

CHAPTER 9

SPECIAL WASTE STREAMS

This chapter discusses existing programs and facilities operating within Pierce County for managing special wastes. Special wastes are those solid wastes with special collection, handling, and disposal requirements and which are not generally part of the mixed municipal solid waste stream. The special wastes discussed in this chapter are:

- Construction, Demolition and Landclearing Debris
- Asbestos Contaminated Wastes
- Contaminated Soils
- Street Cleanings and Vector Wastes
- Biosolids
- Septic Tank Pumpings
- Tires
- Waste Oil
- Biomedical Waste
- Other Industrial Wastes
- Agricultural Wastes
- Green Mulch
- Hog Fuel Ash

This chapter is organized somewhat differently than the other chapters in this plan in order to provide self-contained discussions and evaluations of the handling methods for each special waste. Management of household hazardous waste

and small-quantity generator hazardous waste is discussed in a separate *Local Hazardous Waste Management Plan* for Pierce County.

9.1 Goals

Pierce County and the SWAC established the following goals for management of special wastes:

Goal: To develop guidelines and strategy for disposal of all special waste types.

Goal: To ensure that special wastes are managed in a manner that complies with all local, state, and federal regulations or best management practices; promotes and maintains a high level of public health and safety; and protects the environment.

9.2 Construction, Demolition & Landclearing Debris

Construction, demolition, and landclearing (CDL) debris results from construction and remodeling; demolition of buildings, roads, or other structures; and landclearing associated with new development activities.

Construction and demolition wastes typically consist of concrete, brick, wood, masonry, composition roofing, steel, asphalt, and gypsum wallboard. Landclearing wastes typically consist of dirt, mud, rocks, stumps, trees, and brush.

In Pierce County, the private sector has developed capacity for recycling, reuse, and disposal of this waste stream because it is primarily generated, collected and transported by private industry. As indicated in Chapter 3, there has been a growth in the number of businesses handling this material in Pierce County. Materials are being diverted to these facilities. Since 1993 there are

decreasing amounts in all categories in the municipal waste system. Tables 9.1 and 9.2 present information on private and public sector CDL handling facilities currently operating in Pierce County, respectively.

These tables also show the facility locations, the types of wastes accepted for disposal or recycling, and, when available, the estimated tonnage handled in 1996.

Table 9.1 Private Sector CDL Handling Facilities in Pierce County			
Facility (Owner) and Location	Facility Type	Type of Waste	1999 Tonnage
Fife Sand & Gravel 3120 Freeman Road East Puyallup	Inert Waste Recycling Facility	Concrete, woodwaste, landclearing debris, asphalt waste	Concrete/Asphalt - 1,230 tons Woodwaste - 6,115 tons
Foran Inert Waste Landfill (Jim Foran Company) 1635 Marine View Drive, Tacoma	Inert/Demolition Landfill & Recycling Facility	Concrete, Brick, Asphalt, Dirt, Mud	Asphalt – 6,571 yards Concrete – 4,766 yards Mix/Inert – 2,482 yards Mud – 10,096 yards Mud soup – 360 yards Dirt – 31,996 yards Brick – 253 yards
Hidden Valley Transfer Station and Composting Factory (Land Recovery, Inc.) 17925 Meridian E. Puyallup	Transfer Station, Composting Factory & In-Vessel Composting Facility	Demolition & landclearing debris, yardwaste, foodwastes, and other organic wastes (Includes all yardwaste for County’s Purdy Yardwaste Composting Facility)	Heavy Demolition – 738 tons Sheetrock – 702 tons Roofing – 5,833 tons Asbestos – 28 tons Tires – 42 tons Ash – less than one ton Composted organics (yardwaste, foodwaste and landclearing wood) – 60,029 tons
New West Gypsum Recycling Inc. 1321 54th Ave. East Fife	Gypsum Recycling Facility	Gypsum wallboard	> 20,000 tons
Organic Recycling Center (Land Recovery, Inc.) 10308 Sales Road S. Lakewood	Organic Waste Transfer Station	Landclearing debris, yardwaste	Yard/woodwaste – 13,747 tons
Purdy Topsoil and Gravel, Inc. (Owned by Randles Sand & Gravel) 5819 133rd Street NW Gig Harbor	Recycling Facility Topsoil Business	Brush, limbs, landclearing debris, concrete, soil, asphalt	Concrete – 2,690 cubic yards Brush & stumps – 7,396 cubic yards
Randles Sand & Gravel, Inc. 19209 Canyon Road East Puyallup	Inert Waste Recycling Facility	Concrete, asphalt, landclearing and woodwaste	Concrete – 322 tons Asphalt – 5,044 tons Dirt – 6,918 tons Woodwaste – 26,976 cubic yards Cinder blocks – 9,197 tons

Table 9.1 Private Sector CDL Handling Facilities in Pierce County (continued)			
Facility (Owner) and Location	Facility Type	Type of Waste	1999 Tonnage
Recovery I, Inc. 1630 East 18th Street Tacoma	Demolition & Woodwaste Recycling Facility	Woodwaste from construction/demolition and landclearing debris -- tree stumps, brush, limbs, laminated wood products, crates, debris, pallets, cedar shakes	Engineered wood – 14,700 tons Stumps/brush – 4,650 tons Demolition wood – 37,567 tons Clean wood – 2,207 tons
Rhine Marine Recycling Facility R.W. Rhine, Inc. 1621 Marine View Drive Tacoma	Inert Waste Recycling Facility	Brick, cement or asphalt concrete, masonry	Concrete/Asphalt/Rock – 57,106 tons
Tyler Street Inert Landfill (William Dickson Co.) 4925 South Tyler Street Tacoma	Inert Landfill	Permitted for inert wastes but presently not accepting	Dirt – 550 yards
Tucci & Sons 4224 Waller Road Tacoma	Inert Waste Recycling	Concrete, asphalt	Concrete/Asphalt – 14,969 tons Petroleum Contaminated Soils – 3,645 tons
University Place Refuse 2815 Rochester West University Place	Composting Facility	Yardwaste	Inactive
Waller Road Inert Waste Landfill (Wm. Dickson Company) 48th Street E. & Waller Road Tacoma	Inert/Demolition Landfill	Clean dirt, concrete, asphalt, rubble, concrete blocks, bricks, clean mud	Concrete – 32,564 yards Asphalt – 12,842 yards Glass – 431 yards Dirt – 26,654 yards
Walrath Trucking 7807 12th Avenue East Tacoma	Concrete Recycling Facility	Concrete (waste block from plants and concrete from mixer trucks)	15,772 yards
Weyerhaeuser Integrated	Recycling and Disposal	Industrial and construction woodwastes, landclearing debris, Petroleum Contaminated Soils (PCS)	Information not available in a form to represent Pierce County. Service area is I-5 corridor from Snohomish to Clark Counties.
Woodworth & Company, Inc. 2800 104th Street SW Lakewood	Inert/Demolition Waste Recycling	Concrete, asphalt, asphalt roofing, sandblast grit, foundry sands, brick/cedar shingles, non-asbestos shingles, glass, brick, masonry	Concrete/Asphalt – 214,686 tons Asphalt shingles – 19,311 tons Foundry sand – 2,708 tons Sand Blast Grit – 61 tons

Table 9.2 Public Sector CDL Handling Facilities in Pierce County			
Facility & Location	Facility Type	Type of Waste	1996 Tonnage
Department of the Air Forces McChord Air Force Base	Inert and Demolition Landfills	Demolition Debris (from military property only)	1,700 cubic yards
Purdy Transfer Station <i>Operated by:</i> Land Recovery, Inc. 14515 54th Avenue, Gig Harbor	Solid Waste Transfer Station	Sheetrock, Demolition and Landclearing Debris	All CDL included with totals at Hidden Valley Landfill

The following discussions address management practices for various types of CDL waste including: asphalt, concrete, lumber, and other woodwaste.

Asphalt: Asphalt waste results from the reconstruction of existing paved roads and may also contain gravel, crushed rock, dirt or concrete. Asphalt can be disposed at inert landfills; however, reclaimed asphalt pavement (RAP) can also be recycled for beneficial use.

Reclaimed asphalt pavement must be processed to meet material specifications which depend on the materials end use. Processing of RAP can occur in stand alone asphalt processing facilities; in facilities that accept asphalt in addition to other materials such as concrete, brick, or rock; or by mobile crushing and screening equipment at construction job sites.

The use of reclaimed asphalt pavement is becoming widely accepted and practiced. The material is extensively used in Washington State Department of Transportation (DOT) road maintenance and construction projects. Typical end use includes:

- Aggregate base course, backfill, and in asphalt;
- soil stabilization;
- pipe bedding;
- light weight fill;

- slope protection;
- shoulder aggregate;
- subbase; and
- soil modifier.

As Fort Lewis completes road repair projects, the old asphalt is ground and used to provide a better wearing surface on gravel range roads and tank trails.

As shown in Table 9.1, several private facilities for reclaiming asphalt and asphalt roofing materials are currently operating in Pierce County.

Concrete: Concrete waste is generated from road reconstruction and from the demolition of structures such as foundations, slabs, sidewalks, and curbs. Concrete waste, like asphalt, is an inert waste, but can be crushed to produce aggregates of specified sizes for beneficial reuse.

Recycled aggregate can be produced by mobile concrete crushers at the job site and at centralized facilities operating large stationary concrete crushers. Concrete processing produces some residuals, such as rebar metals, which are physically separated during the recycling process.

Recycled concrete aggregate (RCA) is widely accepted for use as aggregate, base course,

and fill. Common end markets for RCA include:

- road base aggregate;
- construction fill;
- crushed rock;
- asphalt pavement aggregate;
- decorative landscaping;
- erosion control; and
- shoreline protection.

Other uses include cement and lime manufacture, agriculture, metallurgical flux, and fillers and extenders. In some cases, recycled concrete aggregate used as a road base has been found to produce highly alkaline runoff and calcium carbonate precipitate, which can clog drainage systems.

As shown in Table 9-1, several private facilities that recycle concrete are currently operating in Pierce County.

Gypsum wallboard: Wallboard waste results from construction or demolition activities. When it is from new construction, wallboard waste is relatively free of paint, asbestos, or other substances that can contaminate wallboard waste from demolition projects.

Because wallboard can generate toxic hydrogen sulfide gas and acidic leachate, it is not defined as a demolition or inert waste and cannot be disposed in demolition or inert landfills. Disposal of wallboard waste is limited to landfills permitted to accept gypsum waste, such as a municipal solid waste (MSW) landfill. Similarly, waste wallboard is not suitable for incineration because the sulfur dioxide gas from the wallboard reduces the ability of incinerators to remove other gases.

There are two alternative management strategies for waste wallboard: land application as a soil amendment and recycling. Only clean construction wallboard free of metal pieces can be shredded and applied to

the land to improve the porosity of soils and add essential plant nutrients.

However, land applications must be correctly applied at specific agronomic rates. It can also be ground-up and used as bedding material for dairy cows and poultry. Land application requires a Solid Waste Permit. Wallboard waste coming from demolition activities should not be applied to the land because of the potential for contamination. Most demolition projects in Pierce County or Tacoma do not generate much gypsum wallboard, because the demolition is of older structures which used lath and plaster for wall construction.

Recycling is the State's preferred best management practice. The waste can be processed to remove paper and other contaminants, pulverised, and mixed with virgin gypsum and other additions to form new wallboard. Up to 95% of the waste gypsum can be recovered using this process.

In Pierce County, most of the waste wallboard is recycled because there is extensive private recycling capacity provided by one business. According to the 1995 Waste Audit, gypsum wallboard waste only makes up 1.7% of the County's total disposed waste stream.

Timber and woodwastes: Woodwaste is produced from a variety of activities including landclearing and demolition, and as a by-product of lumber production and manufacturing. Woodwastes are disposed, recycled, composted or reused depending on the quantity generated at a particular site and on whether or not the woodwaste has been chemically treated. As indicated in Table 9-1, there are a number of facilities handling woodwaste in Pierce County.

Painted and treated timber: Woodwaste from demolition sites often includes painted or treated lumber. In some cases, these materials can be recycled or reused. For example,

painted lumber can be ground and used as hog fuel in boilers as long as it does not contain lead-based paint. Typically, painted lumber can be disposed in lined municipal solid waste landfills, but is prohibited from disposal in inert/demolition landfills.

In contrast, creosoted timbers, which are treated to prevent rot, are not recycled although they may be reused. Creosoted timbers, considered by the State of Washington to be a hazardous waste, were at one time required to be disposed only in permitted hazardous waste landfills. However, the State has recently modified its regulations to allow disposal in lined municipal solid waste landfills with leachate collection systems or incinerated in an industrial furnace for energy recovery. Creosoted timbers are not accepted at inert waste landfills.

As with many other materials in the solid waste stream, the potential to generate contaminants depends on how the treated wood behaves in the landfill environment. The principal factor involved in how easily the wood treatment chemicals leach from the wood in the presence of water. There is limited data available for most available treatment products. As more knowledge is developed, disposal requirements may change.

Landclearing: Stumps, trees, and large amounts of brush typically result from clearing land for development. At one time, this material was typically burned on site. However, there is now a permanent ban on outdoor burning in incorporated and urban growth areas within Pierce County. Outside of these areas, burning requires a permit and is limited to burning only natural vegetation generated on the permitted site.

Stationary and mobile grinders are now frequently used to grind the debris into chips for use in landscaping and hogged fuel. Landclearing debris is also composted.

Manufacturing byproducts: Woodwaste generated as a by-product from the manufacturing of wood products typically includes sawdust, chips, shavings, bark, pulp, hogged fuel, and log sorting yardwaste. This material is not contaminated with chemical preservatives. It is most often landfilled when mixed in with other materials. Otherwise, woodwastes are typically recycled or reused as landscaping products, burned as fuel in a boiler, used as bulking agents for composted products, used as feedstock in the panel board industry, or chipped for the manufacture of various paper products.

Woodwaste is becoming a more valuable commodity in Washington with the decrease in the availability of trees in the forest industry.

Remaining alternatives: Much of the CDL waste produced in Pierce County is either recycled or reused by the private sector. Centralized private facilities exist in the County to handle most types of woodwaste and construction debris. There is substantial private facility capacity for all types of handling methods. The most recent waste characterization study conducted by Pierce County indicates that some of these materials continue to be disposed at the Hidden Valley landfill or transfer stations. Relevant findings of the characterization study include:

- CDL waste totals only about 1.5 percent and 5 percent of the single and multi-family waste collected by route-collection vehicles in Pierce County. Furniture and treated and untreated lumber account for nearly 70 percent of the multi-family CDL waste.
- CDL waste totals about 13 percent of the commercially generated waste collected by route-collection vehicles. About 60 percent of the commercially generated CDL is treated and untreated lumber. Carpeting accounts for 30 percent while

drywall and sheetrock each account for another 3 percent of the waste stream.

- CDL waste accounts for about 14 percent of the residential self-haul waste stream. Treated and untreated lumber and furniture account for about 44 percent of the residential self-haul CDL waste stream. Sheetrock and concrete account for about 38 percent.
- CDL waste accounts for about 71 percent of the commercial self-haul waste stream. Untreated lumber accounts for 45 percent of commercial self-haul CDL waste. Furniture and painted wood account for 25 percent.

Thus, it appears that any additional efforts to remove CDL wastes from the disposal waste stream should be targeted at self-haul wastes. If the County implements a long-haul system, there could also be a need for increased construction waste diversion to private recycling businesses. Recovery alternatives for self-haul CDL waste are discussed in more detail in Chapter 6 Solid Waste Processing Facilities.

9.3 Asbestos Contaminated Waste

Asbestos waste is any waste that contains more than one percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry. Airborne asbestos presents a considerable risk to human health and is therefore considered a hazardous air pollutant.

If asbestos wastes are managed in compliance with the asbestos management procedures of federal regulations (40 CFR 61, Subpart M), they are excluded from the requirements of Washington's Dangerous Waste Regulations (WAC 173-303) and can be disposed in a permitted MSW landfill.

The City of Tacoma Landfill is an approved asbestos waste disposal site within Pierce County (see Table 9-3); however, the City of

Tacoma Landfill only accepts asbestos waste generated from within the City of Tacoma limits. Most large amounts of asbestos waste are taken to Seattle. Very little asbestos contaminated wastes are disposed in Pierce County.

Currently, asbestos waste haulers are required to notify landfill staff 24 hours before delivering asbestos waste. The asbestos waste must be double-bagged in yellow asbestos bags and marked with asbestos label tape. The Puget Sound Air Pollution Control Authority's (PSAPCA) Asbestos Control Standard (Regulation III, Article 4) requires a permit for the removal, encapsulation, and disposal of asbestos for projects greater than 10 linear feet or 28 square feet. These procedures are subject to changeable conditions of State and Federal guidelines.

Needs and alternatives: If the County implements an in-county landfill alternative, asbestos handling and disposal procedures would have to be established. For a long-haul based disposal system, special provisions for collecting asbestos wastes are required. The operations for the Hidden Valley Transfer Station has storage standards that may suffice.

9.4 Contaminated Soils

Petroleum contaminated soils: Petroleum contaminated soils are soils contaminated with gasoline, diesel, or oil created from surface spills or from leaking underground storage tanks. Due to the high cost of disposing petroleum contaminated soils as solid waste or, in some cases, as hazardous waste, it is often preferable to treat the contaminated soil for reuse. Treatment processes include aeration, bio-remediation, hot-air extraction, and thermal hydrocarbon destruction. Treated soils can be used as landfill cover and construction fill and in landscaping. Table 9.4 identifies petroleum

Table 9-3 Asbestos Disposal in Pierce County	
Facility	Method
Hidden Valley Station	<ul style="list-style-type: none"> • Prepared for transport out-of-County
City of Tacoma Landfill	<ul style="list-style-type: none"> • Disposed with other MSW in current cell

contaminated soils recycling facilities operating within or planned for Pierce County.

TPST Soil Recyclers' facility in Pierce County accepts petroleum contaminated soils produced in Pierce County and from remediation projects statewide, and uses a thermal hydrocarbon destruction process. If this facility is operating at capacity, contaminated soils can be transported to a TPST facility in Portland, Oregon.

Approximately one out of ten petroleum contaminated soils remediation sites use vendors to perform on-site remediation. These vendors typically perform a hot-air extraction process where heated air is forced into contaminated soil mounds through perforated pipes. Volatized hydrocarbons in the air stream then pass through a high temperature incineration chamber where they are oxidized. This method is particularly effective in reducing diesel contaminants. Another treatment process involves aeration of the contaminated soil. This process is accomplished over a period of time sufficient to volatize the hydrocarbons contained in the soil and release them to the atmosphere. Tilling of the material is necessary to maintain the oxygen levels required for contaminant destruction. This process only works well for small quantities of contaminated soil because it is dependent on large storage and aeration areas.

A third treatment process is bio-remediation, which involves the addition of bacterial agents to the soil to enhance contaminant

destruction rates. It also works much faster than aeration. This can be accomplished through the addition of sludge, fertilizer and wood mulch, or other organic matter, nitrogen, phosphorous, microorganisms, and water.

Fife Sand and Gravel operates a bio-remediation facility. The reclaimed soil accounts for one quarter of the material that goes into their topsoil mix. Another bio-remediation facility near Buckley is under development by RPW Industries, Corp.

Thermal hydrocarbon destruction is a relatively new process which produces asphalt or gravel base materials. The contaminated soil is fed into a rotating ceramic cylinder inserted between the burner and dryer of a hot-mix asphalt plant. The soil is brought to a minimum temperature of 500°F to completely remove the hydrocarbons which volatize and burn. The treated soil is dropped into the dryer and mixed with virgin aggregate to cool the material down to the normal 300°F to 350°F range. The mixed material can then be made into asphalt or stockpiled for use as gravel base.

Mobile units utilizing the thermal hydrocarbon destruction process for treatment of contaminated soils are commonly available.

Petroleum contaminated soils can also be disposed at municipal solid waste landfills. Using petroleum contaminated soils for

Table 9.4 Pierce County Petroleum Contaminated Soils Recycling Facilities			
Facility	Treatment Process	Quantity Processed	Treated Soil Use
Fife Sand and Gravel 3120 Freeman Road East Puyallup	Bio-remediation		<ul style="list-style-type: none"> • Topsoil
Tucci & Sons 48 th Street & Waller Road Tacoma	Bio-remediation	N/A	<ul style="list-style-type: none"> • Topsoil
TPST Soil Recyclers of Washington 2800 104th St. Court South (Sales Road Area) Lakewood	Thermal Desorption	68,584 tons ¹ (1996)	<ul style="list-style-type: none"> • Topsoil and Fill • Gravel Base
Fort Lewis (Treats only soils from military property)	Bio-remediation, Aeration	30 tons (1996)	<ul style="list-style-type: none"> • Landfill cover material and landfilled
RPW Industries Corp. of Kirkland, WA Proposed Buckley facility (it has obtained a land use permit but is not yet built)	Bio-remediation	When built, the facility will treat 50-60,000 tons annually. An application for a solid waste permit has not been submitted to the Health Dept. The facility has an approved land use permit.	<ul style="list-style-type: none"> • Topsoil and Fill

¹ Only 16,608 tons of total came from Pierce County

daily cover material is an efficient allocation of valuable landfill space. A portion of the petroleum contaminated soils generated within the Tacoma City limits is used as a daily cover material at the City of Tacoma Landfill.

Currently, Pierce County has substantial capacity for handling contaminated soils with existing facilities.

Arsenic contaminated soils: Arsenic contaminated soils resulted from past operation of the ASARCO Plant located in both Tacoma and Ruston. Planning for the cleanup and management of contaminated soils is not a responsibility of the Solid Waste

Plan. The lead agency for this cleanup is the U.S. Environmental Protection

Agency, Region 10. Remediation has been divided into three areas (or phases): the Upland-Tacoma Area, the Smelter Site, and the Off-Shore area. Remediation will continue through 2005.

Remediation is currently underway in the Upland-Tacoma Area, which consists of residential and light commercial properties surrounding the smelter plant. Properties located within this area are sampled for arsenic contamination to determine if remediation is required. Properties may experience only partial remediation based on sampling results (arsenic and lead concentrations). The contaminated soils are

excavated, replaced with “clean” soil, stockpiled at the smelter site, and covered with plastic. The arsenic contaminated soils will be placed under the site’s area wide cap.

Remediation design for the smelter site has not begun and is scheduled to take more than two years. Site remediation will involve building demolition, capping the entire site, shoreline armoring to prevent slag erosion into Commencement Bay, replacement of the on-site surface water control system, and construction of an on-site containment facility.

Studies are currently being completed for the Off-Shore Area. Alternatives for remediation include capping, dredging, and natural recovery, or a combination of all three. Cleanup of this area cannot begin until remediation of the smelter site has been completed in order to avoid further contamination of off-shore areas from the smelter site cleanup.

Dredge spoils: In 1989, the Puget Sound Dredge Disposal Analysis designated open-water, unconfined disposal sites for clean dredge spoil sediments, two of which are located in Pierce County. These sites, although in use, do not allow for disposal of contaminated dredge spoils.

Contaminated dredge spoils, classified as a problem waste by WAC 173-304, Minimum Functional Standards for Solid Waste Handling, result from the dredging of surface waters where contaminants are present at concentrations not suitable for open-water disposal. Contaminated spoils must be disposed of at confined sites, which contain the dredged material so that migration of contaminants and adverse effects to the environment and human health are minimized.

A six-agency team is currently developing an action plan for multi-user contaminated

dredge spoil disposal sites from dredging navigation channels, waterfront development projects, environmental cleanup, and aquatic habitat restoration projects. The United States Army Corps of Engineers, the Washington State Department of Ecology, and the Washington State Department of Natural Resources are preparing a joint federal-state Programmatic Environmental Impact Statement which will evaluate the following disposal alternatives for contaminated dredge spoils:

- No action;
- Level bottom capping and confined aquatic disposal;
- Near-shore confined disposal;
- Upland disposal;
- Disposal in municipal solid waste landfills; and
- Multi-user fills.

Upland and municipal solid waste landfill disposal are under the authority of solid waste management regulations. Because of the capacity issues with Pierce County municipal solid waste landfills, disposal in any of the existing or potential future in-county landfills is not a practical option. Siting and permitting of an upland disposal site falls under the requirements of WAC 173-304. Since Commencement Bay, in Tacoma, is one of the primary generators of contaminated dredge spoils, one or more of the above disposal options may eventually be located in Pierce County. Bio-remediation might reduce the need or size of a disposal facility.

9.5 Street Cleanings and Vector Waste

Vector and “street maintenance” wastes include liquid and solid wastes collected during maintenance of stormwater catch basins, road ditch dredgings, and street

sweeping. Contamination of these wastes can vary depending upon adjacent land use, unauthorized discharges, accidental spills, and frequency of cleaning. The wastes can contain a variety of substances that present a threat to human health, wildlife, and the environment such as pesticides, fertilizers, fecal material, petroleum hydrocarbons, and metals. The wastes may also be harmless.

The Washington State Department of Ecology issued a draft *Best Management Practices for Management and Disposal of Street Wastes* (BMPs) in July 1995 which outlines recommendations for testing, use, and disposal/reuse or recycling of the wastes. The Tacoma Pierce County Health Department recommends routine testing to determine disposal and use options. Ecology is developing Facility Design Standards for facilities designed to handle these wastes.

At the present, vactor wastes can receive one of three general classifications in the state of Washington; clean fill, solid waste, and dangerous waste. Generally, the wastes can typically be considered solid waste and disposed at a permitted MSW landfill, often the simplest, but becoming more costly, method of disposal. Recycling involves incorporating the solids into other products, such as asphalt, cement, and concrete blocks. Or if the material tests out as harmless, it can be used as fill. In some instances, handling and disposal of the waste may fall under the Dangerous Waste Regulations (WAC 173-303) and must be handled through the processes established for dangerous waste.

Solids: For those vactor or street cleaning wastes which test as a solid waste without harmful residues which need treatment, end use options may include:

- road-subgrade or fill;
- commercial and industrial fill;
- portland cement manufacture;

- pre-fab concrete manufacture;
- daily cover or fill in a landfill;
- asphalt manufacture;
- treatment; and
- compost and artificial topsoil manufacture.

These end use options are outlined in Ecology's 1995 draft BMPs and therefore, may be subject to change. In addition, because a generator utilizes one of these end-uses it does not necessarily mean a solid waste permit is not required.

Technologies developed for remediating contaminated soils may also be applicable to treating vactor and street cleaning solids that have petroleum or chemical residues but not enough to the point that they need to be handled under the dangerous waste regulations. Potential treatment methods include bio-remediation, thermal desorption, and soil washing.

Bio-remediation uses natural and biological activity to degrade organic contaminants. One method of bio-remediation is composting, which involves mixing contaminated soil with organic material to enhance biological activity.

Thermal desorption destroys contaminants by heating the contaminated soils to temperatures between 300°F and 700°F. (However, gases emitted from the treatment process contain organic compounds which may require additional treatment.)

Soil washing involves agitating a mixture of contaminated material and water or solvent to remove contaminants. One concern with soil washing is that the residual wash solution requires further treatment or disposal.

Liquids: Vactor liquids are disposed in a liquids/solids decant station or liquids-only

treatment facility that discharges to a permitted wastewater treatment plant. The problem with the liquids is the potential for ground and surface water pollution. A decant station could provide additional pre-treatment if necessary before entering the wastewater treatment system.

Decanting liquids directly back into the catch basin or other structure they were removed from is allowed only if no other practical means of disposal are available, if the structure is remote from surface waters, and if the liquids will not leave the structure within 24 hours.

Facilities in Pierce County: At present, Fort Lewis built a vector waste dewatering facility which only accepts wastes from within the base's property boundaries. The facility has experienced design difficulties and isn't always capable of handling the wastes.

The City of University Place built a vector waste facility which became operational in 1999. Additional vector waste handling facilities are located in King and Thurston counties.

Current disposal practices by most municipalities and the Washington State Department of Transportation (DOT) in Pierce County include dumping the waste into pits, use as fill material, or use for repairing road shoulders.

Needs and alternatives: The state DOT and the municipalities have identified a need for facilities to handle vector waste and street cleanings. DOT worked with a private company on the design of such a facility but no agency is currently pursuing the development of a facility. Planning for these facilities is the responsibility of stormwater and transportation agencies.

When Ecology issues the facility design standard, the Health Department should work with municipalities and DOT to determine if there needs to be changes to methods for

handling the waste in Pierce County and to determine the need for facility capacity. It may be that some of these wastes can be handled through the existing composting or petroleum contaminated soils facilities.

9.6 Biosolids

The term "biosolids" refers to treated municipal sewage "sludge" that has been treated to meet regulatory requirements for beneficial land application. (Industrial "sludge" is waste from industrial processes which must be treated and recycled, or disposed in an appropriate landfill.)

Biosolids are a primarily organic, semisolid substance consisting of residual solids and water derived from the wastewater treatment process. It is generated from public or privately owned systems used to treat either domestic sewage (waste and wastewater from human or household operations) or a combination of domestic sewage and liquid industrial waste that has characteristics similar to domestic sewage.

Planning for the management of biosolids is the responsibility of individual municipal and sewer agency sewerage general plans. The Federal and State governments encourage recycling and utilization of biosolids and discourage their disposal as solid waste except in emergencies. EPA conducted substantial testing on land application of biosolids to adopt standards for land application. In response to EPA-established standards for biosolids management (40 CFR 503), the State adopted regulations for the use and disposal of sewage biosolids, WAC 173-308. The regulations establish application rates, limit pollutant quantities for land applied biosolids, protect ground and surface water resources, and provide for permitting systems. Both the Federal and State regulations are based on the principle that biosolids, applied correctly, are a safe

soil amendment. The Tacoma-Pierce County Health Department manages the permit process in Pierce County.

Land application sites are categorized by acreage size and maximum application rates. Each site is permitted by the Tacoma-Pierce County Health Department as “solid waste handling facility” under WAC 173-304 (with the new rules in draft regulations, WAS 173-308, the permitting process will change substantially). Municipalities and sewerage agencies must have a biosolids management plan for their wastewater treatment systems. In Pierce County, most sewerage agencies have biosolids management plans and programs based on land application. On the average, the Health Department issues 80 to 90 biosolids land application permits each year.

Pierce County has adopted a biosolids management program for the Chambers-Clover Creek Wastewater Treatment Plant that gives priority to land application. Biosolids are currently being applied out-of-county on suitable, permitted sites. The County’s long-term approach to biosolids handling is to create a Class A product suitable for all conceivable land applications beyond just permitted sites. Pierce County will build a soil manufacturing facility at the Chambers-Clover Creek Plant to produce such Class A material. The resulting soil amendment will be used to reclaim the gravel mine site adjacent to the treatment plant.

The City of Tacoma produces a biosolids product which is marketed as TAGRO.

Many of the sewer agencies in Pierce County are interested in composting biosolids rather than relying solely upon permitted land application sites.

Needs and alternatives: Although planning for how to handle biosolids is not a responsibility of solid waste agencies, there may be benefits for sewer and solid waste agencies to work together developing public or private capacity for co-composting of yardwaste and biosolids. The Pierce County Sewer Utility is already moving in this direction with the development of a facility for the Chambers Creek Wastewater Treatment Plant. Land Recovery Inc.’s new composting factory can compost biosolids.

The land application of biosolids is regulated by application rates, timing, and acreage through a permit system. Class A biosolids must not be applied at rates greater than agronomic rates or in a manner which contaminates surface water. Class B biosolids can also be applied to land but are subject to stricter access restrictions. Although when properly applied, biosolids are a safe soil amendment, the general public doesn’t always understand and opposition can occur. Recently, a private facility which composted biosolids for small communities and sewer agencies stopped composting biosolids, requiring these agencies to re-think their handling methods and to find other alternatives.

Pierce County could work with other agencies to continue to support additional public or private co-composting capacity and public outreach and education programs.

9.7 Septic Tank Pumpings

Septage is a “semisolid substance consisting of settled sewage solids combined with varying amounts of water and dissolved materials generated from a septic tank system.” Septage wastes are collected, handled, and disposed by private septic tank pumper haulers and sewer systems.

Table 9.5	Septage Disposal Sites
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Facility	Location	Function
IN-COUNTY FACILITIES		
City of Tacoma Treatment Plant No. 1	2201 Portland Avenue Tacoma, WA 98421	Septage Disposal
Northwest Cascade Septic Service	16207 Meridian Street Puyallup, WA 98373	Landscape Soils
OUT-OF-COUNTY FACILITIES		
METRO Treatment Plant	1200 Monster Road Renton, WA 98055	Septage Disposal
LOTT Treatment Plant	500 North Adams Olympia, WA 98501	Septage Disposal
Bio-Recycling	1506 Sergeant Road Rochester, WA 98579	Septage Disposal (Farm Application)

The Health Department has permitted approximately 30 haulers to pump and haul septage wastes in Pierce County. The majority of septic tank pumpings are disposed at the City of Tacoma’s Treatment Plant No. 1 or at the Renton Wastewater Treatment Plant in King County. The only other facility in the County that handles septage waste is Northwest Cascade Septic Service. Some haulers transport wastes out-of-county. In-county and out-of-county septage disposal and composting sites and their locations are listed in Table 9.5.

Septage wastes that have been fully treated by digestion, composting, lime stabilization, or other biosolids treatment processes that kill microorganisms are regulated as biosolids. Final disposal or land application must meet the Health Department’s biosolids guidelines.

9.8 Tires

Disposal and storage of used tires continues to be somewhat of a problem within Pierce County. Tires incorporated into landfills create problems because they do not readily decompose and usually resurface due to their resilient nature.

Because of the difficulty of handling tires, disposal sites charge a premium to those who wish to dispose tires. However, these

disposal fees tend to promote illegal dumping at non-permitted tire storage yards (which accept tires at little or no cost) and along roadsides. Unpermitted storage yards or “tire piles” can create fire hazards, water contamination from runoff, and public health problems associated with mosquitoes and rodents.

Until 1994, State funding generated from a one-dollar-per-tire tax assessed on new tire purchases aided in eliminating the larger illegal tire piles in the State. This tax had only a limited life since it was first imposed in 1989/90 and has no remaining funds. In Pierce County, the Health Department was able to cleanup and close down the largest, problem piles using these funds. The tires were chipped and the material recycled. Now, because the State’s authorization to assess the tax sunsetted, only the most potentially hazardous tire piles in the State are targeted for cleanup with the limited remaining funds.

Smaller piles still remain throughout the County and there is evidence that more tires are being illegally stored or dumped. One of the problems of the growing number of illegal piles is that once a small pile is dumped, they tend to grow in size as people see them and add to the pile.

Recently, used tire shops, which are licensed by the State to accept and transport tires for disposal or recycling, have opened in Pierce County. Although these tire shops are not licensed for tire *storage*, some have stored tires on-site for extended periods of time.

Chapter 8.84 of the Pierce County Code addresses the subject of tire storage yards. In order to legally store more than 200 tires, a permit must be obtained from the Pierce County Fire Marshall, although storage is never to exceed 30,000 tires at any one site.

Pierce County Development Regulations include zoning, landscaping, and buffering requirements for legally permitted tire piles. The State's Minimum Functional Standards, WAC 173-304-420(4), require that the operators of tire piles of 800 or more tires be required to:

- control access to the tire pile by fencing;
- limit the tire pile to a maximum of one-half acre in size;
- limit the height of the tire pile to 20 feet;
- provide a 30-foot fire lane between tire piles; and
- provide on-site fire control equipment.

There are collectors who will accept and will even pick up used tires for a fee, but collectors must be licensed by the Washington Department of Ecology. Private collectors have offered to provide the Health Department with a trailer for a fee at special tire collection events. Unlicensed collectors have been known to run a scam by collecting tires for a small fee and then illegally dumping the tires on vacant land they have leased, leaving the owner of the property with a mess to cleanup.

The Health Department is concerned about the growing number of stockpiled tires and

their un-permitted status. The Department is evaluating how many piles exist to determine what alternatives there are to reduce and prevent the growing number of piles and what funding sources might be available for cleanup and enforcement. Few of the existing piles are permitted or meet the adopted standards administered by the Pierce County Fire Marshal.

In earlier years, to prevent illegal tire piles and to provide means of collections other than at landfills, the Health Department conducted once or twice-a-year tire collection events. These events were expensive and did not provide a complete solution to discourage illegal dumping. With the advent of the tire tax and the State's licensing of tire shops to accept and transport tires, the Health Department ceased the collection events. Without a continuing funding source, as was provided for cleanup from the State tax on tires, the Health Department has no long-term funding sources to cleanup piles or to re-institute collection events.

Currently, several businesses in the Northwest provide recycling options for used tires. Used tire recycling includes shredding tires as an asphalt pavement additive, fuel additive in power plants, and in playgrounds and athletic surfaces. Used tires also can be used for artificial reefs, erosion control, highway guards, and dock bumpers. Increased retreading can also help ease the generation rate of used tires. Although the existing tire recycling alternatives do not completely solve the used tire problem, they do reduce the number of tires required for landfill disposal or storage and therefore decrease the potential for illegal or hazardous operations.

As discussed in Chapter 10, tire piles are just one part of the illegal dumping problem in Pierce County.

Needs and alternatives: There are three needs related to tire waste: to remove the existing illegal tire piles; to ensure that new illegal piles are not created and don't grow; and to enforce existing, adopted standards for storage.

Removing illegal piles and enforcement of storage standards is both a matter of policy priorities and allocation of money. The Health Department must identify how many piles there are and where they are located and work with the Fire Marshal and other agencies to have the piles cleaned up, and for permitted piles, to have the storage standards enforced. In addition to completing its study, the Health Department needs to identify what enforcement/policing barriers exist which prevent quick cleanup of illegally dumped piles by private property owners and what can be done to reduce these barriers and ensure standards are met. It may be that, like other illegal dumping enforcement issues, the legal system acts against enforcement. Illegal dumping is not a high priority for the legal system. A tougher citation and fine system may offer quicker enforcement rather than any existing criminal penalties.

Also, the Health Department needs to identify and acquire funding sources for enforcement, cleanup of those piles, and public education. One means to prevent tire piles is through stronger public education tactics about enforcement actions and existing disposal methods. Another measure to prevent tire piles from growing is by quick removal. A public education program could be broadly educational making tire dumping, like other illegal dumping, socially unacceptable. It could also target those geographic areas where it most often occurs and target those age groups who most often dump the tires. The educational program could work with all auto body and tire shops to broadcast the information.

The Health Department could also work with local community groups to take responsibility for cleaning up small piles and to quickly identify the piles before they continue to grow. Health could develop incentives for community groups to become involved and could coordinate these groups activities with the County's Adopt-A-Road Program. (Chapter 10 discusses illegal dumping issues and alternatives in more detail.) The Health Department could also work with the County and cities to encourage the State to consider re-instatement of the tire tax assessment to provide funding for cleanups.

Ultimately, however, it is a matter of whether or not there is local political will to set priorities for funding for enforcement, cleanup, and public education.

9.9 Waste Oil and Antifreeze

There are several waste oil and antifreeze collection locations within Pierce County. The Health Department maintains a list of businesses which collect used oil and antifreeze, and publishes a handout. Tacoma, Pierce County, and the Health Department work together to sponsor some collections sites and the County works with the Health Department on public information programs about used oil collection. Some private companies, such as auto parts stores, will accept residential used oil (typically up to 5 gallons) for no charge. Waste oil recycling companies will accept larger quantities but may charge a fee depending on quantity. Waste oil has been collected by the County, the City of Tacoma, and the Tacoma-Pierce County Health Department at household hazardous waste collection events. The City of Tacoma's transfer facility also collects used oil and antifreeze. Pierce County has recently

installed a collection site for used oil at the Thunfield Airport.

Currently there are no specific County regulations for the disposal of used oil. Used oil is burned as fuel in power plants (for energy recovery) regulated by WAC 173-303-515. Facilities exist which can re-refine the oil (such as the one located in British Columbia, Canada); however, at this time there is no capacity for the re-refinement process in Washington State. The primary concern with the disposal of used oil is illegal dumping and its impact on surface and ground water quality.

Illegal dumping is not considered a major concern in Pierce County since there have been few reports or complaints ever filed with the Health Department. The combined public-private collection system appears to provide adequate capacity.

9.10 Infectious or Biomedical Waste

Medical waste consists of infectious and non-infectious wastes generated by hospitals; laboratories; and medical, dental, and veterinary clinics. Residential users of syringes and other home health care materials also generate medical wastes. Non-infectious medical wastes require no special treatment and are part of the regular municipal waste stream. The approximately 5 percent of the medical waste stream that is considered infectious is regulated by the Health Department. The management system is designed to ensure that wastes are properly treated and no longer “infectious.”

Infectious or biomedical wastes contain pathogens or other biologically active materials in sufficient concentrations that exposure to the waste creates a significant

risk of disease to humans. Biomedical wastes include cultures; laboratory waste; needles and other sharps; and human and animal blood, tissue, and body parts. These wastes require special handling and disposal practices to protect the health and safety of both medical and solid waste disposal personnel.

Pierce County Code 8.38 regulates the storage, handling, treatment, and disposal of infectious wastes by the Health Department. Generators of biomedical wastes are responsible to provide proper on-site storage facilities, segregated from the non-infections wastes regulated for landfill disposal. Within seven days of storage, a certified hauler is required to remove the infectious wastes from the site. Each hauler is allowed to store the material for an additional 48 hours before transporting the wastes to a treatment facility.

Currently, four haulers have been authorized by the State and the Health Department to haul infectious wastes from the generator facility to a treatment facility. The certified haulers are Murrey’s Disposal, LeMay, Stericycle, and BFI. If the hauler has refrigerated storage facilities, they are allowed to store the infectious wastes for up to 30 additional days at temperatures below 45° F and for up to 90 days at temperatures below 32° F.

Treatment: Treatment methods for infectious wastes include incineration, autoclaving, and microwaving. Stericycle operates a microwave processing facility in Morton. BFI, located in Woodinville and Bellingham, operates an incinerator. Treated wastes are then hauled to an approved facility for final disposal. Technically, once infectious waste has been treated, it is no longer considered “infectious waste.” Hospitals located within the City of Tacoma transport their infectious waste to the City of Tacoma Landfill. Following receipt, the treated waste is buried

in a segregated portion of the landfill. Land Recovery Inc. has recently been permitted to operate an autoclave at the Hidden Valley site.

Fort Lewis had planned to incinerate treated infectious wastes at its incinerator. The treated wastes would have come from military installations such as Madigan Army Medical Center. Currently, infectious waste is autoclaved at Madigan and packaged and sealed in sturdy plastic containers for transport to be incinerated at a small incinerator on Fort Lewis at boiler plant No. 9. Without the incinerator, the military management system will have to develop other treatment and disposal options and may have to contract with private businesses.

Residential generators are currently required to containerize sharps prior to disposal. The Health Department has developed a brochure describing proper disposal practices for residential generators.

Inspections: The Health Department currently inspects hospitals, medical and dental clinics, and laboratories. There is an estimated 1,000 facilities in the Tacoma-Pierce County area that have the potential to contribute to the biomedical waste stream. Currently, only about 600 facilities are permitted and inspected by the Health Department in one year.

Needs and alternatives: In addition to ensuring that all facilities are permitted and inspected, the Health Department may need to expand the program to veterinary clinics. Some concern has been expressed about whether sharps (needles and other discarded implements) from operation of these clinics are being properly disposed. The Health Department could conduct a survey of veterinary clinics and their current practices within Pierce County to determine if

permitting requirements should be imposed in the future.

9.11 Other Wastes

Other industrial wastes: The Health Department monitors the disposal of questionable or unknown wastes through the Waste Disposal Authorization (WDA) program. This includes materials handled at the landfills and at other solid waste facilities. In 1992, approximately 215 waste disposal authorizations were issued; only 26 were issued in 1996. The decrease is largely a function of ceasing to require WDAs for asbestos disposal. Although industrial waste generators may obtain disposal authorization, landfill operators are not required to accept their wastes. The Health Department works with the various permitted solid waste facilities on WDAs to coordinate responses and provide consistency. Out-of county disposal alternatives for certain industrial wastes are at Olympic View Landfill in Kitsap County and Rabanco's Seattle transfer station. As indicated in Chapter 3, industrial sludges make up only a small portion of the Pierce County waste stream. This category was less than .2% of the total disposed.

Industrial waste pretreatment programs implemented by Pierce County, the City of Tacoma, and other operators of wastewater treatment plants regulate the discharge of industrial wastes to wastewater treatment facilities so that only those wastes which can be processed at the treatment plants enter the sewage collection system. Agencies have full-time inspection programs in place. The existing Tacoma and County treatment plants now accept pretreated liquid industrial wastes and operate secondary treatment processes.

Agricultural wastes: Wastes produced on farms such as manure, crop residue, and animal carcasses are defined as agricultural wastes by the Minimum Functional Standards

(WAC 173-304). On-farm disposal of agricultural wastes is not regulated under solid waste laws.

Crop residue waste is usually returned to the soil at the end of the growing season. Pollution and waste are possible with agricultural wastes, but they are not (generally) within the scope of the Solid Waste Management Plan.

Farm animal manure and other agricultural materials are also beneficial when reused properly as a resource, rather than as a waste. Generally, the manure is stored on site and eventually applied to farmlands as fertilizer. The major concern for manure processing and application is contamination of surface water. Ecology investigates existing manure practices and enforces proper application rates to minimize surface and ground water impacts. The Pierce County Conservation District works with farmers to develop Best Management Plans for their farming operations.

Animal carcasses can be recycled at rendering plants, which derive useful products from the animal remains. In addition, carcasses can be disposed in landfills or buried on the owner's property without creating a health hazard. Because there are existing in-county rendering facilities, implementation of a waste export system should not affect disposal of dead animals.

Recently, there have been a number of questions raised in the media about the regulation of fertilizer with complaints by farmers that hazardous waste chemicals from industry are not regulated sufficiently and are being included in some fertilizer products. Complaints have also been made about crop damage. The issues center around whether or not existing EPA standards have adequately tested fertilizer ingredients for long-term health implications.

According to Ecology, some "testing of fertilizers in Washington showed that the levels of toxic metals are well below the limits set for the land application of biosolids. However, there are unresolved questions about comparing fertilizer products to biosolids in that the forms of the metals in biosolids may be taken up by plants differently than the forms of metals found in fertilizer products. Because of this, the biosolids standards may underestimate the plant uptake of metals from fertilizers."

Other issues have been raised about overuse and improper application of fertilizer and the long-term effects on the land. The Washington State Department of Agriculture is working with the Ecology to sample and analyze a variety of fertilizers. The two departments may recommend legislation which will strengthen the review process for products applied to farmland.

Needs and alternatives: Washington has guidelines governing the testing and application of foodwaste and yardwaste compost and there are Federal and State standards for land application of biosolids and biosolids compost. All of these are based on the principle that the product must be proven safe as a soil amendment. It appears that fertilizer has no comparable standards or regulations. Requiring that fertilizer producers undertake equally rigorous testing and meet the same stringent standards that organic composts meet, is one alternative to ensure ground and surface water protection. If the State moves in this direction, the County could work with the State on public outreach and education through the umbrella of the watershed management plans' policies and public outreach programs.

Another alternative from a solid waste management point of view, and one the County may wish to promote or support, is the use of regular compost applications on

farmland as a way to cut back on the use of pesticides and synthetic fertilizers. Compost can be used as a soil amendment to build-up depleted soils. Various studies indicate that compost “tea” can be used to prevent some fungus conditions such as potato blight. The composting of manures may also offer better management practices to prevent surface water impacts.

The County could support composting of manures and the use of compost on farmland through working with the State and other agencies on public education and with permitting agencies to support the development of composting facilities and composting practices on farmland in Pierce County.

Green mulch: In Pierce County, green mulch is yardwaste collected from Pierce County’s yardwaste curbside pickup or drop-off programs. Currently, Land Recovery, Inc. processes the yardwaste (grinds and screens) at the Hidden Valley transfer station. One of the reasons this is done is to extend the seasonal composting capacity for the County’s yardwaste composting facility.

This processed yardwaste, consisting primarily of grass clippings, is composted aerobically for 3-5 days prior to being delivered to farmers’ fields for application.

Green mulch processed during the months of March through September contains significant amounts of nitrogen that is utilized by growing plants. In addition, the organic matter in green mulch improves soil quality.

After conducting research on green mulch, the Washington State University Cooperative Extension Office in Puyallup developed a *Management Plan for Green Mulch in Agriculture*. The document established best management practices for managing LRI’s

composted yardwaste to agricultural lands in Pierce County.

Under the Environmental Excellence Program authorized by the Legislature in 1997, LRI applied for and received approval from Ecology to land apply GreenMulch without the need for a solid waste permit. The agreement between Ecology, LRI, participating farms, and effected counties spells out precise agronomic applications rates and other operating procedures for the use of GreenMulch on farms. In effect, GreenMulch is not considered a “solid waste” when applied under the agreed upon conditions.

Hogged fuel ash: Typically, certain types of hogged fuel ash are acceptable for co-disposal with municipal solid waste and are regulated as a solid waste by the Health Department. Ash derived from woodwaste and related inputs (paper, cardboard, etc.) is exempt from the Dangerous Waste Regulations (WAC 173-303) if it is designated as hazardous based solely upon a high pH.

If it is designated for any other reason, such as elevated metals levels, it is still a dangerous waste and must be disposed in a designated hazardous waste landfill. Ash derived from other forms of hogged-fuel is subject to all aspects of the Dangerous Waste Regulations, pH and all. Only in those instances where the ash is not a solid waste would it leave the purview of the Health Department.

The Health Department can require testing by the generator but does not perform analyses. Characterization of a waste is the responsibility of the generator. No needed alternatives have been identified

9.12 Opportunities

Although most special wastes are not a disposal problem in Pierce County, some opportunities exist for construction and demolition wastes, asbestos, vector/street cleanings, biosolids, tires, and agricultural wastes. These opportunities are summarized in Table 9.6. There are several inert/demolition landfills located in Pierce County; however, as a landfill space becomes a scarce resource, other options for material recycling and reuse will become increasingly needed and required.

Technologies have been developed to recycle and reuse these materials to create new construction materials. Also, companies have begun to offer services for collection of these materials so they do not end up in the mixed municipal solid waste disposal stream.

If Pierce County implements a waste export program, new collection and handling needs may arise with respect to construction and demolition wastes, asbestos, and other special wastes. For example, considering the cost of long-haul, it may become economical to recycle or reuse more construction and demolition waste. Without an in-county landfill, transfer facilities that typically do not accept asbestos waste may be required to do so.

Table 9.7 compares each special waste management alternative with the evaluation criteria.

Table 9.6 Special Waste Management Alternatives				
Additional Management Strategies	Method	Measurement Methods	Environmental Impacts	Financial Impacts
CDL --- divert additional CDL from municipal solid waste stream	Target commercial self-haul with public education program. Modify transfer stations for source-separation.	<ul style="list-style-type: none"> Waste Characterization Audit evaluation of CDL waste stream. 	None	Modest investment in transfer facility infrastructure. Public outreach program can be incorporated within existing budget.
Asbestos -- Change in handling system if all waste shipped out-of-county.	Health Department to determine handling methods and disposal procedures. Provide for receipt of properly packaged asbestos waste at transfer facility.	<ul style="list-style-type: none"> Handling methods and disposal procedures in place. 	None	Within scope of Health Department's assigned duties. Possible modest investment at transfer station.
Street Cleanings and Vector Wastes --- establish and implement changes to handling methods as necessary.	Health Department and DOT to determine appropriate handling methods and identify if a need for a facility exists. If a facility is needed, all jurisdictions, including DOT, could coordinate and work with private industry to develop a facility to serve all jurisdictions In Pierce County.	<ul style="list-style-type: none"> Management system established and implemented. Facility built and operating, if needed. 	None	Management system within scope of Health Department's assigned duties.
Biosolids Co-composting	Pierce County to work with other agencies to support development of public or private co-composting facility and through public outreach and education.	<ul style="list-style-type: none"> Public outreach and education programs. Public and/or private co-composting capacity in place. 	Co-composting facility may have impacts which must be evaluated on a site-specific basis through established permit regulations.	Potential increase in costs, however, co-composting may result in savings over separate handling and processing of wastes.
Tires --- remove illegal piles and enforce storage standards.	Remove existing illegal tire piles; enforce existing pile standards and identify and acquire funding; public education programs; work with other municipalities and State for reenactment of Tire Tax or develop other funding sources.	<ul style="list-style-type: none"> Decrease in number of existing illegal tire piles 	Net positive impact	Additional cost to County or Health Department if responsible parties lack financial resources to remove/mitigate piles.

Table 9.6 Special Waste Management Alternatives				
Additional Management Strategies	Method	Measurement Methods	Environmental Impacts	Financial Impacts
Infectious Waste --- expand program to veterinary clinics.	Health Department survey of veterinary clinics and identify management requirements or permitting if necessary.	<ul style="list-style-type: none"> • Program in place to survey veterinary clinics. 	None	Some cost to Health Department to expand existing program.
Agricultural Composting -- - support.	Support for agricultural composting and Green Mulch program.	<ul style="list-style-type: none"> • Program in place. 	None	Potential additional cost over use of conventional fertilizer.

9.13 Recommendations

Industrial waste outreach program

- #9-1** Develop programs or activities to inform industrial waste generators about issues relating to disposal of industrial wastes through the solid waste management system.

Street cleanings and vector wastes

- #9-2** The Tacoma-Pierce County Health Department and local public works agencies should work together to develop and implement appropriate standards for the disposal or treatment and utilization of street cleaning and vector wastes.

- #9-3** Generators of street cleanings and vector wastes are encouraged to manage their wastes through either composting or petroleum-contaminated soils facilities to the degree that their wastes are compatible with those facilities. Landfill disposal should be a backup option.

- #9-4** Pierce County should consider a separate facility approach only after Ecology issues the Facility Design Standards, and only after determining that none of the existing options (composting; PCS; landfill; or a new processing technology that becomes available via Chapter 6 recommendations) can appropriately manage these wastes.

Woodwaste and CDL

- #9-5** Pierce County and other local governments should promote the source separation and recycling of recyclable CDL wastes from the commercial waste stream. Additionally, transfer stations open to the public should be modified to facilitate woodwaste and CDL recycling for residential self-haul customers.

- #9-6** The Tacoma-Pierce County Health Department should ensure that regulations and enforcement programs are in place for the permitting of woodwaste handling systems. The Pierce County Solid Waste Division should develop an informational program to inform woodwaste generators of their disposal and recycling options.

- #9-7** Pierce County and the Tacoma-Pierce County Health Department should support Ecology and other stakeholders to reduce regulatory impediments to woodwaste recycling and utilization, to the extent consistent with assuring protection of human health and the environment.

Biosolids

- #9-8** Pierce County and other local agencies should collaborate in the development and implementation of biosolids co-composting facilities.

Septage

- #9-9** Pierce County should investigate accepting septage at the Chambers Creek Wastewater Treatment Plant.

Agricultural waste and animal manures

- #9-10** Pierce County should promote the use of composts on agricultural lands to minimize the fertilization and pesticide requirements, and to encourage the composting of animal manures.

Tires

- #9-11** Local governments should request the Legislature to reinstate or devise a new funding system which would provide state grants to local governments for the cleanup and recycling of existing tire piles, and for the enforcement of disposal restrictions.
- #9-12** Pierce County and the Tacoma-Pierce County Health Department should work together to develop a stricter enforcement and penalty system to discourage illegal tire dumping and sham recycling.
- #9-13** Pierce County and the Tacoma-Pierce County Health Department should work together to develop methods to encourage community groups to identify and clean up small tire piles before they become large and to develop educational programs about proper methods to dispose of tires so as to prevent illegal dumping.

Infectious or Biomedical wastes

- #9-14** Pierce County and the Tacoma-Pierce County Health Department should work together to assess the risks and issues presented by medical wastes from veterinary sources and animal wastes (other than manures) from other sources, and develop appropriate regulatory and management programs if necessary.

Prosecution

- #9-15** Agencies should work together to develop effective prosecution of illegal tire haulers and illegal disposal site operators.

Dredge spoils

- #9-16** Pierce County and other governments should monitor proposals for upland dredge disposal sites; consider environmental risk; and ensure that dredge disposal, if proposed, occurs in a manner consistent with the letter and spirit of this Plan.