	Percent	Tons
Recyclable Paper		
OCC/Kraft Bags or Paper	3.5%	4,122.0
Subtotal	**3.5%**	**4,122.0**
Other Recyclables		
#2 Plastic Buckets	0.1%	150.2
Plastic Film, Bags and Wrap	0.7%	824.1
PVC Pipe	0.9%	1,087.0
Clear Containers	0.0%	48.6
Green Containers	0.0%	-
Brown Containers	0.0%	-
Drywall Corners/Metal Bindings	0.5%	567.4
Galvanized Steel	5.2%	6,092.7
Insulated Wire/Cable	0.3%	374.9
Other Ferrous Metals	4.4%	5,173.8
Other Nonferrous Metals	0.5%	617.3
Large Appliances	0.3%	380.4
Carpeting	2.3%	2,757.3
New Gypsum Scrap	2.6%	3,042.1
New/Clean Used Lumber	8.6%	10,137.8
New/Demo. Engineered Wood	9.9%	11,649.0
Remanufacturing Scrap	0.2%	273.2
Pallets and Crates	3.0%	3,555.3
Mixed Demo. Wood	4.4%	5,135.7
Wood Roofing and Siding	4.2%	4,943.3
Unfinished Furnishings	0.0%	8.4
Asphaltic Concrete	0.4%	442.0
Concrete With/Without Rebar	1.3%	1,527.9
Bricks/Masonry Tile	0.4%	456.5
Concrete Masonry Unit (CMU)	0.0%	56.6
Clay Roofing Tile	0.1%	167.1
Slate/Quarry Tile	0.1%	140.6
Rock	0.4%	451.2
Dirt	2.7%	3,233.0
Gravel	0.5%	577.6
Sand	0.0%	-
Porcelain	0.1%	156.3
Subtotal	**54.2%**	**64,027.2**
Compostables		
Leaves and Grass	0.3%	410.6
Small Prunings	0.8%	939.5
Large Prunings	0.6%	718.3
Stumps and Logs	0.3%	360.0
Subtotal	**2.1%**	**2,428.4**

Material	Percent	Tons
Other Materials		
Other Paper	2.5%	2,979.0
ABS Pipe	0.4%	445.9
Other Plastics	0.4%	458.5
Window Glass	1.3%	1,488.4
Mirror Glass	0.0%	2.7
Other/Non-Recyc. Glass	0.0%	58.2
Upholstery	0.2%	267.7
Other Organics (e.g., rags)	0.5%	548.2
Creosote/Pressure Treated	2.0%	2,328.3
Painted/Stained Wood	11.7%	13,778.4
Finished Furnishings	0.5%	561.4
Other Wood	0.8%	928.9
Built-Up Roofing	2.0%	2,343.8
Composition Shingles	6.3%	7,415.5
Tarpaper/Asphalt Felt	2.7%	3,154.5
Mixed/Demo. Gypsum Scrap	4.5%	5,299.2
Other Mineral Aggregates	0.0%	52.0
Tyvek Vapor Barrier	0.0%	16.2
Polyurethane Foam/Carpet Padding	0.1%	161.9
Laminate/Formica	0.1%	128.1
Fiberglass (Acoustical) Ceiling Panels	0.3%	319.1
Structural Fiberglass	0.1%	73.1
Linoleum	0.1%	68.8
Insulation	1.0%	1,154.2
Latex Paint	0.1%	78.7
Wood Preservatives	0.0%	-
Oil-Based Finishes	0.0%	21.2
Solvents and Thinners	0.0%	-
Adhesives and Glue	0.0%	24.5
Asbestos	0.1%	67.1
Other Haz Waste	0.0%	-
Other Miscellaneous Fines	2.2%	2,618.2
MSW	0.5%	616.2
Subtotal	**40.2%**	**47,457.7**
Total	**100.0%**	**118,035.3**

11.3 Description of Facilities

11.3.1 System's CDL and Inert Facilities

CDL and inert waste is accepted at all System facilities and charged the regular MSW tipping fee of $98 per ton. Much of these materials are not beneficial for energy recovery. Non-burnable materials are bypassed to RRLF or the NSLF. CDL and inert waste materials from the commercial sector are also accepted for disposal at the NSLF for $98.00/ton. However, since this landfill is being used sparingly to extend its life, excessive amounts of material are not taken.

Combustible CDL materials, such as wood waste, are accepted at the System's WTE Facility. Nonburnables (including gypsum drywall) or non-putrescibles are taken to the RRLF operated by Rabanco. Cardboard packaging materials can be separated out by the hauler and recycled at the recycling areas. Scrap metal is recycled both on the tipping floor and in the recycling areas.

11.3.2 Unincorporated Areas of Spokane County - CDL and Inert Facilities

Residences and businesses in the unincorporated areas of Spokane County and in municipalities can use both System facilities and privately operated facilities that accept CDL and inert materials. All residents benefit from the System's CDL and inert materials reuse educational programs.

11.3.3 Municipal CDL and Inert Facilities

Those cities (Airway Heights, Cheney, Medical Lake) with municipal recycling collection facilities collect cardboard used for packaging (see Section 5, Recycling). Cardboard constitutes a significant portion of construction and remodeling residue. In addition, as mentioned above, residences and businesses in all municipalities of Spokane County can use both System and privately operated facilities that accept CDL and inert materials, and benefit from the System's CDL and inert materials reuse and recovery educational programs.

11.3.4 Fairchild AFB CDL and Inert Facilities

Fairchild's recycling program includes cardboard and scrap metal. Asphalt and concrete are also separated, collected, and hauled to Graham Road RDF where these inert materials are reused (see Section 5 for more details on Fairchild AFB recycling programs).

11.3.5 Privately Owned CDL and Inert Facilities

11.3.5.1 Limited Purpose Landfills

The only permitted limited purpose landfill in Spokane County is the Graham Road RDF, operated by Waste Management, Inc. It accepts CDL materials, including those that are inert, and some specific wastes (asbestos) requiring special requirements (see Exhibit 11-3 for listing of facilities and waste types). The Graham Road RDF has an estimated capacity of more than 11,000,000 tons and is expected to be a viable CDL and inert disposal option for 100 years, recycling marketable CDL and inert materials to extend the life of the facility (see Section 9, Landfills, for further details on the Graham Road RDF).

EXHIBIT 11-3
List of Demolition and Inert Facilities, Open to Public, Acceptable Materials

Facility Type	Name	Phone No.	Materials*	Operation
Limited Purpose Landfill	Graham Road Recycling and Disposal Facility	(509) 244-0151	Wood waste, lath and plaster, stumps (6 inches or larger)	Mondays through Fridays, 7:00 a.m. to 4:00 p.m.; go past the main gate of FAFB, first left on Graham Road; 1/2 mile south on Graham Road, turn right
			Asbestos (24-hour notice required)	Mondays through Fridays, 7:00 a.m. to 2:30 p.m.; must be double-wrapped in 6-mil plastic
			Tires	Call for tire prices
			Petroleum-contaminated soil, creosote-contaminated wood, railroad ties, concrete, asphalt, cardboard, plastics, metals	
Inert Facilities	Inland Asphalt Landfill Sands Road	(509) 927-9747 or (509) 534-2657	Brick, concrete, asphalt (no asphalt shingles) rock and gravel, shattered glass, clean fill dirt	Mondays through Fridays, 8:00 a.m. to 5:00 p.m., April through May (open longer, depending on weather)
	Busy Bee Landfill & Wood Recycling Co.	244-5049, 990-1055, or 981-0517	Concrete, asphalt, glass, metal, non-contaminated dirt	Mondays through Fridays, 7:00 a.m. to 4:00 p.m. Call for appt. on weekends.
			Wood shingles and anything wood (lumber, pallets, brush, stumps and clean green), asphalt shingles	These materials are not inert and are reused by Busy Bee
	Spokane Rock Products Airway Heights at 21st and Craig Road	(509) 244-5851	Concrete and asphalt, clean fill dirt	Mondays through Fridays, 7:00 a.m. to 6:00 p.m. - call first.; Not open to the general public

EXHIBIT 11-3
List of Demolition and Inert Facilities, Open to Public, Acceptable Materials

Facility Type	Name	Phone No.	Materials*	Operation
Recycling Facilities	Diversified Recycling Industry 8716 N. Green	(509) 467-2823	Rock and dirt	Mondays through Fridays, 7:00 a.m. to 6:00 p.m.; Saturday from 8:00 a.m. to 5:00 p.m.; Sunday from 9:00 a.m. to 3:00 p.m.
			Fencing and decking	These materials are not inert and are reused by Diversified Recycling Industry
			Anything wood (lumber, pallets, logs and limbs)	These materials are not inert and are reused by Diversified Recycling Industry
	Northwest Industrial Services 3808 North Sullivan, Bldg 107 2 other locations in north and east county open as demand allows. Call first.	(509) 244-8404	Construction and demolition debris Cardboard, brown paper bags, bagged office paper Pete (Code 1) plastic bottles Clear glass bottles Aluminum cans.	

11.3.5.2 Inert Facilities

There are several facilities that take only inert CDL materials. These facilities are Busy Bee, Diversified Recycling Industry, Inland Asphalt, and Spokane Rock Products (see Exhibit 11-3 for a listing of facilities and wastes received). Inland Asphalt operates an inert landfill. A few facilities (Busy Bee and Diversified Recycling Industry) accept CDL materials that are not inert, but those facilities reuse the material, and are not permitted for disposal.

11.3.5.3 Private Recovery Facilities

Most CDL and inert waste disposal facilities provide resource recovery for certain components of the CDL waste stream. The following subcomponents of CDL and inert materials are recovered within Spokane County.

Building Materials
Brown's Building Materials and Habitat Surplus Store are major used building materials businesses in the County, and they have sizable inventories. In addition, some demolition contractors acquire and resell used building materials through their demolition activities.

Cardboard
Cardboard is a significant waste material from new construction and large renovation projects, and from other packaging used for commercial and industrial businesses. Cardboard is generally recycled if the recycling venue is convenient.

Concrete/Asphalt
Spokane Rock Products, Central Pre-Mix, and Graham Road RDF reuse concrete and asphalt. The material is stockpiled, processed, and used as aggregates for base or fill. Materials are used on a seasonal basis; large inventories are not a problem.

Gypsum
Greenacres Gypsum recycles gypsum or drywall for use in its fertilizer production. They accept only source-separated and clean drywall. Based on the owner's report, they have a fairly sophisticated (and proprietary) method of removing paper from the gypsum. The paper residuals and a small percentage of gypsum are disposed at the Graham Road RDF.

Metals
Several metals recyclers receive CDL mixed and sorted metals, including Action Recycling, American Recycling, Clarks Recycling, Dickson Recycling, Du-Mor Recycling, Earthworks Recycling, and Pacific Steel and Recycling Metals recyclers, are experiencing an increase in metals recycling activity on the part of the construction industry and the general public because of increased scrap metal value from overseas demand. Some of the recyclers provide drop boxes for metals.

Ferrous metals are primarily recycled, either directly to a metals recycler, or from ferrous removed from ash at the WTE. Virtually no quantities of ferrous metals are disposed within the County.

Plastic
Plastic in the CDL waste stream includes items such as shrinkwrap and other packaging, and polyvinyl chloride (PVC) used by the plumbing, siding, and electrical trades.

Facilities that accept plastic materials for recycling are Northwest Industrial Services and Spokane Recycling (see Section 5 for more details on plastic recycling facilities).

Wood Waste

Although it can be reasonably assumed that some wood is being disposed of as a component of "mixed" waste, a significant amount of wood is diverted from disposal throughout the County. Some wood is burned onsite, used as firewood, or ground into mulch. ABCO Wood Recycling, Busy Bee, Cannon Hill Industries, Diversified Wood Recycling, Graham Road RDF, Lee's Pallets, and Northwest Industrial Services accept wood waste for recovery. More details on wood waste reuse and recycling is in Section 5, Recycling.

11.4 Key Issues for CDL and Inert Wastes

CDL 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 (see Exhibit 11-1 for more information on CDL types of 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. In Spokane County, and in the state as a whole, CDL and inert materials are now recognized as having significant potential to contribute to recycling goals and reduce waste overall.

11.5 CDL and Inert Waste Alternatives

Historically, CDL and inert wastes have been collected, transported, recycled, and disposed by the private sector. Private efforts should be supported by encouraging separation of recyclable or reusable materials from the waste stream.

In keeping with the state goals and policies for waste reduction and recycling, the following alternatives have been presented during the planning process:

1. Continue to provide outreach and education on options for the waste reduction or recovery of CDL/I.
2. Establish CDL/I waste diversion specifications for County or municipal projects.
3. Use recycled content material specifications for County or municipal construction and engineering projects.

4. Develop a CDL and Inert waste diversion ordinance.
5. Create markets for CDL/I by promoting reuse and recovery.
6. Evaluate financial incentives, System partnerships, and policies to encourage recovery/recycling of CDL/I materials.
7. Continue with development of a Disaster Management Plan for emergency disposal activities that coordinates with federal, state, and local agencies' emergency plans.
8. Assess options regarding development of in-County CDL recovery facilities.

Further discussion of these alternatives follows.

1. Continue to provide outreach and education on options for the waste reduction or recovery of CDL/I.

A straightforward method to help divert CDL and inert waste is to provide general contractors with educational material and information about alternative facilities that take CDL and inert waste. The System already provides this information through the Recycling Hotline and the business Waste Reduction Assessment Program (WRAP). Pacific Material Exchange is a local business that connects generators of a waste material with businesses looking for other businesses that can use the material beneficially. These services could be augmented by 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 available through the Industrial Material Exchange website (www.govlink.org/hazwaste/business/imex), 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, the WRAP program provides information about deconstruction and green building practices:

- Deconstruction: This involves dismantling 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.

  The U.S. Green Building Council, Cascadia Chapter (https://www.usgbc.org/) and the Northwest EcoBuilding Guild - Inland Chapter (http://www.ecobuilding.org/) are two local private organizations involved in promoting sustainable building and deconstruction practices (see Chapter 4 for more information about these organizations).

2. Establish CDL/I waste diversion specifications for County or municipal projects.

Another method for encouraging CDL and inert waste diversion is to include CDL and inert waste diversion requirements or procedures into project specifications, which are part of the contract between the contractor and the project owner. Because specifications are a major communication 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 CDL and inert materials. Incentives could be offered for those projects that met diversion specifications.

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 Spokane County and municipal jurisdictions in future construction, renovation, or demolition projects. [vi]

3. Use recycled content building specifications for county or municipal projects.

Building materials made with recycled content (insulation, plastic lumber, tiles) are market ready, competitively priced and perform as well as virgin products. To generate demand and promote the reuse of CDL and inert materials in their present and recycled form, permitting jurisdictions could require the use of recovered and recycled materials for public building and renovation projects.

Specifications for incorporating environmentally friendly materials, including recycled products, into building projects are available commercially. Additional tools available are the Comprehensive Procurement Guidelines developed by EPA (these were discussed earlier in Section 4). Several guidelines have been developed for construction products containing recycled materials.

It is important to obtain information from manufacturers verifying that the recycled content listed for a product is actually material that would otherwise have been discarded. Materials containing post-consumer waste or recovered materials have the greatest recycling merit. In-plant recycling, though it increases the efficiency of manufacturing, does not have the same environmental benefits since it does not close the consumer/manufacturer waste loop.

4. Develop a CDL and inert waste diversion ordinance.

Many jurisdictions have found that adopting and implementing a CDL/I diversion ordinance is an effective method for diverting this material from disposal. These ordinances generally require contractors, as a condition of receiving building permits, to develop waste management plans designed to divert a certain percentage of CDL/I materials generated by each project. The ordinances also include mechanisms, such as a deposit system and reporting requirements, which ensure that diversion actually occurs.

The California Integrated Waste Management Board has developed a model C&D diversion ordinance for adaptation by municipalities.[vii] Jurisdictions could consider adopting a similar CDL/I diversion ordinance.

5. Create markets for CDL/I by promoting reuse and recovery.

Options are available to the County and the System to create markets for CDL/I recovery through economic incentives (e.g., tax incentives or land use designations). Jurisdictions could help create markets for construction and demolition debris by using the "Recycling Market Development Zone" concept. The County and cities could offer incentives to attract businesses to the region that process construction and demolition debris or that manufacture products using materials typically found in construction and demolition debris. This program could provide low-interest loans, technical assistance, and free product marketing to businesses that process construction or demolition debris, or use these materials to manufacture their products. Additional incentives could include:

- Less stringent building codes and zoning laws.
- Streamlined local permit processes and siting assistance.
- Reduced taxes and licensing.

More information on this concept was previously provided in Section 5.

6. Evaluate financial incentives, System partnerships, and policies to encourage recovery/recycling of CDL/I materials.

The System could evaluate financial incentives to encourage recovery of construction and demolition debris. One example of such a system is that used by Portland Metro (Oregon).

In the Metro region, a system fee is assessed and collected on each ton of waste generated within the region. This $14.54 per ton fee is used to pay for the solid waste services that benefit the region. An excise tax on solid waste disposal is used to provide Metro with general fund revenues to pay for the many other, non-solid waste related services that Metro provides to the citizens of the region. Metro's excise tax currently is $6.39 per ton. These fees and taxes are assessed when waste is delivered to Metro's transfer stations or designated disposal facilities.

To improve material recovery in the region, a solid waste processing facility that is licensed or franchised by Portland Metro is eligible for credits toward the system fee and excise tax imposed for disposal of processing residuals from the facility. [viii] The higher the recovery rate achieved by the facility, the greater the credit amounts. To be eligible for the credits, the facility must attain a minimum monthly recovery rate of 25 percent. Materials are counted as recovered after they have been marketed or processed into a new material. The credit amounts are calculated as shown below.

PORTLAND (OR) METRO 2005 SYSTEM FEE CREDIT AND EXCISE TAX CREDIT SCHEDULE (PER TON)

Facility Recovery Rate		Credit Amounts	
From Above	Up To and Including	System Fee Credit of No More Than	Excise Tax Credit
0%	30%	$0.00	$0.00
30%	35%	$9.92	$1.92
35%	40%	$11.46	$2.75
40%	45%	$13.28	$3.51*
45%	100%	$14.00	

* Applies from 40% to 100%.

To qualify for the credits, the facility must submit monthly data on the weight of incoming loads, materials recovered, and disposed materials.

The System could also evaluate a policy of mandatory processing to increase recycling of this waste stream. One question in particular that should be evaluated is how diversion of the CDL waste stream from the WTE facility will affect WTE operations.

Because landfilling is still lower cost than recycling, Portland Metro has been evaluating requiring that all dry waste, including CDL, is processed at recovery facilities prior to disposal. It is anticipated that Metro will place a minimum recovery requirement for various commodities (e.g., wood, metal, cardboard, paper) on processing facilities.

7. Continue with development of a Disaster Management Plan for emergency disposal activities that coordinates with federal, state, and local agencies' emergency plans.

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. The System is developing a disaster management plan for emergency disposal activities specific to available resources and operations in coordination with local, state, and federal agencies.

The Disaster Management Plan will help the System identify options for collecting, handling, storing, processing, transporting, diverting, and disposing of debris. Preparing a local plan before an emergency happens will save valuable time and resources, and will respond more effectively to local needs. Three sites were identified in Section 7 - Transfer System that would be used as temporary staging and storage areas for debris from natural disasters.

8. Assess options regarding development of in-County CDL/I recovery facility to serve customers in the eastern portion of the County.

The primary CDL/I facility in Spokane County is the Graham Road limited purpose landfill, located near Airway Heights in the western portion of the County. The lack of convenient and competitive CDL/I options is a disadvantage to residents and businesses that have to travel across the County in order to use the Graham Road facility.

The System should investigate the feasibility of developing a CDL/I recovery facility to serve residents and contractors in the eastern portion of Spokane County.

11.6 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. Evaluations and comparisons of the construction, demolition, landclearing, and inert alternatives discussed above leads this Plan to recommend implementing a progressive but monitored approach to maintaining CDL and inert programs and activities. This approach will provide for continued responsible maintenance of the facility, while maintaining a balance of costs and benefits to Spokane County residents and businesses. Some of the alternatives have been modified to allow for the assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

The Plan supports continued public outreach and education on options for the waste reduction, recovery, and disposal of construction, demolition, landclearing, and inert waste (CDL/I). Based on the waste stream analysis provided as an appendix to this plan, CDL/I represents the greatest opportunity for further waste reduction through the potential recovery of recyclable materials. Therefore, the Plan strongly supports considerations for development of in-county CDL/I recycling facilities. The Plan supports the identified need for emergency storage, handling, and disposal capacity as called for in regional disaster management plans.

The Plan recommends the development of voluntary waste diversion specifications. Mandatory diversion specifications should be carefully assessed in order that they do not impose unnecessary costs compared to the benefits.

1. Continue to provide outreach and education on options for the waste reduction or recovery of CDL/I.
2. Assess development of CDL/I waste diversion specifications for County or municipal projects.
3. Assess use of recycled content material specifications for County or municipal construction and engineering projects.
4. Assess development of a CDL and Inert waste diversion ordinance.
5. Support markets for CDL/I by promoting reuse and recovery.
6. Evaluate financial incentives, public/private partnerships, and policies to encourage recovery/recycling of CDL/I materials.

7. Continue with development of a Disaster Management Plan for emergency disposal activities that coordinates with federal, state, and local agencies' emergency plans.

8. Assess options regarding development of in-County CDL recovery facilities.

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i *Solid Waste in Washington State, Fourteenth Annual Status Report,* 2005.

ii The waste flow analysis included a survey of vehicles entering each disposal facility in Spokane County. One key purpose of the survey was to determine the quantity of CDL materials brought for disposal. A load of waste was considered CDL if 80% or more of the load, by volume, consisted of CDL materials, such as wood, drywall, aggregates, scrap metal, stumps, logs, carpet, carpet padding, roofing, and insulation. The data obtained through the survey allowed for certain loads, typically reported to Ecology as MSW, to be classified as CDL for the purposes of the waste flow analysis. For this reason, the estimated quantities of CDL from the waste flow report do not match CDL tonnage data from Ecology.

iii Cascadia Consulting Group, CH2MHill; Financial Model and Waste Flow Analysis, Spokane County, 2006.

iv Cascadia Consulting Group, Spokane County Waste Flow Analysis, 2006.

v Cascadia Consulting Group, Spokane County Waste Flow Analysis, 2006.

vi More information available at: http://www.ciwmb.ca.gov/lglibrary/CandDModel.

vii More information available at: http://www.ciwmb.ca.gov/lglibrary/CandDModel.

viii Code of the Metropolitan Service District, Chapter 5.02 Disposal Charges and User Fees (Section 5.02.047) and Chapter 7.01 Excise Taxes (Section 7.01.020) available at: http://www.metro-region.org/article.cfm?articleid-408

SECTION 12

Moderate Risk Waste Management

12.1 Introduction

12.1.1 Regulations

Local governments are required by the Washington State Hazardous Waste Management Act (HWMA, Chapter 70.105 RCW) to address moderate risk waste (MRW) management in their jurisdictions. Moderate risk wastes are hazardous wastes produced by households [household hazardous waste (HHW)], and generated by businesses and institutions in small quantities that do not exceed 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 (SQG), 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. SQGs must meet certain requirements for identifying and managing their hazardous wastes, but are exempt from some of the waste tracking and reporting requirements.

Businesses or institutions producing or accumulating hazardous waste above the SQG exclusion limits are required to meet a more 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.

Hazardous waste as defined in RCW 70.105.010 is not considered solid waste, and therefore is not typically included in a Comprehensive Solid Waste Management Plan. For the purposes of this Plan, MRWs are solid wastes, and are addressed in this Plan following planning guidelines (Publication #93-99) established by Ecology and requirements of RCW 70.105.220.

In response to the HWMA and local needs, the initial MRW Plan was completed in 1991, and was adopted by Spokane County and each municipality within the county. The MRW Plan was designed to improve the management of moderate risk wastes, thereby promoting better regional protection of public health and the environment. The MRW Plan contributes to the Legislature's goal "…to establish a comprehensive statewide framework for the planning, regulation, and management of hazardous waste…" as outlined in the HWMA (RCW 70.105.007).

In 1991, the Used Oil Recycling Act (Chapter 70.95I RCW) was enacted by the Washington State Legislature.

Among other requirements, this statute required that MRW management plans more specifically address needs for collection and recycling used motor oil produced by residential "do-it-yourselfers"; that is, individuals who change the oil in their own vehicles. The Act requires that plans establish appropriate goals for improving collection, recycling, and re-refining of used oil, for educating citizens, and for meeting reporting requirements. In response to the statute, a used oil recycling element to supplement the County's MRW Plan was completed in August 1993.

This update to the Spokane County Comprehensive Solid Waste Management Plan includes an update to the 1991 Spokane County Moderate Risk Waste Management Plan, and the used oil recycling element. Unlike the original MRW Plan, the text of this update is fully integrated into the Comprehensive Solid Waste Management Plan and is not a separate, stand-alone document.

The MRW Plan proposes a comprehensive program for household and business education and technical assistance, MRW collection, and disposal compliance. The System prepared this updated MRW Plan with the guidance and assistance of technical and management staff from county and municipal departments, the Spokane County Solid Waste Advisory Committee (SWAC), local elected officials, and interested citizens.

12.1.2 MRW Management Goals

MRW management goals are similar to solid waste management of CDL, inert materials, and special wastes, and are as follows:

- Satisfy state priorities for waste management, which emphasize waste reuse and reduction over disposal.
- Maintain MRW monitoring and regulatory procedures that include tracking the types and quantities of MRW disposed and recycled.
- Provide for efficient collection and transfer of MRW, including opportunities for competition to reduce costs of collection, transfer, and processing; and promote MRW recycling and associated businesses. Establish guidelines and strategies for managing specific MRW streams.
- Continue public outreach and education efforts regarding MRW reuse, reduction, and disposal.

12.2 Existing Conditions

This section summarizes the various MRW management programs underway in Spokane County by the System, municipalities, Fairchild AFB, and private businesses. Furthermore, the SQG program is discussed including education, collection, assessment, regulated generators, transporters, and remedial action sites in Spokane County.

12.2.1 Household Hazardous Waste

The System primarily has responsibility for HHW management within Spokane County; however, some local agencies, in cooperation with municipalities, have sponsored special

events to promote and encourage HHW removal from the waste stream. Also, Fairchild AFB has an HHW collection site and promotes reuse of these materials.

12.2.1.1 System Household Hazardous Waste Program

System Education Program

The System provides HHW education for residences and businesses located in Spokane County through a variety of approaches. HHW education components are integrated within the System education programs. That is, whenever general educational information is presented by the System, a variety of topics regarding waste and disposal, including HHW, is conveyed at the same time.

Residents often have questions concerning the management of hazardous wastes, particularly used motor oil, batteries, and other hazardous wastes. Approximately 5 percent of the calls to Spokane's Recycling Hotline in 2004 were related to hazardous wastes (about 740 calls). Callers are given assistance over the phone, and in some cases are mailed supplemental information packets or brochures.

As part of the broader education program established by the System, other methods used to inform the public on HHW issues include distributing written materials through governmental offices or businesses, at meetings, and at shows and fairs. The System sponsors booths at local fairs such as the Family A-Fair, Home and Garden Show, Home Fest and Earth Day. The System has combined its waste management display with displays covering air quality and water quality issues.

Presentations, workshops, school assemblies, newsletters, and classroom presentations are used to increase awareness of environmental issues in Spokane County, including HHW management. During the 2004-2005 school year, 29 presentations were made through school assemblies and other community events by the System's solid waste education coordinator, and presentation topics typically included HHW.

Environmental education also includes production of "Recycling RAP" and "kids enviro page." Both documents are published during the school year. The RAP is distributed three times a year to 3,000 elementary school teachers countywide to assist educators with environmental education integration. The System's full-page "kids enviro page" has been a companion piece to the RAP since 1995. It is published in "Kids News" ten times during the school year and goes home with approximately 38,000 elementary school children. In addition to promoting solid waste recycling and reuse, the publication describes the importance of segregating and diverting MRW from MSW disposal, promoting the use of MRW collection facilities in the county.

Although it is difficult to measure the impacts of HHW education efforts, it is clear that an increasing number of residents are willing to take action to reduce and properly manage their wastes. This is demonstrated, in part, through participation at the System's HHW collection sites, which now receive over 37,000 visits annually.

In addition to local waste education, the System regularly provides disposal training to local jurisdictions and businesses.

System Household Hazardous Waste Collection Events

Every year, in conjunction with the Spokane Regional Health District, the Spokane Joint Aquifer Board, and RSVP (Retired Senior Volunteer Program), the System sponsors an HHW collection program called "Spring Greening."

Funded by a grant from Ecology, this program consists of volunteers distributing door hangers with educational materials, and collecting HHW for proper disposal. The events are designed to serve seniors and physically challenged citizens, providing them an opportunity to properly discard a range of HHW, including pesticides, paints, paint thinner, solvents, used motor oil, antifreeze, car batteries, furniture strippers, chemical drain cleaners, disinfectants, and similar hazardous products. In 2004, approximately 60 volunteers and 320 households took part in the Spring Greening program, resulting in more than eight (8) tons of HHW being properly disposed (System, 2004)

12.2.1.2 System Permanent Collection Sites

In 1991, permanent System HHW collection sites were established with the construction of the North County and Valley Transfer Stations, and the WTE Facility (see Exhibit 7-1). This made HHW disposal significantly more convenient for citizens. Residents can now deliver HHW at the recycling/transfer stations and WTE Facility every day of the year except major holidays.

The System's three fixed facilities receive all types of HHW. Latex paint is also accepted at these facilities, although latex paint is considered a solid waste and is processed with the MSW at the WTE facility. The cost of shipping of latex paint to a recycling facility would be prohibitive. However, useable latex paint is aggressively re-used by the public at our sites. Most latex paint disposed of is unsuitable for recycling due to freezing. The System has been involved with and will continue to support product stewardship initiatives such as paint recycling.

Radioactive wastes (except smoke detectors) are excluded, along with explosives and critically unstable materials. Trained staff operates the collection program. The program is paid for with solid waste tipping fees.

Staff accept, sort, and package HHW delivered by the public. Certain hazardous materials are placed inside a chemical storage building at each collection site. The storage building is prefabricated and separated into three compartments for corrosives, flammables, and poisons. Within each compartment, chemicals are stored on shelves, and up to three 55-gallon drums are placed for lab packing, loose packing, or bulking. Outside the chemical storage building (but within the covered facility), waste oil is stored in an 846-gallon tank, four 55-gallon drums are set up for antifreeze collection, and auto batteries are stored on a spill pallet.

Many of the HHWs collected are ultimately recycled or used as fuels. Currently, oil-based paints and other flammable liquids are shipped for fuel blending in cement kilns. Auto batteries are delivered directly to battery retailers in exchange for the core deposit. Button-cell batteries are shipped to a refining company for silver and mercury recovery. Rechargeable batteries are recycled by the Rechargeable Battery Recycling Corporation (RBRC). The costs for both shipping the batteries and recycling them are paid by the RBRC.

Used motor oil is refined in Portland, Oregon for use as a fuel supplement on ships, or sent to a refinery for production of recycled lubricating and hydraulic oils. In 2004, approximately 85,000 gallons of motor oil were sent to the refinery. The System is paid $0.15 for each gallon shipped to Portland. Antifreeze is processed for reuse as a coolant. Other wastes, such as poisons, corrosives, oxidizers, and aerosols, are lab-packed and shipped to a hazardous waste incinerator in El Dorado, Arkansas. Waste management methods are evaluated periodically and are subject to change.

A building for storing HHW prior to shipment was constructed in 1997. This facility is located at the WTE Facility.

Materials designated for disposal from all of the collection sites are consolidated at this location and held until shipped out to a treatment storage disposal (TSD) facility.

Operating costs have been remarkably low when examined on a per-vehicle basis. Average total costs per vehicle served from 1997 through 2004 were $12. Costs are influenced by many factors, but are primarily driven by the types and quantities of waste delivered to the facilities and the management methods chosen for those wastes. In 2004, approximately 52 pounds of materials were delivered per vehicle.

System HHW Collection Participation

Since the last Hazardous Risk Waste Management Plan was published in 1991, citizen participation in the HHW program has increased ten-fold. Exhibit 12-1 shows the increase in participation between 2000 and 2004.

EXHIBIT 12-1
Participation Over Time at Fixed HHW Facilities

Year	Participants
2000	35,000
2001	36,750
2002	38,352
2003	39,450
2004	37,200

Source: *Windsor (May 2006)*

Records have been kept of the types and quantities of waste handled through the fixed HHW collection facilities, including quantities of dry cell batteries received through the curbside and retail collection programs. Exhibit 12-2 summarizes the quantities of materials handled from 2001 through 2004.

EXHIBIT 12-2
Types and Quantities in Tons of HHW Collected at System Facilities

Types of HHW Materials	2000	2001	2002	2003	2004
Antifreeze	32	33	37	37	32
Automobile Batteries	85.4	94	108	91	90
Corrosives	2.2	3	8	11	9
Dry Cell Batteries	69.8	80	91	88	88
Flammable Liquids	71.1	73	78	84	89
Pesticides/Poisons	2.4	2	13	7	4
Waste Oil	300	365	339	330	322
Total	**562.9**	**650**	**674**	**648**	**634**

Used motor oil and auto batteries account for more than half of the HHW stream. In addition to the 90 tons collected through the System HHW collection program in 2004, the majority of used auto batteries produced during the year are delivered to battery retailers in exchange for the core deposit. These waste streams are being managed well through existing private and public sector efforts.

Also, the System sponsors a hazardous materials reuse program. A table is set up at the facilities for people to take reusable products, such as paints, pesticides, waxes, cleaners, and stains. Products are carefully screened by operations staff and do not include old or unidentifiable products or any restricted or banned pesticides. The program is extremely popular. Through 2004, nearly 150,000 pounds of products had been distributed through the reuse program.

12.2.1.3 System Dry Cell Battery Collection

Dry cell batteries are collected at the HHW facility at the transfer stations and the WTE Facility. Furthermore, the System also encourages retailers county-wide to accept dry cell batteries from the public. Currently, over 40 retailers and recycling centers are participating in the dry cell battery collection program. In 2004, over 80 tons of dry cell batteries were collected. This includes alkalines, rechargeables, and button cells. City of Spokane Solid Waste Management personnel sort the batteries. Mercury-containing batteries, including button cell batteries, are sent for recycling to reclaim the mercury. Rechargeables and batteries containing lead are recycled. The remaining batteries are sent for hazardous waste disposal.

12.2.1.4 System Used Oil Collection Sites and Recycling Goals

The majority of used motor oil recycled by residential "do-it-yourselfers" is received at the three System HHW collection facilities described above. However, numerous business sites throughout the county are available for residents to drop off used motor oil. Most of these sites are located at automotive service or repair shops, or auto supply retail stores. The number and location of sites changes frequently and there is not a maintained site list.

Used oil collection and recycling goals for Spokane County were established when the System adopted the Used Oil Recycling Element as an amendment to the MRW Plan in 1993. The initial collection goal was 80 percent, which is consistent with the statewide goals established in the Used Oil Recycling Act, Chapter 70.95I RCW.

12.2.1.5 System Services to Neighboring Counties

The System has interlocal agreements with neighboring Ferry, Lincoln, Pend Oreille, Stevens, and Whitman counties to assist them in training, handling, and disposing of HHW collected in their jurisdictions. The System also assists Asotin County with HHW training. These counties may deliver wastes to the System's fixed facilities for bulking, lab-packing, and shipment. This service, provided by the System at cost, helps facilitate HHW management throughout the region.

System Health and Safety Program

The System has developed an employee training program that has become both a state and national model.

An in-house training program has been prepared for solid waste facility personnel as well as HHW facility operators. This training is available to non-municipal employees who might need hazardous materials training, such as staff from local counties.

Transfer station personnel complete a 24-hour hazardous materials training course. The course includes instruction on a variety of topics, including hazard determination, hazard communication, physical and health hazards of chemicals, use of personal protective equipment, hygiene, work procedures, basic chemistry and toxicology, information on bloodborne pathogens, waste characterization, medical monitoring, emergency response, decontamination, and storage and handling of incompatible or reactive wastes.

Hazardous waste technicians responsible for supervision and specialized waste handling receive 40-hour training. These staff members are involved in lab-packing certain wastes (such as poisons, corrosives, and oxidizers) and testing unknown wastes for proper classification and disposal.

All solid waste and HHW facility employees, as well as staff members from other counties, receive an annual 8-hour refresher course in hazardous materials training. Periodically, employees participate in drills to test the effectiveness of their training.

System Compliance and Enforcement

During implementation of the MRW Plan, emphasis has been given to expanding collection opportunities, as well as providing education and technical assistance to businesses in the county to improve MRW management. If serious or imminent threats to public health or the environment are identified through complaints or onsite visits to businesses, the System will refer such problems to the appropriate regulatory agencies.

A primary focus of the System's compliance effort has been to assure the quality of the waste stream arriving at the NSLF, the WTE Facility, and the transfer stations. A load inspection program has been established to identify non-acceptable wastes, including asbestos, regulated quantities of hazardous waste, infectious waste, large containers, nonprocessible material,

recyclables, large quantities of liquids, contaminated soils, and sludge. If unacceptable wastes such as hazardous waste are discovered through load inspection, an effort is made to identify the sources of the waste. Responsible parties are notified, if possible, and arrangements made for proper waste disposal.

The quality control program also includes an emergency response plan. The plan identifies procedures for response to injuries, fires and explosions, hazardous material spills, and release of toxic gases. Training on emergency response procedures is provided to all facility employees.

System Program Evaluation

The System tracks and reports expenditures, activities, and accomplishments associated with the MRW management program. Reports are routinely provided to Ecology and the Spokane Regional Health District (SRHD). The System also compiles detailed information on its HHW and SQG waste collection programs on an annual or more frequent basis.

12.2.1.6 Municipal Household Hazardous Waste Collection

Residents and businesses in municipalities throughout the county use System HHW facilities and programs, as described in detail in the preceding section.

12.2.1.7 Fairchild Air Force Base Household Hazardous Waste Collections

Fairchild AFB operates an aggressive recycling program. As part of its program, the base Recycle Center operates a household hazardous material exchange shelf during normal business hours. This recycle-through-reuse program is designed to reuse household hazardous products. Residential customers can bring in usable materials (for example, paints, household cleaners, car care products, woodcraft stains and oils, and automotive fluids) that are kept on the exchange shelf at the center. In turn, individuals in need of products can pick up items. This program reduces the improper disposal of household hazardous materials. The base Recycle Center accepts household waste including automotive products (for example, used motor oil, spent antifreeze, white fuels, automotive batteries, and marine batteries), household batteries, and aerosol cans. The center will ensure the waste is disposed of properly. This service is available during normal business hours (Wulf, 2004).

12.2.1.8 Private Businesses

Dry Cell and Vehicle Battery Collection

In addition to System collection facilities, residential refuse collection haulers play an important role by providing curbside collection of dry cell and vehicle batteries along with other recyclable materials. The service is available to all residential customers that receive recycling collection. The program is one of the few in the United States offering curbside battery pickup. Batteries are delivered by the collection vehicles to one of the contracted recycling facilities. City of Spokane staff picks up the batteries and segregates them by battery type. Alkaline and rechargeable batteries are recycled by RBRC. Vehicle batteries and other lead-containing batteries are recycled by a local battery recycling contractor.

Other Private Business Operations

As of 2004, there were no hazardous waste treatment storage disposal (TSD) facilities in Spokane County. However, numerous companies are available to assist Spokane County generators with services such as waste testing, collection, and transportation to appropriate management facilities. Many of these companies are identified in the publication, *Hazardous Waste Disposal–A Guide for Businesses*, prepared by the System.

12.2.1.9 Other Collections

The Spokane Aquifer Joint Board (SAJB) develops programs to protect the quality of the Spokane Valley Rathdrum Prairie Aquifer. To reduce improper disposal of HHW that could harm the aquifer, the SAJB sponsored four HHW collection events in the Spokane Valley, Liberty Lake, Millwood, and Otis Orchards in collaboration with Fire District 1.Citizens were advised to bring their unwanted or unused HHW to local fire stations in order to facilitate proper disposal. The Liberty Lake collection event was part of a larger neighborhood cleanup and the most successful of the four HHW events, collecting approximately 1.5 tons of HHW. Because of the uneven participation at the events, SAJB is exploring other ways of increasing awareness of issues of HHW over the aquifer and promoting use of System facilities and programs.

12.2.2 Small-Quantity Generator

12.2.2.1 Small-Quantity Generator Education

The System conducts a variety of activities to assist SQGs in minimizing the production of hazardous waste and properly managing wastes that are produced. This service is provided to SQGs throughout the county.

Following are examples of the education and technical assistance that are provided:

- *Spokane County Hazardous Waste Guide*. This booklet is provided to area businesses. It contains information to assist businesses in designating hazardous wastes, and identifies governmental and private resources for waste management assistance.
- *Assistance to Businesses*. In cooperation with Ecology, field staff provide assistance onsite to auto repair shops, body shops, machine shops, radiator shops, auto dealers, and salvage yards.
- *Presentations*. The System presents information on Spokane County's SQG program through various workshops and business association meetings.

These activities are coordinated with numerous state and local governmental agencies and, where appropriate, trade associations. Agencies involved with these efforts include Ecology, Department of Labor and Industries, the City of Spokane Riverside Park Waste Reclamation Facility (RPWRF), City of Spokane Environmental Programs Office, local fire districts, SRHD, and Spokane County Air Pollution Control Authority (SCAPCA).

12.2.2.2 Small-Quantity Generator Hazardous Waste Collection

Since July 1993, the System provides space at the Valley Transfer Station for a hazardous waste management firm to collect wastes from SQGs. On the last Tuesday of each month,

businesses may bring their waste to this transfer station for proper management. The businesses pay the contractor for disposal based on the type and quantity of waste, and receive a record showing that they are properly managing their hazardous waste. The System pays for advertisements and education associated with the collection program. The System also provides space for contractor equipment storage, access to facility operational staff, temporary storage for consolidated waste in drums, and publicity for the program. The contractor is responsible for pre-registering participants, collecting fees, packaging and transporting wastes to approved facilities, and providing reports of each collection to the System. By assigning most of the administrative, financial, and waste handling tasks to the contractor, services are provided to SQGs with minimal workload for System staff, and at little cost to the System.

Participation has grown steadily since the program's inception. The SQG waste collection program had 200 participants in 2004 and delivered a total of approximately 11,400 pounds of hazardous waste. Exhibit 12-3 shows the tonnages collected from 2000-2004.

EXHIBIT 12-3
Small-Quantity Generator Hazardous Waste Collection

Valley Recycling/ Transfer Station	2000	2001	2002	2003	2004
Quantity	10,500	12,000	14,000	9,500	11,400
Participants	100	102	96	92	105

All numbers are listed in tons.

12.2.3 Assessment of Small-Quantity Generators

Many of the programs mentioned in the 1998 plan have ceased operations or have become obsolete because of changes in technologies that no longer use hazardous material. Information characterizing the SQG waste stream is limited. The Spokane Aquifer Joint Board (SAJB) in 2006 conducted an assessment of SQGs located over the Spokane Aquifer. The System worked with the SAJB on this assessment. Further information on this assessment can be found on the SAJB website www.spokaneaquifer.org.

12.2.4 Regulated Generators, Transporters, and Identified Remedial Action Sites

The federal Resource Conservation and Recovery Act (RCRA) and the HWMA regulate hazardous waste from the point of generation to final disposal. Businesses or institutions that generate regulated quantities of hazardous waste, transport hazardous wastes, or own or operate a hazardous waste TSD facility must obtain an EPA/state identification number, as well as comply with other regulatory requirements. Each year, every business or institution with an EPA/state ID number must submit an annual report describing its hazardous waste management activities.

Exhibit 12-4 is a list of hazardous waste generators within Spokane County reported to Ecology.[i]

EXHIBIT 12-4
Hazardous Waste Generators within Spokane County

Generator Type	Number of Generators
Large-Quantity Generator	37
Medium-Quantity Generator	43
Small-Quantity Generator	202
Total	**226**

Lists of generators and transporters and annual report information may be obtained from the Ecology Eastern Regional Office, North 4601 Monroe, Suite 100, Spokane, Washington 99205.

Poor management of hazardous waste in the past has resulted in contaminated sites throughout the State of Washington.

Seventy remedial action sites in Spokane County were designated by Ecology's Toxics Clean-up Program as needing investigation, or are undergoing hazardous waste clean-up activities. Management of these sites is shared by different Ecology sections: the Eastern Washington Section (55 sites), Headquarters Section (14 sites), and Industrial Section (1 site). Of these sites, 6 are designated Superfund sites under the EPA.

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, EPA maintains a database of potential or known hazardous waste sites on the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) (http://www.epa.gov/superfund/sites/cursites/). Sites come to the attention of EPA through notification by site owners, citizens, state and local governmental agencies, and other sources. Included within the CERCLIS is the list of federal Superfund sites on the National Priorities List. These sites are listed as priorities for response, based on their potential impact on public health or the environment. As of October 2005, there were 100 Superfund sites in Washington State, 8 of which were located in Spokane County. The National Priorities List sites in Spokane County are:

- Colbert Landfill.
- Fairchild Air Force Base (four areas).
- General Electric (Spokane shop).
- Greenacres Landfill.
- Kaiser Aluminum Mead Works.
- Mica Landfill.
- North Market Street (Tosco).
- Northside Landfill.

The sites listed above were placed on the National Priorities List between the years 1983 and 1994. Although the status of cleanup varies from site to site, in most cases significant progress has been made in completing remedial investigations, feasibility studies, interim cleanups, and/or other actions. For current lists and information on CERCLIS sites listed by

EPA, individuals may contact the Region 10 office of EPA, 1200 Sixth Avenue, Seattle, Washington 98101. Information on the current status of remedial actions at National Priorities List sites may be obtained from the Department of Ecology, Eastern Regional Office or the EPA Region 10 office.

12.3 Key Issues

The Guidelines for the Development of Local Solid Waste Management Plans and Plan Revisions, published in 1999, specifically address reducing the toxicity of the waste stream. The guidelines require that each jurisdiction plan and implement programs in five areas of toxicity reduction. These required program areas are:

- Household and public education.
- Household hazardous waste collection.
- Business technical assistance.
- Business collection assistance.
- Enforcement.

12.4 Alternatives

Options for reducing the toxicity of disposed wastes are presented within the five areas of toxicity reduction.

Household and Public Education

1. Expand public education programs to reduce the generation of moderate risk waste.
2. Continue to provide public education on alternative products.

Household Hazardous Waste Collection

3. Use mobile collection centers to target rural areas.
4. Provide on-call collection services for moderate risk waste.

4a. Continue to provide Household Hazardous Waste collection at permanent System facilities

Mercury Waste Education and Outreach

5. Continue to provide education and outreach to residents on the risks associated with mercury in the waste stream and to promote the availability of HHW collection sites and recycling businesses for alternate methods of processing along with proper handling and disposal of this waste.

Business Technical Assistance

6. Develop and distribute purchasing guidelines for re-refined lubricating oils.
7. Continue to provide business collection assistance for MRW.

8. Maintain enforcement efforts by appropriate enforcement agencies.

12.4.1 Household and Public Education

1. Expanded public education.

For education, current household hazardous waste efforts appear to be comprehensive. These efforts need to be continued on an ongoing basis to reach new residents. One segment of society that could benefit from targeted educational efforts is where English is used as a second language. For example, in Yakima County (Washington), Ecology developed a used oil/filter recycling program for Spanish speaking businesses, employers, and residents. The program has been well received, with many businesses owners requesting the information in both English and Spanish to distribute to their employees and customers.

2. Education on alternative products.

In addition to the message about proper disposal of household hazardous waste and used oil, the System also distributes educational messages on alternatives to hazardous household products. The System should review these brochures to see if there is any additional information that could be included. Much of this type of information can be found on the Washington Toxics Coalition's Home Safe Home Program website.

The Home Safe Home Program has produced a series of fact sheets that identify hazards with various types of products and suggest alternatives.[ii]

12.4.2 Household Hazardous Waste Collection

Expanded collection capabilities and increased collection events may help extend opportunities for proper disposal to more residents. Several opportunities exist for the System to expand its current household collection capabilities.

3. Use mobile collection centers to target rural areas.

In addition to permanent collection facilities, many communities use mobile facilities that travel to areas where residents do not have easy access to permanent facilities. Residents can bring their household hazardous waste to the mobile facility when it is in their community. Often communities will place a limit on the amount of waste that may be brought in by an individual, usually 5 gallons or 50 pounds total per vehicle per trip. The System could consider offering this type of service in the rural areas of the county. It is very expensive to acquire the equipment and to staff these events. The System could also consider providing funding to hire a private contractor to set up and run mobile events in different communities in the County on an experimental basis to determine demand.

4. Provide on-call collection services.

The System currently sponsors an annual event for HHW collection from senior citizens and physically challenged individuals. The System could consider offering on-call services for these individuals, rather than a single, annual event. The Retired Senior Volunteer Program (RSVP) already does this to a certain extent.

4a Continue Household Hazardous Waste collection at permanent System facilities.

The System operates three permanent collection facilities throughout Spokane County. These HHW collection facilities are at both of the transfer stations as well as at the Waste-to-Energy facility and are open for accepting materials 359 days a year.(with the exception of major holidays). All forms of HHW other than asbestos are collected. All facilities will continue to operate in the future and the System will evaluate the option of mobile collection events to service the outlying communities.

12.4.4 Business Technical Assistance

The System currently provides free technical assistance to businesses wanting to learn how to reduce and manage hazardous waste and has developed a variety of educational materials. The System offers site visitation as well as waste designation services to SQG's as well as promoting monthly collection events at the Valley Transfer Station for SQG's. These monthly collection events are conducted by a contractor that charges the SQG directly for the service without public subsidy. However, the opportunity exists to provide additional educational materials to businesses, as well as local government agencies, to foster markets for used oil and provide recognition for businesses for their environmental achievements.

5. Purchasing guidelines for re-refined lubricating oils.

Eventually, motor oil becomes dirty and must be replaced with new oil to maintain engine performance.

This used motor oil can be re-refined into new oil, processed into fuel oils, and used as raw materials for the petroleum industry. Re-refined lubricating oil is subject to the same stringent refining, compounding, and performance standards as virgin oil for use in automotive, heavy-duty diesel, and other internal combustion engines, hydraulic fluids, and gear oils. Laboratory testing and field studies have concluded that re-refined oil is equivalent to virgin oil and can pass all prescribed performance tests (e.g., cold-start, pumpability, rust-corrosion, engine-wear, and high-temperature viscosity tests). Additionally, the three major U.S. automobile manufacturers now recognize that re-refined oil meets the performance criteria in their warranties (as long as the oil meets certification standards issued by the American Petroleum Institute).

Typically, in spite of quality assurances, the general public is not interested in purchasing re-refined oil for their personal vehicles. However, fleet use of re-refined oil is a viable market. The EPA has developed a Comprehensive Procurement Guideline for re-refined oil that local governments can use in their purchasing programs for oil-related products (the price of re-refined oil is comparable to virgin oil). Additionally, this information can be made available to businesses operating in Spokane County, particularly those operating commercial fleets. The System could assess availability of re-refined oil in Spokane County, and promote its use through purchasing guidelines.

6. Business collection assistance.

The System currently provides at the Valley Transfer Station for collection of wastes generated by Small Quantity Generators, and provides assistance to school laboratories with disposal of unwanted chemicals. The System should continue to provide these services.

7. Enforcement efforts.

With respect to businesses generating hazardous wastes, the System has relied primarily on educational efforts and collection opportunities to obtain compliance with state laws. The System also uses a load inspection program to identify wastes that have been sent to System facilities for disposal, which should be managed through other appropriate means. The System should continue with these efforts.

12.5 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, the County and each municipality, and the general public. Evaluations and comparisons of the moderate risk waste alternatives discussed above leads this Plan to recommend implementing a progressive but monitored approach to moderate risk waste activities. This approach will provide for continued progress toward meeting Washington State's priority of reducing the release of hazardous waste into the environment while maintaining a sustainable balance of costs and benefits to Spokane County residents and businesses.

The Plan recommends continuing with the System's current public education program related to moderate risk waste. Additional opportunities for moderate risk waste education, training, collection, or processing programs should be carefully assessed to weigh the costs with the benefits of the programs. Expenditure of limited resources must always be appropriately scrutinized and prioritized. The Plan encourages the system to continuously look for ways to improve and monitor the effectiveness of its programs.

Some of the alternatives have been modified to allow for further assessment or monitoring of an issue before implementation. This was because the issue was either not fully supported by SWAC members, or SWAC did not have enough knowledge of the issue to warrant implementation without further study. An estimated timeframe for implementation of each recommendation is listed in Section 14, Implementation. Those alternatives that did not move forward as a recommendation were generally unsupported by SWAC and the public input process.

Household and Public Education

1. Continue public education programs to reduce the generation of moderate risk waste.
2. Continue to provide public education on alternative products.

Household Hazardous Waste Collection

3. Assess using mobile collection centers to target rural areas.

4. Assess providing on-call collection services for moderate risk waste.

Mercury Waste Education and Outreach

5. Continue to provide education and outreach to residents on the risks associated with mercury in the waste stream and to promote the availability of HHW collection sites and recycling businesses for alternate methods of processing along with proper handling and disposal of this waste.

Business Technical Assistance

6. Develop and distribute purchasing guidelines for re-refined lubricating oils.
7. Continue to provide business collection assistance for MRW.
8. Maintain enforcement efforts by appropriate enforcement agencies.

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[i] John Blunt, 2006.
[ii] More information available at: http://www.watoxics.org.

SECTION 13

Administration and Enforcement

13.1 Introduction and Goals

Two important elements of solid waste management plans are to review the existing administration structure and practices, and discuss solid waste enforcement policies and responsibilities.

Administrative and enforcement goals of Spokane County's solid waste programs are:

- Maintain an institutional framework that delineates the roles and responsibilities of Spokane County, the City of Spokane, the other regional cities, Fairchild Air Force Base, Spokane Regional Health District (SRHD), and the private sector.
- Avoid duplication of solid waste planning, programs, or administrative support services.
- Ensure that the responsibilities and authorities granted to implementing agencies allow them to function in an efficient manner.
- Develop and implement efficient programs that work and address the needs and desires of the citizens in achieving solid waste management goals and objectives.
- Ensure future financial integrity of solid waste management in the county to include:
  - Maintaining sufficient funding mechanisms.
  - Maintaining financial clarity and established measures of accountability.
- Ensure that proper monitoring, regulatory procedures, and management accountability are in place to adequately manage the various solid waste streams generated in Spokane County.
- Ensure that enforcement agencies are adequately staffed and sufficiently funded.

13.2 History of Current System

The first county-wide solid waste management plan for Spokane County was prepared in 1971, with subsequent updates in 1984, 1992, and the current 1998 update. A summary of how these plans shaped the current administrative structure and responsibilities is provided below.

13.2.1 1984 Solid Waste Management Plan

After considering alternatives for the development of an integrated, county-wide solid waste management system, Spokane County recommended the current system in the 1984 Solid Waste Management Plan. Actions were taken by the County and cities in Spokane County

with the aim of developing an efficient, stable system for the management of solid waste. The primary administrative instruments that were developed were:

- **The 1988 Interlocal Cooperation Agreement between the City of Spokane and Spokane County, Washington, Spokane Regional Solid Waste Management System, and subsequent amendments ("Interlocal Cooperation Agreement").** An agreement between the County and the City of Spokane for the financing, operation, and management of the Spokane Regional Solid Waste Management System Solid Waste System.
- **The 1985 County Waste Flow Control Ordinance and subsequent amendments.** A law established by the County to ensure disposal of waste generated in unincorporated areas at System facilities.
- **Regional City Interlocal Agreements.** Cooperative agreements between Spokane County and the City of Spokane with the other cities within Spokane County signed between 1989 and 1991 for developing a coordinated solid waste management plan, providing a regional tipping fee, and for ensuring disposal of waste generated in incorporated areas at System facilities. A similar interlocal agreement was established between the County and the City of Spokane with Fairchild Air Force Base. The cities of Spokane Valley and Liberty Lake signed interlocal agreements in 2003 shortly after their incorporation (see Exhibit 13-1).

These administrative documents provide the framework by which the solid waste system in Spokane County now operates. They delineate the roles and responsibilities of each entity, and establish clear financial responsibilities for developing and maintaining an integrated and regional solid waste system.

13.2.2 1992 Comprehensive Solid Waste Management Plan and Final Environmental Impact Statement

The 1992 Plan included a thorough review of administration and enforcement needs just as the System was beginning operations and many new waste reduction and recycling programs were being implemented. A summary of the 1992 Plan's recommendations:

- The System should continue and, if necessary, expand upon its efforts toward waste reduction, recycling, solid waste planning, special wastes handling, financial planning and management, and litter control. The System should continue to act as the primary implementing agency for solid waste capital improvement programs.
- The System should work with the Washington Utilities and Transportation Commission and refuse collectors to ensure that minimum service levels and preferential rates for recycling services are maintained in unincorporated areas. The County Interlocal Agreement should be modified to clarify the role the System will take for overseeing waste reduction and recycling programs in unincorporated areas of Spokane County.
- The coordinated approach to litter enforcement and illegal dumping cleanup between the System and the SRHD should continue. Improvements in the working relationship should take place to eliminate duplication of services.

- The County Interlocal Agreement should be amended to provide limited decision-making authority to the liaison board for reviewing and approving amendments to the solid waste plan that do not have significant cost or policy implications.
- The SRHD should continue assessing its budgetary priorities; if additional resources are needed, it should request them from the Board of Health.
- The Spokane County Comprehensive Solid Waste Management Plan should be reviewed and revised every 5 years.

13.2.3 1998 Comprehensive Solid Waste Management Plan Update

The 1998 Plan built on the planning framework established in the 1992 Plan and was prepared in accordance with the new planning requirements set forth in RCW 70.95 and outlined in the state planning guidelines. Key issues of the 1998 Plan are listed below.

- The System should continue to monitor waste flows within the System and national developments in flow control legislation. Should the need for additional revenues materialize because of waste flows leaking or leaving the System, the System should take steps to stabilize its revenue base.
- The System should prepare an annual report for the 1997 calendar year, beginning in early 1998. The annual report should be scheduled into the System's roster of tasks that need to be completed each year.
- The SRHD should work closely with System staff and inform them of any pending changes to existing solid waste facility permits, and involve them in the decision-making process when evaluating any potential new solid waste facility.
- The System should create a capital improvement fund in which funds would be collected to pay for major improvements to System facilities.
- The County Interlocal Agreement should be reviewed to determine the need for revision or amendment, including a procedure for approving amendments to the Comprehensive Solid Waste Management Plan that do not have significant cost or policy implications.
- No changes will be made to the existing solid waste administrative structure without undergoing a study by SWAC.
- The System should prepare a catastrophic waste management plan.
- The County should actively consider forming a disposal district to pay for solid waste management services.

13.3 Existing Conditions

13.3.1 Solid Waste System Administration

An integrated, county-wide solid waste management program in Spokane County is currently managed by the System. There are, however, a number of different governing jurisdictions

who are responsible for administering aspects of solid waste management activities in Spokane County, and whose coordinated activities are important to the success of this program. Jurisdictions involved in Spokane County solid waste management include:

- Washington State.
- Spokane County.
- Spokane Regional Solid Waste System.
- City of Spokane.
- Regional Cities (Airway Heights, Cheney, Deer Park, Fairfield, Latah, Liberty Lake, Medical Lake, Millwood, Rockford, Spangle, Spokane Valley, Waverly).
- Fairchild Air Force Base.

In addition, the following entities have specific roles in solid waste management:

- Spokane Regional Solid Waste System Liaison Board ("Liaison Board," originally called the Spokane Regional Solid Waste Disposal Project Policy Committee).
- Spokane County Solid Waste Advisory Committee.
- Spokane Regional Health District.

Furthermore, private businesses have specific, important solid waste management roles in the county. These businesses include solid waste reuse and recycling, collection, and disposal businesses and are described in the previous sections of this Plan.

A brief description of the roles and responsibilities of each jurisdictional participant follows.

13.3.2 Washington State

RCW 70.95 gives the Washington State Department of Ecology (Ecology) authority to promulgate solid waste regulations, review and appeal facility permits, and approve solid waste management plans. These regulations are set forth in Chapter 173-350 WAC[i] and are called the Minimum Functional Standards. Regulations are also included in Chapter 173-350 WAC[ii] Solid Waste Handling Standards, and Chapter 173-351 WAC[iii] Criteria for Municipal Solid Waste Landfills. Jurisdictional health departments have the authority to permit solid waste handling facilities and to set standards that must be at least as strict as the state standards. No permit may be issued for a facility that is inconsistent with an approved solid waste management plan.

The state has provided partial funding for various solid waste planning and project development activities through grant programs administered by Ecology. In Spokane County, grant funding was made available to assist in funding construction of the WTE Facility and for development and implementation of waste reduction, recycling, moderate risk waste, and comprehensive solid waste planning programs. State funds are also made available to the SRHD for solid waste disposal facility inspections and related administrative expenses.

The State also regulates certain solid waste collection services through the Washington Utilities and Transportation Commission (WUTC). Private garbage collection companies serving unincorporated areas and those municipalities that default to the County's authority on solid waste collection are regulated by the WUTC. The WUTC grants certificates and sets rates and types of service. WUTC authority does not automatically extend to collection in cities and towns. The WUTC also reviews portions of the comprehensive solid waste management plans. Details on the role of the WUTC are included in Section 6, Collection.

13.3.3 Spokane County

Spokane County is responsible for overseeing closure and post-closure activities at the Mica Landfill, Colbert Landfill, and Greenacres Landfill. With the signing of the Interlocal Cooperation Agreement with the City of Spokane, the County no longer owns or operates active waste handling facilities. Under that agreement, the County is responsible for ensuring delivery of waste from unincorporated areas to the System facilities and may not site or permit any new disposal facility, such as a landfill, unless it is designated as a System facility. The County reviews the System's budget each year, and any of the following "major decisions" faced by the System must be agreed to by both the City and the County:

- An expansion of the System's service territory to include use of the System by entities located outside the County.
- Discretionary modifications of the System costing in excess of $1 million.
- Major changes in the construction contract for the WTE Facility.
- Any change in tipping fee amounts or components other than changes made to fulfill bonding or closure requirements.
- Siting and selection of any publicly owned transfer stations.
- Adoption and implementation of a county-wide solid waste reduction, recycling, litter control.
- Siting and selection of any regional landfill used for solid waste.
- The adoption, development, and implementation of a county-wide dangerous waste disposal program.

The Interlocal Cooperation Agreement contains language which provides that it automatically renews in 2014 for another 20-year term unless the City of Spokane and Spokane County agree not to renew it. This interlocal agreement can be revised or terminated only if both the City of Spokane and the County agree to the revision or termination of the agreement. As long as jurisdictions continue to be a part of the System through their interlocal agreements, the City of Spokane must provide to those jurisdictions' citizens the same disposal services as City of Spokane constituents and at the same costs.

13.3.4 The Spokane Regional Solid Waste System

The Spokane Regional Solid Waste System, a department of the City of Spokane, was created by the Interlocal Cooperation Agreement between Spokane County and the City of Spokane on October 11, 1988. System facilities consist of all property owned or acquired by the City for the following purposes:

- Disposal of solid waste generated within the Spokane County's boundaries for the benefit of the County and all jurisdictions within.
- Management of solid waste generated and collected elsewhere and delivered to System facilities for disposal or recycling.

The System includes:

- The Northside Landfill.
- The WTE Facility.
- The Colbert and Valley transfer stations.
- Recycling and household hazardous waste facilities located at the WTE Facility and transfer stations.
- The Malloy Prairie ash landfill site.
- The Colbert regional compost facility site (currently inactive).
- The City of Spokane refuse collection system.
- The rights of the City to dispose of ash, bypass, and nonprocessible waste from the System facilities at non-System landfill sites (i.e., agreement with RDC for disposal at the Roosevelt Regional Landfill).

The System is a department of the City of Spokane's government under provisions of Spokane Municipal Code 13.02.0112.[iv] It is under the general direction of an executive director, who is appointed by the Mayor. The executive director is responsible for all System operations except for direct supervision of System facility operations staff. System facilities are staffed by City of Spokane Solid Waste Management employees who are under the direct supervision of the director of the Solid Waste Management department.

13.3.5 The City of Spokane

The chief executive of the City of Spokane is an elected Mayor, who performs the normal functions of an elected chief executive, including powers of appointment, supervision and dismissal of the director who directly manages the System. The Mayor proposes the annual budget for the City, which includes the System budget and System rates. The Mayor also has veto power over ordinances passed by the Spokane City Council affecting the System's operations and policies.

The City of Spokane's legislative function is performed by the Spokane City Council. The Spokane City Council confirms the Mayor's appointment of the System director and approves the System's budget and rates, except for tipping fees which are subject to final

approval by Spokane County as a "major decision" under the 1988 City-County Interlocal Cooperation Agreement. The Spokane City Council also enacts ordinances governing System operations, subject to the Interlocal Agreement.

The City of Spokane is obligated under the 1988 Interlocal Agreement to finance certain System capital improvements and to handle solid waste disposal and related functions for the City of Spokane and other participating local government jurisdictions in incorporated and unincorporated areas of Spokane County.

Besides tipping fees, the Interlocal Agreement lists other "major decisions" that must be approved by Spokane County. The Spokane Regional Solid Waste System operates as a separate administrative department of Spokane City government from the City Department of Solid Waste Management. Each department has a separate director and a separate budget. The System budget and the Solid Waste Management budget are accounted for in separate enterprise fund accounts. Collection revenues and costs of the City's Solid Waste Management Department are not included in the calculation of System tipping fees, and System revenues and costs are not included in the calculation of the City's Solid Waste Management Department's collection utility rates.

The City of Spokane is responsible for making operational decisions for the System other than the "major decisions" that must be agreed to by the County. The City of Spokane prepares the annual System budget. The System budget and the Solid Waste Management budget are accounted for in separate enterprise fund accounts. Collection revenues and costs are not included in the calculation of System tipping fees, and System revenues and costs are not included in the calculation of Spokane's collection utility rates.

13.3.6 Regional Cities and Fairchild Air Force Base

The term "regional cities" refers to the incorporated cities and towns within Spokane County, excepting the City of Spokane, that have entered into Regional City Interlocal Agreements. This includes the Cities of Airway Heights, Cheney, Deer Park, Liberty Lake, Medical Lake, and Spokane Valley; and the Towns of Fairfield, Latah, Millwood, Rockford, Spangle, and Waverly. Fairchild Air Force Base also holds an interlocal agreement with Spokane County and the City of Spokane. Each of the regional cities and Fairchild Air Force Base are responsible for making arrangements for their constituents' solid waste collection services, either by allowing for collection by a relevant WUTC-certified collection firm; or through its own crews; or by contracting directly with a private collection firm. Waste disposal and opportunities for recycling and household hazardous waste drop-off are provided at System transfer stations and the WTE Facility. In addition, some towns provide specific services: Airway Heights, Cheney, Medical Lake, and Spangle provide recycling, and Cheney has a yard waste facility.

Each of the Regional Cities located within Spokane County executed an interlocal agreement with the City and County of Spokane. Fairchild Air Force Base executed a waste commitment agreement with the City and County of Spokane. The Regional City Interlocal Agreements and the Fairchild AFB agreement ensure that they will receive consistent, high quality waste management and disposal facility services, program services for moderate risk waste, waste reduction and recycling activities, and the administrative support services

necessary to implement those operations and programs from the System. The interlocal agreements also direct each entity's waste to System facilities. Except for Liberty Lake and Spokane Valley, these interlocal agreements automatically renew for 20 years at the end of the initial terms (between 2014 and 2016) unless either party chooses not to renew. All System participants receive the same services as City of Spokane constituents and at the same costs.

Shortly after the cities of Liberty Lake and Spokane Valley and Liberty Lake were formed in 2001 and 2003, respectively, they also executed Regional City Interlocal Agreements with the City of Spokane and Spokane County; however, their terms are somewhat different.

Their interlocal agreements expire in 2011 or when the bonds are paid off. The cities of Liberty Lake and Spokane Valley will need to negotiate new disposal agreements at the end of their agreement terms.

The Regional City Interlocal Agreements authorize the System to prepare updates to the solid waste management plan. Each Plan Update must be provided to the County, each city and Fairchild Air Force Base for adoption. A city that does not adopt the prepared Plan Update is required under Chapter 70.95 RCW to prepare its own.

Exhibit 13-1 lists the expiration dates of the various interlocal agreements.

EXHIBIT 13-1
Interlocal Agreement Renewal Provisions
(*Directs Solid Waste to System and Provides Program Benefits to Participants*)

Entity	Date	Term	Term End Date	Renewals	Automatic Renewal unless either Party chooses to not renew	Responsibility for Comprehensive Solid Waste Management Plan	
						To County or Its Designee[1]	To Regional System
Airway Heights	10/10/89	25 Years	10/10/2014	Successive 20-Year Terms	√		√
Cheney	9/1/89	25 Years	9/1/2014	Successive 20-Year Terms	√		√
Deer Park	4/16/91	25 Years	4/16/2016	Successive 20-Year Terms	√	→	√
Fairchild AFB	10/16/90	25 Years	10/16/2015	Successive 20-Year Terms	√	→	√
Fairfield	10/9/90	25 Years	10/9/2015	Successive 20-Year Terms	√	→	√
Latah	6/4/91	25 Years	6/4/2016	Successive 20-Year Terms	√	→	√
Liberty Lake	9/24/03	8 Years	12/1/2011	No Provision	Agreement expires	→	√
Medical Lake	9/1/89	25 Years	9/1/2014	Successive 20-Year Terms	√		√
Millwood	5/7/91	25 Years	5/7/2016	Successive 20-Year Terms	√	→	√
Spangle	10/9/90	25 Years	10/9/2015	Successive 20-Year Terms	√		√
Spokane Valley	7/15/03	8 Years	12/1/2011	No Provision	Agreement expires	→	√
Waverly	12/11/89	25 Years	12/11/2014	Successive 20-Year Terms	√	→	√
Spokane County	4/10/89	25 Years	4/10/2014	Successive 20-Year Terms	Both City & County Must Agree Not to Renew	→	√

[1] Per Interlocal Agreement dated 7/18/88, Spokane County has delegated this to the Regional System.

13.3.7 Spokane Regional Health District

The SRHD issues permits for solid waste facilities and enforces solid waste handling regulations in the county. The SRHD's Solid Waste Handling Standards[v] are implemented through the permitting process. The SRHD issues, renews and, when necessary, suspends permits for solid waste handling and disposal facilities. Landfills, transfer stations, waste-to-energy facilities, drop-boxes, and incinerators must have permits in order to legally operate. Recycling facilities may be exempt from solid waste handling permitting if they comply with the exemption provisions in Chapter 173-350-210 WAC.[vi] All solid waste handling facility permits must conform to an approved Solid Waste Management Plan. Ecology has authority to appeal a permit to the Pollution Control Hearings Board. All solid waste facilities are inspected on a regular basis by the SRHD for conformance with solid waste regulations and permit requirements.

13.3.8 Spokane Regional Solid Waste Liaison Board

This board was formed in 1988 as the "Spokane Regional Solid Waste Disposal Project Policy Committee" through the Interlocal Cooperation Agreement. It originally consisted of two City of Spokane representatives and two Spokane County representatives. The name was changed in the 1987 interlocal agreement to the "Policy Liaison Board." According to the 1987 interlocal agreement (OPR No. 88-864), the Liaison Board was created to be a "forum for discussion among the City [of Spokane] and the County concerning the [Waste-to-Energy] Facility and to create a body to whom information concerning the Facility can be provided." The Liaison Board has no independent decision making authority, but makes recommendations to the City of Spokane and Spokane County for their legislative consideration. Individual authorities and responsibilities for operational and policy decisions of the County and the City of Spokane are detailed in other parts of the Interlocal Cooperation Agreement. The Liaison Board's purpose was restated in 1989, adding a fifth non-voting member to represent the Regional Cities. In 1992, an amendment changed the Regional City representative to a voting member. In 2003, a City of Spokane Valley representative was added to the Liaison Board through the City of Spokane Valley's interlocal agreement.

The board is required to meet at least quarterly or as agreed to by the members after the facility became operational in 1991. Currently, the board meets six times per year.

13.3.9 The Solid Waste Advisory Committee

The SWAC has been in place in Spokane County since May 1985. The SWAC played an active role in developing the 1984, 1992, and 1998 Spokane County Comprehensive Solid Waste Management plans. The committee is an ongoing advisory panel composed of representatives of solid waste industry, businesses, and citizens appointed by the County Commissioners. The chairperson of the SWAC reports to the County Commissioners to apprise them of views and positions on various issues. The System provides support staff to this committee and uses the committee as a sounding board on solid waste policies and programs.

The SWAC has been actively involved in the development of this Plan by identifying issues of concern to SWAC members and by providing comment and input throughout the planning process.

13.3.10 Waste Flow Control

The County is authorized by Chapter 36.58 RCW[vii] to designate disposal sites for all solid waste collected in the unincorporated areas of the county. In 1985, the County established a flow control ordinance (Ordinance No. 85-0395) as Chapter 8.56[viii] of the Spokane County Code. The original ordinance has been modified three times (Ordinance Numbers 88-1268, 92-1500, and 95-0481).

The flow control ordinance provides, in essence, that all solid waste generated and collected in the unincorporated areas of Spokane County shall be disposed of at sites designated by the County. In the Interlocal Cooperation Agreement, the County designated the System as its sole disposal site at all times that the System is in operation. The agreement directs that the County shall not, directly or indirectly, site or permit to be sited any solid waste disposal site other than the System, and shall enforce the Flow Control Ordinance continuously.

Waste flow control in the regional cities and Fairchild Air Force Base is established through the Regional Cities Interlocal Agreements. These agreements state that solid waste collected within the boundaries of each city or the base will be delivered to the System for disposal.

13.3.11 Monitoring and Measurement

Currently, a number of entities are involved in monitoring and measuring solid waste management activities in Spokane County:

- Ecology is responsible for reviewing this solid waste management plan and ensuring that the process and content of the Plan are consistent with state laws and regulations. Ecology also prepares annual estimates of recycled material quantities for each county in the state, including Spokane.
- The WUTC is responsible for reviewing the cost assessment section of this Plan to ensure it provides the information needed to determine impacts the Plan may have on rates of certificated waste collection companies.
- The System prepares monthly and annual records of material quantities received at all System facilities. Materials tracked include disposed waste, recyclables, household hazardous waste, and yard waste at the WTE Facility, North County and Valley transfer stations, and Northside Landfill. The System also maintains records of yard waste sent out-of-county to the regional composting facility, and ash and other solid waste sent to the Roosevelt Regional Landfill. The System also keeps records of the number and type of calls received on its recycling hotline. Additionally, the System publishes an annual report.
- Private haulers maintain records of waste and recyclables collected from their residential and commercial customers in the unincorporated areas of the County and regional cities.
- Fairchild Air Force Base maintains records of its waste collection and recycling programs.

- The SRHD maintains a record of wastes received at solid waste handling facilities in the county. It also monitors illegal dumping in the county.

13.3.12 Solid Waste Management System Evaluations

Three surveys were conducted as part of this Plan update. The first survey included interviews with representatives of the County, City of Spokane, and the Regional Solid Waste Liaison Board to obtain input on current administrative practices and recommendations for improvement. The second survey included interviews with representatives of solid waste management agencies across the country to obtain information on their administrative and operational structures to compare with the Spokane Regional Solid Waste System. The third survey included interviews with other Washington Counties regarding their Solid Waste Advisory Committees.

13.3.12.1 Interviews with County, City of Spokane, and Liaison Board Representatives

Local interviews were conducted to identify goals for System administration and governance, which included descriptions of a "perfect system," what works well under the current System, what could be improved before and after interlocal agreements expire or come up for renewal, how well the System, the Liaison Board and SWAC integrate with one another, and any other comments related to System functions.[ix] Representatives chosen for interviews included Spokane County Commissioners (Phil Harris, Mark Richard, Todd Mielke), City of Spokane Council Members (Nancy McLaughlan, Rob Crow, and Al French), and Cheney and Spokane Valley Council Members (Curt Huff and Gary Schimmels, respectively), and System staff (Dennis Hein, Joyce Smee, Damon Taam). Richard, Mielke, McLaughlin, Crow, Huff, and Schimmels comprise the members of the Liaison Board. Questions that were asked and a summary of responses are provided:

1. **We are examining the potential for enhancing the governance, administration, and operational structure of the Spokane Regional Solid Waste System. Imagine that you've been tasked with developing a new organizational structure. What would your "perfect system" look like?**

    - Keep the System administration as it is currently – there are cost efficiencies with using one director for both the Regional Solid Waste System and the City of Spokane Solid Waste Management Department. Also, there are efficient plant operations with no debt, experienced management, infrastructure in place, and protection of the environment.

    - Hire a second director so that the System and the City's collection operations would have separate managers/directors.

    - Change the make-up of the SWAC to improve balance by including representatives from environmental groups, interested citizens, and non-waste industry businesses.

    - Form a Public Utilities District (PUD) where all participate in decisions and oversee operations, which would allow policy makers from cities/County to be more engaged in detailed day-to-day operations and budget management.

- Protect the City of Spokane's financial position because the City of Spokane took on all of the financial risks, and looked out for the welfare of others in the region, not just City of Spokane citizens.

2. What aspects of the current solid waste management system work well?

- Functions as a regional system.
- Uses good technology and best available science with the WTE Facility.
- Has a comprehensive program that includes solid waste disposal; recycling; household hazardous waste; construction, demolition, and landclearing materials; inert materials; and yard waste.
- Has a combined management position that works well from an administrative viewpoint (e.g., administration of employees is cost-effective).
- Integrates transfer stations with the WTE Facility in an efficient manner.
- Takes care of Spokane County communities' wastes and doesn't burden non-local communities with waste disposal sites.
- Revenue stream is tied directly to the program incurring the expenses, which is the way all programs should be managed.

3. What aspects of the current system could be improved?

Before interlocal agreements expire or come up for renewal (2011 – 2016)

- Establish two director positions, one for the System and one for the City of Spokane's Solid Waste Management Department.
- Change make-up of the SWAC so that the representation is more balanced.
- Improve working relationships between the County, Cities, and the System.
- Consider options presented by others (other than City of Spokane).
- Take steps today to plan for future options (e.g., capital-intensive projects need to be planned for ahead of need).
- Revise System only if revenue bonds are secure.
- Look at how landfill post-closure costs for the County and City can be funded through the System.

After interlocal agreements expire or come up for renewal (2011 – 2016)

- Make System director independent of governmental jurisdiction; that is, not a City or County employee (e.g., create a disposal district or possibly hire a person or a company to manage the System).
- Merge the SWAC and Liaison Board, include other stakeholders and governmental jurisdictions, and give them more authority than just being advisory.
- Allow other jurisdictions to have an equal say in the governance of the System by purchasing proportional shares of System assets from the City.

- Create a governing board made up of all participants that would have a say on operational matters, capital improvements, and budgeting.
- Sell the System to a private party (may be more feasible for a government to own and have private sector operate).
- Eliminate the Liaison Board.
- Obtain new interlocal agreements with the City of Liberty Lake and the City of Spokane Valley and renew other interlocal agreements.
- Lower tipping fees if feasible when revenue bonds are paid.

4. How do the System, Liaison Board, and SWAC integrate with one another?

- Confrontational and uncooperative manner – as individuals, all parties do their work well; however, when all parties work together as a group, they operate in a dysfunctional manner.
- System lacks understanding of the Liaison Board's needs – all (System, SWAC, and Liaison Board) need to improve communications and relationships.
- Not inclusive of other governments in System decisions.
- There is a perception that the City may be taking advantage of other jurisdictions while managing System operations.

5. Any additional comments about the solid waste management system, or how the System coordinates their program with the participating governmental jurisdictions?

Operational comments:

- Provide an inert materials management program that is convenient and meshes well with private business operations.
- Coordinate the litter control program so that roadside cleanups are distributed between the City and areas outside of the City of Spokane in an equitable manner.
- Add compactors at the transfer stations; compacted waste could be loaded into trucks and then transported to the WTE Facility.
- Evaluate other methods of ash disposal (i.e., shipping ash to Rabanco may not be the cheapest method of ash disposal).
- Install a third boiler, but only if needed to take care of Spokane County's waste.
- Evaluate and consider integrating a proposed county transloader into System operations.
- Review contract requirements with Wheelabrator.
- Evaluate and consider an ash mono-fill located in Spokane County for WTE facility ash disposal.

- Evaluate operating the WTE Facility without certain specific waste streams (e.g., construction, demolition, and landclearing materials; City of Spokane Valley or City of Liberty Lake wastes) to determine viability.
- Look for technology pursuits that lead to the lowest possible rates for residents, and that are predictable for the long term (e.g., long haul would not be a predictable option if the contract expired in 6 months).
- Look at other solid waste system operations; however, any proposal that replaced existing operations after the bonds are retired would have to be something compelling that must be both less costly and environmentally sensitive.
- Show accountability in regards to the System's operations.

13.3.12.2 Interviews with Other Regional Solid Waste Management Systems

Interviews were conducted with other organizations (Greater Vancouver Regional District, BC; Los Angeles Sanitation Districts, CA; Palm Beach, FL; Pinellas County, FL; and NE Maryland Disposal Authority, MD) comparing their solid waste management operations or systems[i] (Exhibit 13-2) with the Spokane Regional Solid Waste System. Regional system comparisons looked at differences between:

- Jurisdictions.
- Governance.
- Day-to-day administration.
- Operations.
- Debt/financing.
- What works well
- Improvements.

All regional systems had county/city jurisdictions as participants. In one case, seven counties and only one city participated; in most cases, 21 to 78 cities participated, with only one county. The population of these systems ranged from 1 to 5 million, all larger than the population served by the System (432,000).

All interviewed systems had only one governing board, compared to the System's dual governing roles on "major decisions" by the Spokane County Board of Commissioners and the City of Spokane Council. The boards were governed primarily in two ways: county commissioners governing alone or a board/authority comprised of primary decision makers from each participating jurisdiction. With few exceptions, the governing boards and decision makers were those entities responsible for debt repayment. Governing documents varied, from joint agreements among participants to governmental rules established by a special district, county ordinance, or state legislation.

Day-to-day administration was always conducted by staff under the governing board. Operations varied from government-operated only, to a board/authority operating some functions and contracting out other functions, as with the System. In one case, operations were conducted solely by private contractors.

Only one system was without capital debt because their debt had been recently retired. Bond holders ranged from a specific governing jurisdiction such as a city or county to a board/ authority, to a private facility responsible for its own debt in concert with public facilities operated by an authority which holds the debt for those specific facilities. Revenue sources for repayment of debt included tipping fees, property assessments (not property value-based or taxed-based), electrical revenue, recycling sales, and/or interest income.

What works well from these regional systems are that they are integrated disposal systems with many options for solid waste handling. The systems are flexible and the participants work well together and support each other. In some cases, a balance of public and private facilities keeps costs low. In most cases, the tipping fee has not increased because of recycling programs or efficiency.

Few improvements to their own solid waste systems were suggested by these regional system managers. One system had a need to increase their system capacity to manage their population growth rate. Another system under a County Board was considering revising their administrative authority from the County Board to a Solid Waste Authority because an authority may work more effectively than county government in their situation.

13.3.12.3 Comparison of County SWACs

To assist Spokane County in the evaluation of their Solid Waste Advisory Committee (SWAC), representatives from seven Washington counties were interviewed in July 2006: Clark, Douglas, Pierce, Snohomish, Thurston, Whatcom, and Yakima Counties.[xi] This report presents the results of those interviews. Descriptions of each County SWAC are presented according to prescribed roles and duties, membership, and level of involvement in solid waste planning.

Membership

Local county SWACs are established by Chapter 70.95.165 (3) RCW.[xii] This code requires that each committee consist of at least nine members, selected by the county legislative authority, and represent a balance of interests, such as citizens, public interest groups, business, the waste management industry, and local elected public officials. The specific details of the interviewed county SWACs are shown in Exhibit 13-3.

Consistent with the code, Clark County SWAC has only nine members. Spokane County amended their County resolution in 2006, expanding their membership to 15 members, 3 from each of the interests suggested in the RCW. Of the other counties that have more than nine members, some of the additional positions include representatives from business, health districts, solid waste disposal facilities, and hospitals. Pierce and Snohomish County also have non-voting positions. Douglas County, which has 12 members, is the only SWAC that is divided into an executive committee and technical advisory committees. For all of the SWACs, term limits vary from 2 to 4 years, with three years being the most common. Spokane, Pierce, and Whatcom Counties limit the number of terms members can serve.

Meetings

Most SWACs interviewed are scheduled to meet monthly, although Whatcom County SWAC occasionally cancels meetings. Pierce County SWAC meets monthly during the Solid Waste

Management Plan (SWMP) development process and quarterly otherwise. Snohomish County SWAC is scheduled to meet ten times per year and generally meets eight times. Douglas County only meets quarterly, although its technical advisory committees meet more frequently. The Yakima County SWAC is the least consistent, having not met since the SWMP was adopted September 2005.

Duties and Responsibilities

For most counties interviewed, SWAC bylaws or local legislation reflect the same basic duties as described in the RCW: "To assist in the development of programs and policies concerning solid waste handling and disposal, and to review and comment upon proposed rules, policies, or ordinances prior to their adoption." Clark, Pierce, and Snohomish County SWACs are also required to facilitate communication between citizens, industry, and the County.

Clark and Douglas County SWACs have more extensive lists of duties. Some of the duties unique to Clark County SWAC are advising the Health District on their evaluation of permits for solid waste facilities, and advising the Board of County Commissioners on matters such as facility development and siting. Douglas County SWAC advises on a number of non-traditional solid waste issues, including litter, abandoned automobiles, disposal site pest trapping, and agricultural pests. Unique to Pierce County SWAC is the prescribed role of acting as a sounding board for research and discussion of solid waste topics.

Involvement in Planning Process

In terms of the level of involvement in the solid waste planning process, the SWACs varied considerably. All the SWACs interviewed act in advisory roles regarding solid waste policy. While Thurston and Yakima County SWACs deal directly with budget recommendations, the Whatcom County SWAC is precluded from dealing with budget issues. Clark, Pierce, Snohomish, and Thurston County interviewees mentioned that those SWACs are used as "sounding boards" for policy decisions. For both Clark County and Douglas County, SWAC support of policy recommendations lends more weight with the county legislative authorities. Whatcom and Thurston County interviewees reported that there is sometimes tension surrounding the SWAC's role when they try to direct rather than just advise, or for Whatcom County, when they try to deal with budget issues. Given that the Yakima County SWAC has not met since their SWMP was adopted, it appears they are the least active in planning, although the new Pierce County SWAC has not met by the time of drafting this section, so it is difficult to predict what their level of involvement will be.

Other Boards

Two counties other than Spokane have boards in addition to the SWAC that deal with solid waste issues. Spokane County has a Regional Solid Waste Liaison Board and a newly formed Stakeholder Input Committee that was created specifically for the 2009 SWMP Update. Similarly, Clark County has a Solid Waste Handling Steering Committee and Whatcom County has an Executive Committee.

13.3.13 Financial Structure

The Interlocal Cooperation Agreement between the County and the City of Spokane specifies financing along with operations and management of the solid waste system.

Revenue bonds were issued by the City of Spokane to pay for System capital purchases, including the WTE Facility and transfer stations. In addition, the City of Spokane issued bonds to pay for closure of existing County and City of Spokane landfills, and purchase the Malloy Prairie ash landfill site and the Colbert regional compost site.

13.3.13.1 Financial Obligations

The revenue bonds have administrative requirements that are directed to the City of Spokane. The City of Spokane borrowed money and must make bond payments twice a year. The bonds are rated AAA, achieved by the City of Spokane's mandatory collection of solid waste and the billing collection powers, and agreements with Spokane County, the regional cities and Fairchild Air Force Base that direct solid waste to System facilities. In the event that there were not enough revenues generated from System tipping fees to make bond payments, City of Spokane utility rate payers would need to pay for any shortfall.

Spokane County guarantees revenue through the County's Flow Control Ordinance backed by the County's general fund. The Regional City Interlocal Agreements guarantee revenue by directing the regional cities to bring their solid waste to System facilities.

To assure that bond holders are paid, the bonds have the following policy requirements for the System to accomplish:

- Make certain that revenues will be coming in (i.e., enforce interlocal agreements and ensure billing collection ability of City of Spokane ratepayers).
- Pay bills.
- Ensure a functioning system.
- Monitor System's operations to make sure the System is doing what it agreed to do, and under agreed-upon conditions (burn garbage, sell electricity, etc.).
- Notify bond holders (through bond counsel) of any changes in the operations, any System leakage (because waste leaving the County could cause tipping fees to increase), permitting issues that could allow leakage or create any other unfavorable situation, anticipated System revenue and expenses, deficits expected, reliability (e.g., assurance that County is enforcing flow control ordinance), other County actions that could influence receipt of revenues, or explain any other actions that would jeopardize the security of revenues.
- Provide a 1-year reserve account or fund that can pay 1 year of debt service ($17.5 million) that can be used only if regular collection of revenue is not sufficient to cover costs.

Revisions to existing interlocal agreements that affect revenue prior to 2011 would be possible only if bond counsel (bond underwriter and bond insurance carrier) and both the City of Spokane and Spokane County concurred with any revisions. Documentation or a proposal for why the change is requested and how it would affect revenue and the System would be submitted to bond counsel.

Bond counsel could say no and decide whether or not the issue should be presented to bond holders, who have the right to vote and decide on the acceptability of the proposal. The Counsel would provide recommendations back to the System based on the views of the underwriter, insurance carrier, and bond holders.

13.3.13.2 Solid Waste System Funding Mechanisms

In accordance with RCW 70.95.090, this Plan includes an assessment of the financial impacts of the recommended solid waste management alternatives over a 6-year period. The discussion that follows provides an overview of the sources of funding that are currently being used to pay for the recommended solid waste management program.

The System operates out of an enterprise fund. Fund 4490 has the following funding sources:

- Disposal fees.
- Electricity sales.
- Interest.
- Grants.
- Sales of recyclables.

Disposal fees are collected from residents, businesses, and haulers, including the City of Spokane, at the WTE Facility and System transfer stations. Revenues from electricity sales are received from Puget Sound Energy. Interest revenues are received from investments. Grants from the Department of Ecology are used for funding waste reduction, recycling, and household hazardous waste programs.

Revenues are also received from the sales of recyclables collected from drop-off programs at System transfer stations. The System has restricted cash that is used to manage replacement of its equipment and transfer fleet. A rate stabilization fund was established in 1988 to manage the increase in tipping fees resulting from System improvements.

13.3.14 Enforcement Practices

Multiple agencies in Spokane County have the responsibility of enforcing solid waste management regulations and programs: the City of Spokane; Spokane Regional Health District; Spokane County Air Pollution Control Authority; Spokane County; and the Washington Utilities and Transportation Commission. A summary of the responsibilities that each agency has for enforcing solid waste regulations and programs follows.

13.3.14.1 Spokane Regional Solid Waste System

The System is responsible for implementation of the Solid Waste Management Plan and coordination with other enforcement agencies. The System reimburses the City of Spokane's Code Enforcement Department for their county-wide enforcement activities pertaining to illegal dumping and litter control functions.

13.3.14.2 City of Spokane Code Enforcement Department

The Code Enforcement Department is responsible for a range of solid waste enforcement functions in all areas of Spokane County.

Enforcement activities cover illegal dumping, litter control, and special projects. The Department currently employs individuals for county-wide cleanup activities who form cleanup crews, with one crew devoted exclusively to illegal dumping sites.

In addition to actual cleanup activities for illegal dumping, the Code Enforcement Department has one individual processing and investigating complaints of illegal dumping in Spokane County. Fines and cleanup orders are also issued by the Department, and "No Dumping" signs may be posted. The Department is responsible for cleaning up illegal dumping sites that are located in areas such as County and city road rights-of-way, vacant lots owned by the County and cities, dead end or vacant roads, abandoned railroad rights-of-way, and unoccupied private property where the System is reimbursed for cleanup costs.

The Code Enforcement Department also enforces litter control regulations in Spokane County and conducts litter cleanup programs. These litter cleanup activities are conducted in a variety of areas: County road rights-of-way, city street rights-of-way, alleys, freeway on/off ramps, undeveloped lots near high traffic areas, and special high visibility areas such as parts of Centennial Trail. The Department also cleans litter from streets in incorporated cities in Spokane County. Funding for these regional clean up activities comes through interfund transfers from the System.

13.3.14.3 City of Spokane Solid Waste Management Department

Within the City of Spokane, the Solid Waste Management Department is responsible for enforcing compliance with its refuse collection regulations regarding residential and commercial collection operations in the city. The Solid Waste Management Department is also involved in other solid waste cleanup activities, including assisting in special neighborhood and school cleanup campaigns.

The City of Spokane's Code Enforcement Department works within the City of Spokane on solid waste and nuisance enforcement and cleanup activities. These activities include abatement of solid waste violations on private property, removal of illegal dumps from right of ways. Enforcement and cleanup activities within the City of Spokane are funded by user fees from the Solid Waste Management Department.

13.3.14.4 Spokane Regional Health District (SRHD)

The Spokane Regional Health District enforces solid waste regulations in Spokane County. SRHD staff is responsible for making recommendations on permits for proposed facilities such as tire, demolition, and inert waste disposal sites. Chapter 70.95.180 RCW[xiii] describes the process for jurisdictional health departments to evaluate solid waste permit applications for compliance with all existing laws and regulations and for their conformance with the Solid Waste Management Plan and all zoning requirements. SRHD's enforcement responsibilities extend to the following areas of solid waste management:

- **Illegal dumping.** SRHD receives and investigates complaints of illegal dumping and issues cleanup orders in conjunction with the System.
- **Solid Waste Facilities.** SRHD permits and makes periodic inspections of existing waste handling facilities and is responsible for inspecting the WTE Facility and transfer stations.

- **Landfills.** SRHD inspects all landfills in Spokane County at least twice yearly for compliance with State and SRHD regulations.
- **Special Wastes.** Permits are issued by SRHD for a variety of solid waste facilities, including demolition and inert waste landfills, composting facilities, tire disposal sites, and the City of Spokane's biosolids land spreading operation. SRHD also inspects each of these facilities twice yearly.

13.3.14.5 Spokane Regional Clean Air Agency (Spokane Clean Air)

The Spokane Regional Clean Air Agency (previously Spokane County Air Pollution Control Authority) is responsible for monitoring the emission of air contaminants from sources in Spokane County. In terms of solid waste management, this agency monitors emissions from the WTE Facility, landfills, recycling/transfer facilities, and composting sites. The agency is responsible for the regulation of asbestos abatement activities within Spokane County. Spokane Clean Air also permits and regulates open burning in the county, which affects the flow of yard debris as a solid waste.

13.3.14.6 Spokane County

Spokane County Utilities administers the Flow Control Ordinance for the County by granting or denying facility permits. Spokane County Planning Department has a code enforcement branch with duties that include enforcement activities to monitor and control illegal dumping on private property.

13.3.14.7 Washington Utilities and Transportation Commission (WUTC)

The WUTC regulates the collection of solid waste in unincorporated areas throughout the state and in those incorporated areas that have not established their own their solid waste collection authority.

Certificates are issued by the WUTC allowing private collection companies to operate in a specified area, at a fixed rate, and under certain service conditions. The WUTC's enforcement mechanisms include fines and the revoking of a private collector's right to collect solid waste. The WUTC also approves collection rates for collection companies in unincorporated areas within Spokane County.

Chapter 70.95.090 RCW[xiv] requires the Commission to establish guidelines for assessing rate impacts created by solid waste management plans. These guidelines, Cost Assessment Guidelines for Local Solid Waste Management Planning,[xv] were originally published in September 1990 and updated in 2001. The Commission also advises counties and cities submitting solid waste management plans and the Department of Ecology of the probable effect of the plan's recommendations on the solid waste rates charged by collection firms regulated under Chapter 81.77 RCW.[xvi]

13.3.14.8 Washington Department of Ecology (DOE)

The Department of Ecology is responsible for making recommendations on permits for

proposed septage and sludge facilities. DOE also reviews and has the right to appeal permits issued by SRHD.

13.4 Key Issues

A portion of the tipping fee received at System facilities goes toward repayment of the revenue bonds that paid for closure of the City of Spokane's and Spokane County's landfills. The residents of the cities of Airway Heights, Cheney, and Medical Lake, and Fairchild Air Force Base did not use those landfills during their operation. To compensate those cities for the costs of landfill closure in their tipping fees, the System allocates to those cities and Fairchild Air Force Base a portion of the revenues from the landfill closure component of the System's tipping fee based on each entity's population. After those bonds are retired, the rebate will no longer be paid out. The tipping fee could be reassessed to include a solid waste rebate to all regional cities, the county, and Fairchild Air Force Base that each could use for their own solid waste program purposes.

A common topic during the SWMP Update process was the administrative structure of the System after the retirement of System bonds in 2011, and the ending term or renewal of interlocal agreements shortly thereafter. It is important to acknowledge that decisions affecting the structure of the System at the end of interlocal agreement terms will be decided by each jurisdiction's elected officials, and will not be resolved in this Plan update. The update process provides a forum to document current conditions and key issues as foundations for discussions among elected officials in the future.

The System will provide solid waste disposal facility services and associated programs for jurisdictions for as long as they choose to be a part of the System (see Exhibit 13-1 for details on interlocal agreement dates). When the Regional City Interlocal Agreements come to the end of their terms, each city will have the option of renewing or negotiating new interlocal agreements with the System. Spokane County and the City of Spokane will automatically be renewed unless both agree to terminate or renegotiate the Agreement. With renewal or negotiation of a new interlocal agreement, the System would continue to provide disposal facility services as well as the other solid waste programs and planning services such as moderate risk waste, waste reduction and recycling, and the administrative support staff to implement those programs and planning activities.

Each City jurisdiction also has the option to not renew their interlocal agreement with the System and either construct their own disposal facility or transfer station, or contract with another disposal facility or transfer station. Jurisdictions could partner with one another through interlocal or other formal agreements for disposal facility services. From the revenue of those operations, they would fund their own moderate risk waste, waste reduction, recycling, and other solid waste programs and planning activities, either with their own administrative support staff or those of another jurisdiction or private contractor.

During the 2009 Plan meetings, several regional solid waste administrative designs were discussed. The System's design is described below followed by three designs proposed by the SWAC and the SIC: the creation of a Solid Waste Disposal District, the creation of a Solid Waste Disposal District with an Executive Advisory Committee, and the creation of an

Independent Regional Authority. A fifth design describes an individual municipal solid waste administrative structure.

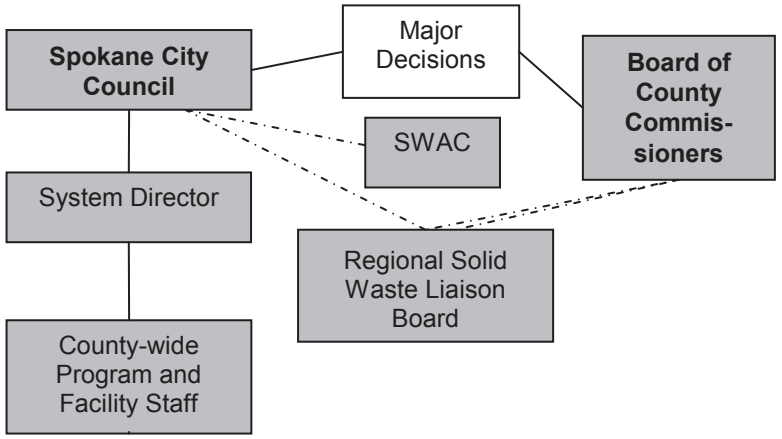
The first and second versions call for the creation of a Solid Waste Disposal District. Solid Waste Disposal Districts are authorized by Chapter 36.58.100 RCW[xvii] and have been effectively implemented in both Lewis and Whatcom Counties. Both of these versions call for a County Solid Waste Director to report to the Board of County Commissioners. In addition, the second version includes an Executive Advisory Committee.

The SWAC/SIC designs require that the County own or contract for the services of a solid waste disposal facility. These proposals would require not renewing the current interlocal agreements with Spokane County and the City of Spokane. Then, in order assure revenue to pay for the debt and operation of the new County disposal facility or contracted disposal services, waste delivery agreements would need to be negotiated with the County.

13.5 Alternatives

1. Spokane Regional Solid Waste System

The Spokane Regional Solid Waste System is the current regional solid waste administrative design. The System's administrative and governance structure is maintained within bond contracts and interlocal agreements. Revenue bonds debt is scheduled to be paid off in 2011. The majority of the interlocal agreements come up for renewal from 2014 to 2016, with the exception of Spokane Valley's and Liberty Lake's, which expire in 2011.



Governing Authority

The City of Spokane has legislative and operational authority over the System except for "major decisions" defined in the Interlocal Cooperation Agreement between the City and County of Spokane.

Purpose/Responsibility

Through the Interlocal Cooperation Agreement and Regional Cities Interlocal Agreements, the System is responsible for providing all aspects of disposing of solid wastes in Spokane County.

Description of the Spokane Regional Solid Waste System

- **Authority and Duties:** Spokane City Council has the power to appoint the executive director after consultation with the County; develop and implement the County

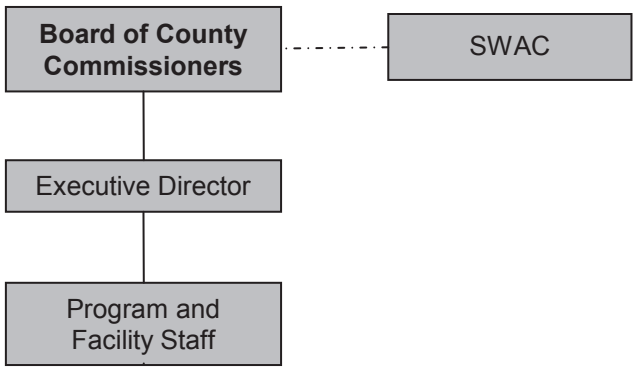
Comprehensive Solid Waste Plan, approve annual operating budgets, and establish rates and fees. The Interlocal Cooperation Agreement calls out certain "major decisions" in which the Board of County Commissioners also has approval authority.

In addition, the System is authorized to acquire funding to construct, contract for, maintain, and operate System disposal facilities. The System is advised by the SWAC and the Liaison Board.

- **Facilities:** Owned and managed by the City of Spokane.
- **Membership:** One City Council President and six Council members.
- **Appointed by:** Elected by public.
- **Terms:** Four years.
- **Relationship among Cities and County:** The County and Regional Cities have engaged in interlocal agreements with the County to be part of the System. Cities can apply for representation on the County SWAC through the County.

2. Solid Waste Disposal District

This proposal was recommended by the SWAC and calls for the Director of the Spokane Regional Solid Waste System to report to the Spokane County Board of County Commissioners. Since the System Director is an employee of the City of Spokane, the proposal was modified to reflect an Executive Director of a newly developed County disposal district, similar to the existing System, who reports to the County.



Governing Authority

The Board of County Commissioners would have legislative authority over the solid waste disposal district, as required by RCW 36.58.100.

Purpose/Responsibility

The District would be responsible to provide for all aspects of disposing of solid wastes within the disposal district in Spokane County Chapter 36.58.130 RCW.[xviii]

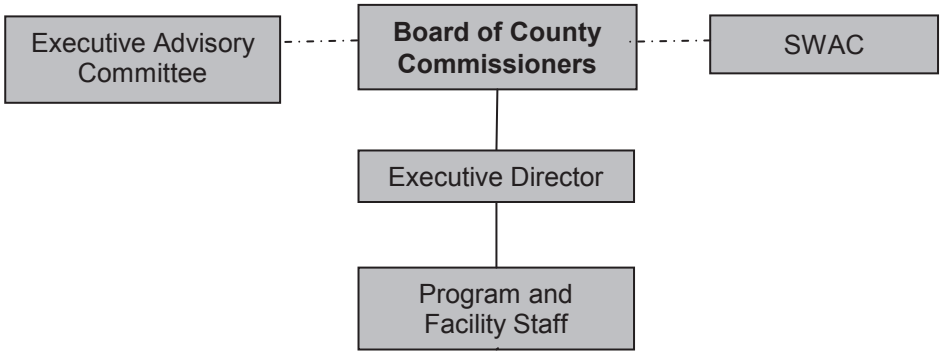
Description of Solid Waste Disposal District

- **Authority and Duties:** The Board of County Commissioners would have the power to appoint an executive director; develop and implement the County Comprehensive Solid Waste Plan, approve annual operating budgets and capital improvements; and establish rates and fees for Disposal District facilities. In addition, the board would be authorized to acquire funding to contract for or construct, operate, and maintain disposal facilities.

- **Facilities:** Owned and managed by the County.
- **Membership:** Three County Commissioners.
- **Appointed by:** Elected by public.
- **Terms:** Four years.
- **Advisory Committees:** The Board of County Commissioners would be advised by the SWAC.
- **Relationship among Cities and County:** Cities would be required to engage in interlocal agreements with the County to be part of the Solid Waste District, and could apply for representation on the County SWAC or be represented through interlocal agreements on the SWAC.

3. Solid Waste Disposal District with an Executive Advisory Committee

This proposal was also develop by the SWAC and was modified to reflect the Executive Director of a newly developed County disposal district to report to the County. This is very similar to the current System, only the governing authority lies solely with the County.



Governing Authority

The Board of County Commissioners would have legislative authority over the solid waste disposal district, as required by RCW 36.58.100.

Purpose/Responsibility

The District would be responsible to provide for all aspects of disposing of solid wastes within the disposal district in Spokane County (RCW 36.58.130).

Description of Solid Waste Disposal District with Executive Advisory Committee

In Lewis County, the County Commissioners established an Executive Advisory Committee to act as an advisory board to the District Governing Board (Board of County Commissioners).

- **Authority and Duties:** The Board of County Commissioners would hold the power to appoint an executive director; develop and implement County Comprehensive Solid Waste Management Plans, approve annual operating budgets and capital improvements; establish rates and fees; and acquire funding to construct, contract for, maintain, and operate disposal facilities.
- **Facilities:** Owned and/or managed by the County.

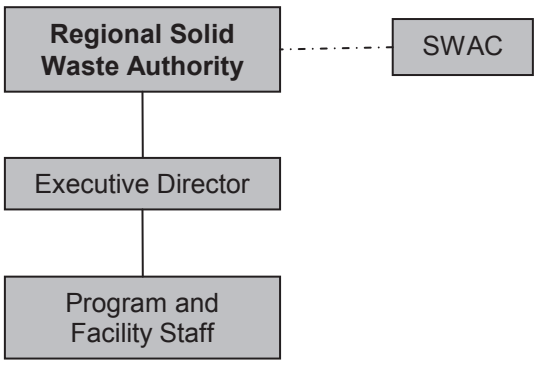
- **Membership:** Three County Commissioners.
- **Appointed by:** Elected by public.
- **Terms:** Four years.
- **Advisory Committees:** The Board of County Commissioners would establish an Executive Advisory Committee consisting of elected officials appointed from each city within the disposal district and the County, which functions in an advisory capacity to the Board. Responsibilities include considering direct implementation of Plans, including funding allocations; reviewing and recommending annual changes to rates of any taxes or other fees imposed; advising the County Board on county-wide issues involving solid waste; and reviewing and commenting on any proposed amendments to the County flow control ordinance. SWAC would also advise the Board of County Commissioners.
- **Relationship among Cities and County:** Cities would be required to engage in interlocal or other formal agreements with the County for inclusion in the solid waste district boundaries, and could apply to the County for appointment on the Executive Advisory Committee or be represented through their interlocal agreements. Cities could also apply to the County for membership on the SWAC or be represented through their interlocal agreements.

4. Independent Regional Authority

This proposal was discussed at an SIC meeting. It calls for an Executive Director to report to an Independent Regional Authority, a management structure that does not appear to have specific legislative authority under Title 36 of the Revised Code of Washington. As such, the structure of the third version would require further review by legal counsel to determine whether it is feasible under current state law and whether it could be implemented through interlocal agreements or other local mechanisms. If permissive State authority does not currently exist, special State legislation would have to be developed to establish such an entity.

Governing Authority

This body would be an independent governing body similar to a port district, as authorized by Chapter 53.04.010 RCW,[xix] or Metro in Oregon. Metro is an elected regional government for the Portland area metropolitan service district. Established by charter, this governing body manages the region's solid waste system.



Purpose/Responsibility

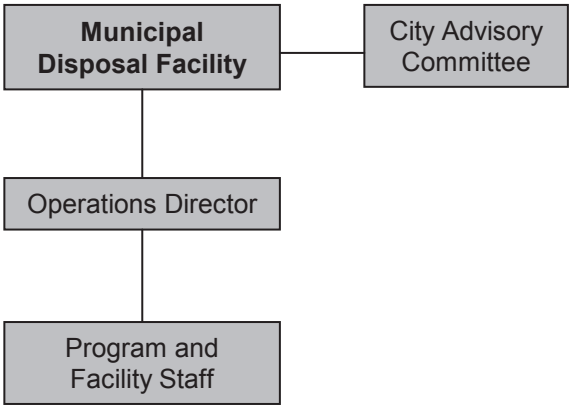
The Independent Regional Authority would be responsible for managing all aspects of solid waste of authority participants in Spokane County.

Description of Independent Regional Authority

- **Authority and Duties:** This authority would have the power to appoint an executive director; develop and implement County Comprehensive Solid Waste Management Plans, annual operating budgets, and capital improvements; and establish rates and fees. In addition, the authority would be authorized to acquire funding to construct or contract with, maintain, and operate disposal facilities. In this design, the authority would be advised by the County SWAC.
- **Facilities:** Owned or managed by the Independent Regional Authority.
- **Membership:** All members would be elected official of authority participants and could include any variation of representatives.
- **Appointed by:** City representatives would be appointed by mayors with approval from the city councils. County representative would be appointed by the Board of County Commissioners.
- **Terms:** Four years.
- **Advisory Committees:** In this design, the Regional Solid Waste Authority would be advised by the SWAC.
- **Relationship among Cities and County:** Cities and the County could participate through interlocal agreements or other formal mechanisms to secure delivery of solid waste to Regional Authority facilities. Cities and the County could also be represented through interlocal agreements on the SWAC.

5. City-Operated Disposal Facility

In addition to regional solid waste administrative designs, a city may own and operate its own disposal facility or transfer station or administer a contract for the services of another disposal facility or transfer station.



Governing Authority

The governing body would be the municipality that owns the disposal facility or administers the contract with a disposal facility.

Purpose/Responsibility

The municipality would be responsible for managing all aspects of solid waste within its jurisdiction.

Description of City-Operated Disposal Facility

- **Authority and Duties:** The municipality would have the power to appoint an operations director; develop and implement their municipal solid waste plan and incorporate it into the County Comprehensive Solid Waste Management Plans; develop annual operating

budgets and capital improvements; and establish rates and fees. The municipality would be authorized to acquire funding to construct or contract, maintain, and operate disposal facilities. In addition, the facility could contract directly with organizations other jurisdictions for waste disposal facility services.

- **Facilities:** Owned and/or contracted by the municipality.
- **Membership:** City Council members.
- **Appointed by:** Elected by public.
- **Terms:** Four years.
- **Advisory Committees:** The municipality would establish its own advisory committee.
- **Relationship among Cities and County:** A city with its own disposal facility could contract with other cities or the County through interlocal agreements or other formal mechanisms to secure delivery of solid waste to its disposal facility. Contracted jurisdictions could apply for membership on an advisory committee or could be represented through interlocal agreements on an advisory committee.

6. Regional Solid Waste Planning Committee

Decisions affecting the structure of the System regarding interlocal agreements will be decided by the elected officials of each jurisdiction. Whether the management of solid waste within Spokane County is maintained within one cohesive system, or broken up into several systems, each system would have to own or contract for the services of a disposal facility, and non-owner participants would be required to enter into interlocal agreements or other waste delivery contracts for use of that system's disposal facility, similar to the interlocal agreements currently in place with the Spokane Regional Solid Waste System.

Because of the legal and political complexities involved in understanding and designing regional solid waste disposal systems, further study and legal expertise is essential to flesh out advantages and challenges to these or any other designs. County and city elected officials could form a Regional Solid Waste Planning Committee to study and discuss issues and options regarding the future structure of solid waste management and disposal administration within Spokane County.

7. Solid Waste Program Tipping Fee Rebate

When the revenue bonds are retired after 2011 and the landfill closure component is no longer included in the tipping fee, the System should assess adding a solid waste program component to the tipping fee. The solid waste program component would be rebated to the City of Spokane, Spokane County, each regional city, and Fairchild Air Force base, based on their population. The solid waste program rebate could be used by each entity for any solid waste program cost, such as neighborhood cleanups or subsidizing curbside recycling collection costs, etc.

13.6 Recommendations

During the planning process, input on recommendations was sought from a wide variety of participants throughout the County: SWAC, SIC, Spokane County, each municipality, and the general public. The Plan recommends maintaining support for required regulatory and enforcement activities. The Plan supports cooperative efforts in reducing illegal dumping throughout the County and the abatement of solid waste nuisances on public and private property.

The Plan supports high level collaboration and representation by all affected jurisdictions within Spokane County regarding regional solid waste management and disposal administrative issues, both before and after interlocal agreements expire or are renewed. Careful evaluations of all administrative designs should be conducted in an open, transparent atmosphere to clearly identify the benefits, responsibilities, and commitments of each option.

From a governance and administrative perspective, the Plan recommends the current system be restructured into a system that is governed by a board comprised of membership that is proportionally representative of the overall region. Other regional governance boards already exist and so this would be consistent with other programs managed on a regional basis. Examples of existing boards are the Regional Public Health Board, Airport Board, Spokane Regional Clean Air Agency Board, and the Spokane Transit Authority Board. Suggested representation would be three elected officials from the City of Spokane, two elected officials from the City of Spokane Valley, two elected officials from the Association of Small Cities, and two elected Spokane County Commissioners.

Among options for administrative design, the Liaison Board could be eliminated or considered as the basis for establishment of a regional governing board with real authority for establishing policy and making final decisions in regard to system management and budgetary issues that are regional in nature.

The SWAC recommends that the Solid Waste Advisory Committee, under any revised system of governance, continue to serve in its role as an advisory body to the new board of authority. Their input could be of greater weight than the current reporting structure in which they report to the Board of County Commissioners. Additionally, that body could consider the creation of two sub-committees to help in the formulation of advice regarding 1) policy matters, and 2) technical matters.

SWAC further strongly supports that practical matters along with potential legislative actions to authorize the above recommended system dictate that the transition to a regional governance structure be planned for implementation to coincide with either expiration of existing interlocal agreements or at such time as the existing agreements can be renegotiated. The Solid Waste Advisory Committee, however, recommends that a new governance system be implemented in the most expeditious manner reasonably achievable, but not later than 2011.

Because of the legal and political complexities involved in understanding and designing regional solid waste disposal systems, the Plan recommends further study and legal expertise

to flesh out advantages and challenges to any proposed designs. The Liaison Board could facilitate the formation of a Regional Solid Waste Planning Subcommittee to study and discuss issues and options regarding the future structure of solid waste management and disposal administration within Spokane County, as described in Alternative 6.

6. Regional Solid Waste Planning Subcommittee

The Liaison Board should establish a Regional Solid Waste Planning Subcommittee within 90-days of final Plan approval, comprised of County and municipal jurisdictions, Fairchild Air Force Base, and where appropriate, agencies and stakeholders, to discuss and further research options for future regional solid waste management administrative structures, including but not limited to:

- Liaison Board assumes administration of the Spokane Regional Solid Waste System.
- Transfer of the Spokane Regional Solid Waste System administration to the Board of County Commissioners.
- Transfer of the Spokane Regional Solid Waste System administration to a Regional Board made up of county-wide stakeholders.
- Spokane Regional Solid Waste System.
- Solid Waste Disposal District.
- Solid Waste Disposal District with an Executive Advisory Committee.
- Independent Regional Authority.
- Municipal-Operated Disposal Facility(ies).
- Metropolitan Municipal Corporation

7. Assess a solid waste program tipping fee rebate.

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Management Systems

	Spokane Regional SW System, WA	Greater Vancouver Regional District, BC	Los Angeles Sanitation Districts, CA	Palm Beach, FL	Pinellas County, FL	NE Maryland Disposal Authority, MD
Jurisdictions						
Number of Cities / Counties / Other	County, 13 cities, 1 AF Base	21 cities, 1 electoral area	County, 78 cities	County, 36 cities	County, 24 cities	7 counties, 1 city
Population	432,000	2 million	~5.1 million	1.4 million	990,000 - 1.2 m	
Governance						
Governing Board	Spokane City Council, Spokane County Commission	GVRD Board	Each district is governed by a Board of Directors	Solid Waste Authority of Palm Beach Governing Board	Pinellas County Board of Commissioners	Authority Board of Director members, recommended by Board Executive, appointed by Governor
Board Constitution	Legislators	35 elected members from participating jurisdictions	Each mayor of each city within that District and Chair of the Board of Supervisors for the county unincorporated territory	7 elected Palm Beach County Commissioners	Elected County Commissioners	Representatives of each participating jurisdiction
Voting Members	City of Spokane (Spokane County)*		Board of Directors	Governing Board	County Commissioners	Authority Board of Directors
Governing Document(s)	Interlocal Agreements, Bond contracts		Joint Administrative Agreement between each District	Dependent Special District Rules of Governance	County ordinance	Enabling State legislation and Bylaws
Primary Decision-making	City of Spokane	GVRD Board	Administrative District	Governing Board	BoCC	

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Management Systems

	Spokane Regional SW System, WA	Greater Vancouver Regional District, BC	Los Angeles Sanitation Districts, CA	Palm Beach, FL	Pinellas County, FL	NE Maryland Disposal Authority, MD
Day-to-Day Administration						
Public/ Private	City of Spokane	GVRC Office of Operations staff, and Construction, Office of Policy, and Planning staff	District administrative staff	Authority staff	County staff	Authority staff
Operations						
Public/ Private	City of Spokane	GVRC staff (3 disposal sites, 7 transfer stations)	Mostly public with some private contracts	Authority staff and private contracts	Private except for County scalehouse staff	Private contractors
Debt / Financing						
Capital Debt	Yes	Yes		Yes	No	Yes
Bond Holder	City of Spokane	GVRD		Authority	Debt recently retired	Each facility is responsible for its own debt. Some facilities are privately owned, some are owned by the facility.
Repayment System	Tipping fees / City of Spokane	Tipping fees		Primarily special property assessments, (not property value-based); tipping fees, electrical revenue, recycling sales, and interest income	Tipping fees, capacity payments from Progress Energy Florida (PRF), electrical revenues, and recovered metals	Depends on facility: tipping fees, taxes, fees on tax bill, user fees
Prorated among participants	Through tipping fees	Through tipping fees		Through special assessment and user fees	Through tipping fees	Through tipping fees or tax base

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Management Systems

	Spokane Regional SW System, WA	Greater Vancouver Regional District, BC	Los Angeles Sanitation Districts, CA	Palm Beach, FL	Pinellas County, FL	NE Maryland Disposal Authority, MD
What Works Well?						
		Integrated disposal system works very well - residents have many options for disposing of trash, recyclables, etc. The system is flexible and the municipalities work well together and support each other. The tipping fee has not been increased since 1991, due to a 50% recycling rate.	Balance of public and private facilities keeps pressure on private profit margins.		Everything. Maintained same rate since early 90's; Cities satisfied; rebate "grant" to cities to fund WRR programs.	Fulfilling member needs: The Authority acts as an agent of the members and handles what they want upon request.
Improvements?						
		Managing 10% annual growth rate. The system needs more capacity and is looking at other landfill options.	Waste by rail		Considering going to a Solid Waste Authority, separate from County government.	The current institutional arrangements are working well. Feedback from members has been positive and they have indicated that they are pleased with the way the Authority operates.
Other Comments						
None						

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Advisory Committees

	Spokane Regional SW System, WA	Regional Solid Waste, ME	East Central SW Commission, MN	Fairfax County, VA	Windham SWM District, VT	Clark County, WA
Jurisdictions						
Number of Cities / Counties / Other	County, 13 cities, 1 AF Base	21 corporate member cities, 6 associate member cities	5 counties	1 county and 3 cities /communities within	18 towns	1 county and 7 cities
Population	432,000		136,000	1 million	33,300	350,000
Governance						
Governing Board	Spokane City Council, Spokane County Commission	Non-profit corporation: SWA Board of 29 corporate members representing the 21 corporate-member cities across 3 counties	ECSWC	Fairfax County	Board of Supervisors	Clark County Board of Commissioners
Board Constitution	Legislators	Staff and legislators	Commissioner from each member county	Fairfax County	Representative and alternate from each member town, selected by their boards	BoCC
Voting Members	City of Spokane (and Spokane County for major decisions)	Corporate board members	Joint Powers Agreement (multijurisdictional consortiums that provide a range of services, but maintain some local autonomy)	Commonwealth permission allows County to provide disposal services.	Charter through the State of Vermont	Interlocal Agreements between county and cities direct waste to privately contracted County-designated disposal facility
Governing Document(s)	Interlocal Agreements, Bond contracts	Interlocal Agreements, Waste Handling Agreements, Articles of Incorporation		Private hauler contracts require waste to be brought to County WTE facility.	WSWMD is responsible for design, implementation, and administration of the programs necessary for disposing of the solid waste generated by the residents of member municipalities.	

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Advisory Committees

	Spokane Regional SW System, WA	Regional Solid Waste, ME	East Central SW Commission, MN	Fairfax County, VA	Windham SWM District, VT	Clark County, WA
Primary Decision-making	City of Spokane		ECSWC	Fairfax County	Board of Supervisors	BoCC
Day-to-Day Administration						
Public/ Private	City of Spokane	RSW staff	ECSWC staff	Fairfax County Public Works staff	WSWMD staff	Clark County staff (disposal contracts, planning activities, MRW contracts, WRR education)
Operations						
Public/ Private	City of Spokane and contracts administered by the City of Spokane	RSW staff (Office, WTE Facility, Recycling center, Landfill)	ECSWC (landfill and scalehouses, MRW & HHW programs) and contracts administered by ECSWC (transfer stations)	Fairfax County Public Works (WTE Facility, transfer station, ash landfill, collection services, and recycling operations)	The District provides services other than handling and disposal of MSW. WSWMD (community recycling roll offs, landfill closure, transfer station, drop-off recycling center, Swap shop, MRF, drop-off recycling depots in each member community, mobile collection of materials not collected at individual transfer stations). Private (refuse hauling, individual community transfer stations)	No publicly run disposal operations, private contractors through contracts with Clark County (2 transfer stations, long haul landfill, including hauling, recycling MRF at one of the transfer stations - all operated by Waste Connections)

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Advisory Committees

	Spokane Regional SW System, WA	Regional Solid Waste, ME	East Central SW Commission, MN	Fairfax County, VA	Windham SWM District, VT	Clark County, WA
Debt / Financing						
Capital Debt	Yes	Yes	Yes	Yes	Yes	No
Bond Holder	City of Spokane	RSW	ECSWC, guaranteed by county	Fairfax County	District bond	
Repayment System	Tipping fees / City of Spokane	Tipping fees, electric revenue, sale of recyclables, cell phone tower / prorated member jurisdictions	Tipping fees and individual County fees	Tipping fees	Assessments to member towns and user fees. Special programs from grants & recycling revenue	Revenues for County administration and programs come from a flat administrative fee collected by disposal contractor from haulers, then paid to County. Regional cities collect admin. fee from collection contract. City of Vancouver includes a "franchise fee" in the collection bill.
Prorated among participants	Through tipping fees	Through tipping fees	Through tipping fees and County fees			Flat contractual fee from each hauler
What Works Well?						
		All of the communities came together voluntarily to create a program to manage solid waste in the region.	Counties work together well. The Commission Board works together well. Exec. Director has a strong solid waste operations background.	WTE works very, very well. Expanding recycling commodities.	Two streams, they will never go to single stream. 30% recycling rate. The 24-hour drop-off centers in the communities. The cooperative effort of the member communities.	One company for disposal and collection. Flat administrative fee for program revenues is not dependent on solid waste tonnage quantities.

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Advisory Committees

	Spokane Regional SW System, WA	Regional Solid Waste, ME	East Central SW Commission, MN	Fairfax County, VA	Windham SWM District, VT	Clark County, WA
Improvements?						
		Single-stream recycling collection, Landfill expansion for MSW bypass, name change to Eco Maine: members agreed to new contracts with no closing date.	Inconsistency in programs between counties. Commission needs educator on staff.	Expanding curbside collection of recyclables, but fuel costs are affecting refuse and recycling collection programs. Hard to find good drivers because of competition from higher-paying jobs. People relocating to the area don't come with a "recycling or trash collection ethic."	Targeting organics for material that is not backyard composted: food, contaminated paper waste. Complaints from customers about recycling other materials.	Inconsistent levels of service throughout County because of separate municipal collection contracts causes confusing messaging in education programs. Considering creating consistent guidelines within SWMP for municipalities to follow when contracts are renewed.
Other Comments						
		Maine has 4 WTE facilities – more than any other state		The solid waste community can learn a lot from each other. We need to continue to share information and ideas.	Start mobile HHW pickup 2007.	Single-stream study due November 2007, then possibly pilot program
		10 - 50% recycling rate depending on community				Considering disposal district to allow for taxing authority and other
		RSW does a small amount of recycling collection – siting 30-40 cy containers				
		RSW does not operate permanent HHW site; City of Portland shares its facilities				

EXHIBIT 13-2
Comparison of Other Regions' Solid Waste Advisory Committees

	Spokane Regional SW System, WA	Regional Solid Waste, ME	East Central SW Commission, MN	Fairfax County, VA	Windham SWM District, VT	Clark County, WA
		"Clean Green" is not a primary program for RSW - most of the municipalities have their own programs, and RWS does take some compostables occasionally at its landfill.				
		Communities in the area that are not members of RSW contract with a private hauler (Waste Management and Casella are the largest) to haul that waste to landfills.				

i Chapter 173-304 WAC http://apps.leg.wa.gov/WAC/default.aspx?cite=173-304.
ii Chapter 173-350 WAC http://apps.leg.wa.gov/WAC/default.aspx?cite=173-350.
iii Chapter 173-351 WAC http://apps.leg.wa.gov/WAC/default.aspx?cite=173-351.
iv Spokane Municipal Code 13.02.0112 http://www.spokanecity.org/services/documents/smc/?Section=13.02.0112.
v SRHD Solid Waste Handling Standards: http://www.srhd.org/downloads/safety_environment/SolidWasteHandlingStandards2004.pdf
vi Chapter 173-350-210 WAC http://apps.leg.wa.gov/WAC/default.aspx?cite=173-350-210
vii Chapter 36.58 RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=36.58
viii Spokane County Code 8.56 http://municipalcodes.lexisnexis.com/codes/spokaneco/index.htm.
ix CH2M HILL, Inc. 2006. Interviews of local County, City of Spokane, and Liaison Board representatives.
x Spokane Regional Solid Waste System, 2006. Interviews with representatives of regional solid waste systems.
xi Cascadia Consulting Group, 2006. Interviews with representatives of Washington State county SWACs.
xii Chapter 70.95.165 (3) RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=70.95.165
xiii Chapter 70.95.180 RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=70.95.180
xiv Chapter 70.95.090 http://apps.leg.wa.gov/RCW/default.aspx?cite=70.95.090
xv WUTC Cost Assessment Guidelines for Local Solid Waste Management Planning, 2001. http://www.wutc.wa.gov/webimage.nsf/0/527c002076feb44a88256daa00785bf6/$FILE/CA%20aug%202001.pdf
xvi Chapter 81.77 RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=81.77
xvii Chapter 36.58.100 RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=36.58.100
xviii Chapter 36.58.130 RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=36.58.130
xix Chapter 53.04.010 RCW http://apps.leg.wa.gov/RCW/default.aspx?cite=53.04.010

SECTION 14

Implementation

14.1 Introduction

The purpose of this chapter is to outline the actions and budget necessary to implement the recommendations contained in this plan.

14.2 Projected Needs and Financing for Solid Waste Handling

The RCW Section 70.95.101(3)(c) and Section 70.95.090(2) requires the solid waste management plan to contain a 6-year construction and capital acquisition program for public solid waste handling facilities, and a 20 year solid waste handling facilities needs assessment. These analyses are to address development and construction or purchase of publicly financed solid waste management facilities. The legislation further requires plans to contain a means for financing both capital costs and operations expenditures of the proposed solid waste management system. Any recommendation for the development, construction, and/or purchase of public solid waste management and recycling facilities or equipment should be included in this discussion. Financing operation expenditures should also be added to this section of the plan.

Capital and operating expenses to implement the Plan recommendations over the next 20 years are summarized in Exhibit 14-1. Actual budgets to carry out the recommendations will vary from year to year as specific programs are defined, and will depend upon availability of grant funding and budget approved by local governments.

14.3 Implementation Schedule

The implementation of the recommendations contained in this Plan will begin upon approval of the Plan by the jurisdictions and Ecology. The schedule for implementation is included as Exhibit 14-1. The schedule may be revised as the Plan is updated, and as the objectives and needs of the County and jurisdictions change. As indicated, for some recommendations, the programs have been or will be implemented within a few months, for other recommendations implementation will span many years.

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Solid Waste Education Programs	**New Programs**	**2008-2027**	**$12,500/1st year; $5,000/year thereafter**		**$12,500/1st year; $5,000/year thereafter**
	Product Stewardship Program	2008			
	Develop partnerships with private sector organizations to provide reuse and recycling options for select products	2008			
	Support product stewardship efforts	2007			
	Assess using purchasing power to influence markets for recovered materials	2008			
	Implement in-house waste reduction programs and practices	2007			
	Assess providing recognition for waste reduction successes	2008			
	Monitor and respond to Washington's electronic waste recycling law ESSB 6428	2007-2010			
	Support e-waste recycling activities within the private sector	2007-2027			
	Encourage food waste management by the commercial sector	2010			
	Provide recycling at public venues and events.	2007			
	Facilitate expansion of yard waste collection efforts.	2007			
	Facilitate expansion of voluntary curbside or drop-off collection of recyclables to rural areas	2007			

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Solid Waste Education Programs	**Existing Programs**	**2007-2027**	**$646,000**	$484,500 grants; $161,500 tipping fees	**$646,000**
	Continue waste reduction education programs				
	Monitor public education efforts to maintain the current success as well as increase the amounts of materials diverted for recycling and composting				
	Promote private waste exchanges				
	Continue existing business waste reduction program				
	Continue administration of waste/materials exchange	2007-2027	*$600*		*$600*
	Continue to encourage non-residential recycling through incentives, technical assistance, and recognition programs	2007-2027			
	Continue to work with SCAPCA to develop more comprehensive asbestos information and outreach strategies.				
	Continue to coordinate with SRDH in the distribution of educational materials for correct management of medical waste generated by residents				
	Encourage County and city purchasing programs for recycled tire products				
	Continue to promote and implement County and city fleet programs to reduce tire waste				
	Continue to include information on reducing tire waste and recycled tire produces in public education programs				
	Continue to promote the private sector to appropriately manage universal waste for recycling				
	Support markets for CDL/I by promoting reuse and recovery.				

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Solid Waste Education Programs	**Existing Programs**	**2007-2027**			
	Continue to provide outreach and education on options for the waste reduction or recovery of CDL/I				
	Continue to allow small quantity generators to bring UW to existing Small Quantity Generator (SQG) waste collection events for proper disposal	2007-2027	$5,000		$5,000
Recycling and Composting	Evaluate existing recycling programs to determine the feasibility of adding new materials or removing materials; assess single stream recyclable collection	**2007**	**$6,000**		**$6,000**
	Evaluate the current residential recycling system for potential improvements that will increase diversion at the lowest cost with the highest effectiveness				
	Continue to operate existing regional composting program	2007-2027	$2,501,000	$1,500,000 yw tipping fees; $1,001,000 sw tipping fees	$2,501,000
Collection	**Assess Collection Programs**	**2008-2013**	**$16,500**		**$16,500**
	Assess changing service levels to capture more households	2008-2013	*$4,000*		*$4,000*
	Assess contracting for recycling	2008-2013	*$4,000*		*$4,000*
	Assess alternative collection strategies	2008-2013	*$4,000*		*$4,000*
	Assess mandatory collection	2008-2013	*$4,000*		*$4,000*
	Assess centralized recycling locations for rural households	2007-2013	*$500*		*$500*

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Transfer Systems	Develop criteria for determining if the existing transfer stations need to be upgraded; assess needs for additional transfer stations.	2008	**$50,000**		**$50,000**
	Assess needs for additional transfer stations				
	Offer a reuse area at System facilities	2009-2027	**$50,000**		**$50,000**
	Continue to operate existing Transfer stations	2007-2027	**$5,765,000**	$5,765,000 tipping fees	**$5,765,000**
Energy Recovery	Maintain the WTE Facility to continue operations after bond retirement	2012-2027	**$15,000,000**	$12,900,000 electrical revenue; $2,100,000 tipping fees (2008 estimates)	**$15,000,000**
	Assess addition of a third boiler to the WTE Facility	2008	**$25,000**		**$25,000**
	Evaluate front-end processing of waste to improve recovery of material prior to incineration	2008	**$10,000**		**$10,000**
	Assess development of Malloy Prairie landfill site for ash disposal or sale of site	2008	**$15,000**		**$15,000**
	Assess sale of the WTE Facility to a private company or public energy utility	2008	**$25,000**		**$25,000**
Landfills	Investigate alternative transportation modes for waste transferred to an out-of-county landfill	2010	**$10,000**		**$10,000**
	Expand the Northside Landfill MSW cell for contingency/by-pass use	2008	**$3,500,000**		**$3,500,000**
	Examine post-closure care funding for County- and City of Spokane-owned landfills	2008	**$10,000**		**$10,000**
	Monitor developments in alternative processing technologies for municipal solid waste	2007	**$5,000**		**$5,000**

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Landfills	Assess development of an in-county MSW landfill for use after 2011, either public or privately owned and operated	2008			
	Assess long haul of municipal solid waste out of the County	2008	**$25,000**		**$25,000**
	Assess using both the WTE Facility and out-of-County Landfill for Disposal of MSW	2009			
	Continue Northside LF operations	2007-2027	**$884,000**	$310,000 NLSF tipping fees; $574,000 System tipping fees	**$884,000**
	Continue disposal/long-haul operations	2007-2027	**$6,000,000**	$6,000,000 tipping fees	**$6,000,000**
Miscellaneous Waste	**Emergency Response**				
	Develop emergency response plans regarding agricultural waste specific to available resources and operations and in coordination with local, state, and federal agencies	2007-2027	**$10,000**		**$10,000**
	Continue to plan and coordinate with the appropriate federal, state, and local agencies regarding emergency response plans involving human or animal diseases	2007-2027	**$10,000**		**$10,000**
	Establish locations for staging and storage of natural disaster debris	2007	**$1,000**		**$1,000**
	Continue with development of a Disaster Management Plan for emergency disposal activities that coordinates with federal, state, and local agencies' emergency plans.	2007-2027	**$1,000**		**$1,000**

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Miscellaneous Waste	**Research for New Technologies**				
	Continue to monitor research and investigate alternatives for ash utilization	2007-2027	**$1,000**		**$1,000**
	Continue to monitor potential changes and examine other alternatives for future disposal of biosolids and septage, if necessary	2007-2027	**$5,000**		**$5,000**
	Assess use of waste tires as feedstock for Waste to Energy Facility during seasonal low-volume periods	2007-2027	**$1,000**		**$1,000**
	County-wide CDL Incentive Programs				
	Assess development of CDL/I waste diversion specifications for County or municipal projects Assess use of recycled content material specifications for County or municipal construction and engineering projects Assess development of a CDL and Inert waste diversion ordinance Evaluate financial incentives, System partnerships, and policies to encourage recovery/recycling of CDL/I materials	2009	**$20,000**		**$20,000**
	Assess options regarding development of in-County CDL recovery facilities.	2008	**$75,000**		**$75,000**
Moderate Risk Waste	**New Programs**				
	Expand public education programs in underserved areas of County to reduce the generation of moderate risk waste.	2007	**$5,000**		**$5,000**

EXHIBIT 14-1
Spokane County 20-Year Solid Waste Handling Needs Estimate (2007 Dollars)

Program	Activity	Year	Cost per Year	Revenue; Funding	Total Cost per Year
Moderate Risk Waste	**New Programs**				
	Assess using mobile collection centers to target rural areas.	2009	**$1,000**		**$1,000**
	Assess providing on-call collection services for moderate risk waste.	2009	**$1,000**		**$1,000**
	Develop and distribute purchasing guidelines for re-refined lubricating oils.	2008	**$5,000**		**$5,000**
	Existing Programs				
	Continue to provide public education on alternative products. Continue to operate existing HHW facilities Continue to provide education and outreach to residents on the risks associated with mercury in the waste stream and to promote the availability of HHW collection sites and recycling businesses for alternate methods of processing along with proper handling and disposal of this waste Continue to provide business collection assistance for MRW	2007-2027	**$590,000**	$442,500 grant; $147,500 tipping fees	**$590,000**
Administration and Enforcement	Continue to operate existing litter control program	2007-2027	**$597,000**	$597,000 tipping fees	**$597,000**
	Establish a Regional Solid Waste Planning Committee and evaluate SW Administrative Design	2008-2010	**$150,000**		**$150,000**

NOTE: Costs in bold are total program costs; costs in italics are for individual activities included in total program costs.