



Chapter  
**8**

## Construction, Demolition, and Landclearing Debris and Special Wastes

The solid waste stream in King County includes two categories of wastes that may require special handling or may be unsuitable for disposal directly into a transfer station or landfill because of their physical characteristics or composition. This chapter deals with these two broad categories of wastes.

The first category discussed is construction, demolition, and landclearing debris, referred to as CDL. CDL is the waste generated primarily by construction and land development companies who build, remodel, and demolish structures and clear land for development. The second category of waste is referred to as special wastes and includes contaminated soils, asbestos-containing materials, treated biomedical wastes, treatment plant grit and vector wastes, agricultural wastes, and tires. If special clearances for disposal are required, they are issued in accordance with various federal, state, and local regulations and policies. Chapter 9, *Enforcement*, describes in more detail the waste clearance program for special wastes disposed at King County facilities.

CDL and special wastes have specific and unique handling and disposal requirements. In this chapter, CDL is discussed first, with recommendations provided at the end of the discussion. Special wastes are described in the section that follows. Specific recommendations for special waste handling before and after the Cedar Hills Regional Landfill closes are summarized in a table at the end of the section, along with any further studies needed to make a final determination.

## Construction, Demolition, and Landclearing Debris (CDL)

As stated earlier, CDL is generated by construction and landclearing activities. Historically, CDL waste has been collected, transported, and disposed largely by private-sector solid waste management companies. With the adoption of the *1989 Comprehensive Solid Waste Management Plan*, the County and the cities reaffirmed the basic policy of leaving the responsibility of CDL waste handling to the private sector. However, government's role was expanded to ensure that CDL waste handling services were available region-wide through a County-controlled procurement process. Until 1991, there were two private landfills in the County – Newcastle Demolition Waste Landfill and Mt. Olivet Landfill – where CDL wastes could be disposed. Both landfills reached maximum capacity and were closed by the spring of 1991. When these landfills closed, King County began taking CDL waste at its transfer stations and the Cedar Hills Regional Landfill on a temporary basis. Because of the heavy and bulky nature of CDL waste, it requires special handling and safety measures. The County's facilities were not designed to handle this type of bulky waste.



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CDL waste requires special handling because of its heavy and bulky nature

Knowing that the two private landfills would not provide long-term CDL waste disposal capacity for the region, the County began to examine alternatives for its handling. In December 1989, the County issued a Request for Proposals from private-sector waste handling operators for the collection, handling, and disposal of CDL wastes. The County's objectives were to ensure a satisfactory level of CDL collection and disposal service, promote private enterprise in CDL handling, and maintain competition for the benefit of the public. In addition, the County was committed to recycling and, therefore, sought to increase the amount of CDL materials being recycled.

In the early 1990s, two private-sector solid waste management companies – Waste Management, Inc. and Regional Disposal Company (a subsidiary of Rabanco) – signed contracts with King County to handle the County's CDL waste and recyclables. These identical contracts, which extend through 2004, require each company to provide a minimum handling capacity of 25,000 tons of CDL wastes per month. To accommodate this requirement, each company operates two receiving facilities in King County (shown in Figure 8-1).

Figure 8-1. Locations of CDL Handling Facilities in King County



©CDL Handling Facility

King County banned CDL waste at its facilities in 1993, except for small amounts delivered to County transfer stations by residential customers. These small amounts are accepted only when delivered in vehicles of pick-up size or smaller. The loads typically contain gypsum wallboard, dimension lumber, treated or painted wood, roofing and siding, and stumps. Loads of waste where the total weight of the load does not contain more than 10 percent CDL are also accepted along with mixed municipal solid waste (MMSW) at the transfer stations.

The private solid waste management companies prepare monthly reports on the volume of CDL disposed at their facilities. These data are summarized by year in Table 8-1.

**Table 8-1.** Estimated Volumes (in tons) of CDL Waste Disposed at the Private Facilities

Facility	1994	1995	1996	1997	1998	1999
Waste Management, Inc.						
Eastmont	4,500	11,400	23,200	34,700	36,900	31,200
Argo Yard	1,700	2,200	5,200	10,000	8,000	13,700
Regional Disposal Co.						
Third & Lander	49,900	49,500	43,500	53,400	65,300	75,200
Black River	84,300	68,400	69,100	77,700	77,600	89,300
<b>TOTALS</b>	<b>140,400</b>	<b>131,500</b>	<b>141,000</b>	<b>175,800</b>	<b>187,800</b>	<b>209,400</b>

Note: Volumes do not include clean wood and other recycled material

Data on the amount of CDL waste delivered to the County’s transfer stations along with MMSW are collected during the Solid Waste Division’s waste characterization surveys. The most recent survey results (Cascadia 2000; also provided in Appendix A-2) indicate that approximately 11 percent of the MMSW stream entering County facilities contain materials found in CDL waste.

In keeping with state and County goals and policies for waste reduction and recycling, the preferred method for managing CDL is to separate out the recyclable or reusable portions of the CDL waste stream and reduce the overall amount of CDL waste disposed. Separation can occur at a construction or demolition site, at one of the CDL receiving facilities, or at a landfill. Based on information received from Regional Disposal Company and Waste Management, they each accept mixed CDL at their respective receiving facilities, separate out some recyclables for processing, and transport the remainder to their respective landfills in Klickitat County, Washington (Roosevelt Landfill) and Gilliam County, Oregon (Columbia Ridge Landfill) for disposal. Waste Management’s Argo Yard facility accepts only containerized loads of mixed CDL, which come from large construction/demolition sites or from their Eastmont transfer station. These CDL loads are transported directly to the Columbia Ridge Landfill for disposal.

While the 1992 *Comprehensive Solid Waste Management Plan* identified waste reduction and recycling as the primary method of managing CDL, it is difficult to measure how much is actually being done. For example, there are no data on the tons of CDL recycled at construction or demolition job sites and taken directly to a processor. The CDL handling companies are required by Public Health – Seattle & King County to report data to the Health Department on the tons of CDL materials recycled at their facilities; however, those data include tonnage from the City of Seattle and other sources. Isolating the amount that comes only from the area governed by this Plan is a rough estimate. For 1998 and 1999, the percentage of our CDL waste stream estimated to have been recycled was 3.3 and 5.1, respectively. Again, these figures reflect only a fraction of the recycling activity that may be occurring.

This following sections set out the County policies for CDL handling followed by the issues and recommendations for its handling in the future.



Concrete and dirt from a demolition project

### County CDL Policies

The County policies for handling CDL are as follows:

**CON-1.** The county shall ensure a satisfactory level of CDL transfer and disposal in the county, and encourage and expand recycling of CDL.

**CON-2.** The county shall continue to limit CDL disposal as provided in the King County Code, the existing CDL contracts and the Solid Waste Acceptance Policy at least until May 31, 2004 when existing contracts expire.

**CON-3.** The county should support private efforts to reduce the overall amount of CDL being disposed of in the county solid waste system by encouraging separation of recyclable or reusable portions of CDL from the waste stream. Separation can occur at a construction or demolition site or at one of the CDL receiving facilities, or at a landfill.

**CON-4.** The county should encourage a CDL management system that maximizes reuse and recycling and provides for the safe and efficient disposal of the remaining CDL.

**CON-5.** In keeping with state and regional system goals and recommendations for waste reduction and recycling, the preferred method for managing CDL is to separate out the recyclable or reusable portions of the CDL waste stream and reduce the overall amount of CDL waste disposed of in the county's solid waste system. Separation can occur at a construction or demolition site, at one of the CDL receiving facilities, or at a landfill.

**CON-6.** The executive in consultation with the Solid Waste Advisory Committee and appropriate staff from cities in the region shall propose to the council alternatives for future handling of CDL that will best suit the region as a whole. A goal of the preferred alternative should be to increase the amount of CDL recycled from work and disposal sites. The council shall approve the CDL handling program by ordinance.

**Issues**

Currently, few studies have been conducted on the CDL waste stream, so there is little information on the specific composition of the CDL wastes (for example, wood vs. gypsum), who generates what quantities, and how much is being recycled. There is also limited information about the extent to which the mixed CDL waste stream can be recycled, the facilities that process CDL for recycling, and the existing and potential markets for recyclable CDL. These data are key in developing a CDL management system that maximizes reuse and recycling and provides for the safe and efficient disposal of the remaining CDL.

**Table 8-2.** Projections of Mixed CDL Disposal through 2020

Year	CDL (tons)
2000	202,000
2005	215,000
2010	234,000
2015	242,000
2020	256,000

The County’s CDL waste contracts are scheduled to expire in 2004. The County is in the process of gathering CDL waste disposal information to help plan for the region’s future CDL handling needs. Table 8-2 shows the estimated annual volume of CDL expected to be disposed at the private facilities in 5-year increments through 2020. These projections are based on data for past years and assume CDL contracts remain in place through the planning period. Appendix A-1 provides more detailed information on the methodology used to develop these projections.

One option for ensuring adequate CDL handling capacity in the future would be for the County to take CDL back into its waste handling system after the present contracts expire. One issue to be considered under this scenario is the effect on the County’s structural facilities. Information from 1991 to 1993, when the County accepted a substantial portion of the regional CDL waste stream, indicates that there is more wear and tear on facilities that accept CDL, due to the bulky and heavy nature of the wastes. CDL does not compact as well as MMSW, so disposing of it at the Cedar Hills Regional Landfill could quicken the pace at which the landfill reaches capacity.



**Recommendations for Further Study**

Because of the paucity of existing data about the regional CDL waste stream and its generators, the Plan directs that targeted studies be conducted before the existing CDL contracts expire. Results of these studies will be used to evaluate alternatives for its future handling. The goal is to complete the studies by 2002 so that a decision can be made on an alternative or blend of alternatives prior to expiration of the existing contracts in 2004. The evaluation and selection of a management alternative will take place with regional participation. Once data on the alternatives are available, the Solid Waste Division will meet with the Solid Waste Advisory Committee and city solid waste coordinators to determine which alternative would best suit the region as a whole. Criteria that will be used to choose the final alternative include the potential to increase the amount of CDL that is recycled, accessibility of the disposal and recycling facilities, and ability to maintain affordable disposal rates.

The most important element of any alternative chosen will be to increase the amount of CDL recycled from both work sites and disposal sites. The four alternatives to be evaluated are as follows:

**Alternative 1: Renew and Renegotiate Current Contracts**

Current contracts allow for their renewal after the 2004 expiration date. Renew contracts, but renegotiate those contract conditions that deal with recycling and ways to make service improvements.

**Alternative 2: Current Contracts Expire; No New Contracts Negotiated**

- Scenario A – Allow the existing contracts to expire in 2004, accept CDL at County facilities, and include CDL in the waste export contracts when Cedar Hills reaches its permitted capacity. Consider establishing a dedicated CDL receiving facility to actively promote more recycling.
- Scenario B – Allow the existing contracts to expire in 2004 but continue to prohibit most CDL disposal at the County’s facilities. CDL would flow to private-sector facilities without any contractual ties with the County governing capacity and other requirements.

**Alternative 3: Limited Disposal at Transfer Facilities**

Negotiate new long-term contracts that provide for expanded recycling of mixed CDL and the transfer/disposal of the residual, non-recyclable CDL. Loosen restrictions on CDL disposal at the County transfer facilities to allow small commercial vehicles to dispose of CDL.

**Alternative 4: Contract CDL Disposal**

Negotiate new contracts through 2012 that provide for expanded recycling of mixed CDL and the transfer/disposal of the residual, non-recyclable CDL. Thereafter, include CDL in the County’s waste export contracts with provisions for a continuing emphasis on mixed CDL recycling.

Information that the Solid Waste Division is compiling over the next two years to allow for an informed regional decision includes:

- Characteristics of the CDL waste stream, including composition, origin, and amount of the CDL generated, disposed, and recycled
- Characteristics of CDL waste present in the County’s MMSW stream
- The geographic flow of CDL generated in the County – the locations where it is generated, transferred for disposal, or recycled
- The processing methods and end uses for CDL that is recycled
- The types and amount of CDL currently disposed that could be recycled
- How generated CDL is collected and transferred to CDL handling facilities
- Types of vehicles that haul CDL at public and private transfer stations and their average tonnage
- Opportunities for and barriers to increased CDL recycling
- Potential impact on County facilities of accepting CDL materials, including safety concerns
- Economic and operational feasibility of a separate publicly owned and operated CDL recycling and transfer facility
- Cost, rate impacts, and other factors that might affect the alternatives

## Special Wastes

Special wastes include contaminated soil, asbestos-containing materials, treated biomedical wastes, treatment plant grit and vector wastes, agricultural wastes, tires, and other wastes. All of these types of special wastes are currently accepted at County facilities, though in some cases only at the Cedar Hills Regional Landfill. With few exceptions, all of the special wastes require clearance under various waste acceptance policies or regulations.



This section first sets out the County’s policies on special wastes followed by brief discussions of each type of special waste, describing how it is generated and how it is currently handled within the regional system. Special wastes constitute a very small portion of the overall waste stream at County facilities, and the procedures for their disposal are, in many cases, defined by regulation.

Recommendations for their handling until and after the Cedar Hills Regional Landfill closes are summarized in Table 8-3 at the end of this section, including any further studies needed to make a final decision on long-term handling.

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*Wastes may require special handling procedures to protect public health and the environment*

### County Special Waste Policies

The County policies for handling special wastes are as follows:

**SPW-1.** The county shall accept contaminated soil only at the Cedar Hills regional landfill. After the Cedar Hills regional landfill closes contaminated soil should be handled by the private sector.

**SPW-2.** The county shall accept asbestos-containing materials for disposal only at the Cedar Hills regional landfill if accompanied by required federal, state or local asbestos disposal documentation. After the Cedar Hills regional landfill closes, asbestos-containing materials should be handled by the private sector.

**SPW-3.** The county shall evaluate providing one solid waste transfer facility that would accept small volumes of asbestos-containing materials from residential customers.

**SPW-4.** The county shall make safety and public health the top priorities in managing the disposal of biomedical wastes. The county shall accept treated biomedical wastes at the Cedar Hills regional landfill and county transfer facilities only if it has been treated according to standards contained in the county Solid Waste Regulations. After the Cedar Hills regional landfill closes treated biomedical wastes should be handled by the private sector. The county shall also evaluate the possibility of accepting small volumes of treated biomedical wastes at county transfer stations after the Cedar Hills regional landfill closes.

**SPW-5.** The county shall evaluate providing a separate receptacle for disposal of small quantities of sharps generated by residents or small businesses at some or all transfer facilities.

**SPW-6.** The county should develop and implement educational programs for residents on the proper disposal practices for sharps and other biomedical wastes.

**SPW-7.** The county should work with pharmacies and health care providers to educate individuals on proper disposal of medical waste, and to establish voluntary take-back programs for home-generated sharps and other used medical supplies.

**SPW-8.** The county shall accept disposal of de-watered vector wastes only at the Cedar Hills regional landfill. The county should reevaluate and revise recommendations from the 1994 Vector Waste Disposal Plan to provide wet vector waste management alternatives after the Cedar Hills regional landfill closes.

**SPW-9.** The county should develop and implement long-term management solutions for the special handling required for de-watered vector wastes. The county should dispose of de-watered vector wastes through future waste export contracts after the Cedar Hills regional landfill closes unless other management options are identified in the county's evaluation of long-term management solutions.

**SPW-10.** The county should accept limited numbers of waste tires at transfer stations and should dispose of limited numbers of waste tires at the Cedar Hills regional landfill. Once the Cedar Hills regional landfill is closed, the county should dispose of waste tires through future waste export contracts.

**SPW-11.** The county shall authorize disposal of controlled solid waste that cannot be handled by the county facilities at locations outside the county on a case-by-case basis.

## Contaminated Soil

Contaminated soil is soil containing fuel oil, gasoline, lubricating oil, other hydrocarbons, or other contaminants at concentrations that are lower than hazardous or dangerous waste levels but generally higher than cleanup levels established by the Washington Department of Ecology (PUT 7-1-4 [PR], 6.38). The Solid Waste Division and the Health Department regulate its disposal through the waste clearance process (discussed in more detail in Chapter 9, *Enforcement*).

Contaminated soil generally results from leaking underground storage tanks, site remediation activities, or releases of hazardous substances into soil. Beginning in the late 1980s, the disposal of contaminated soils increased dramatically due to the federal underground storage tank program that required upgrading or replacing commercial and industrial tanks (Federal Hazardous and Solid Waste Amendments of 1984, 40 CFR Parts 280-281). Under this program, underground storage tanks installed before December 1988 were to be upgraded or removed. During the early years of the program, the Cedar Hills Regional Landfill saw a surge in the disposal of contaminated soil. In 1991, soil received at the landfill reached a high of 16,700 tons, but by 1992 the volume had dropped to less than 1,000 tons per year. By 1999, that volume dropped even further to only 88 tons.

Disposal of contaminated soil at private transfer stations within the region, however, has increased in the last few years. In 1999, more than 16,000 tons of contaminated soil was received at Rabanco's Third & Lander facility and more than 600 tons was received at Waste Management's Argo Yard. The reason for the shift toward private-sector management of contaminated soil is that these two private companies use the material as daily cover at their out-of-county landfills, which reduces the cost of disposal to the customer.



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 The success and cost-effectiveness of on-site treatment technologies for contaminated soil has reduced the amount of soil that is disposed

In addition to disposal, there are a variety of treatment processes that remove or destroy hazardous substances in contaminated soil. On-site treatment technologies include aeration, *in situ* bio-remediation, and use of mobile thermal desorbition or incineration units. Off-site treatment technologies include thermal stripping and incineration. These technologies can be cost-competitive options for managing contaminated soils, depending on the volume of soil and characteristics of the contaminants. Treatment is most cost-competitive for large remediation projects and for petroleum-contaminated soil. The rates charged for treatment are often less than the rates for disposal as special wastes.

Further declines in the volume of contaminated soil requiring treatment or disposal are expected in the future due, in part, to the success of the storage tank removal program.

The Cedar Hills Regional Landfill is the only in-County disposal facility that accepts contaminated soil. Once the landfill reaches its permitted capacity, the only disposal option available will be the out-of-county landfills. Out-of-county landfills already accept and manage significantly more contaminated soil than is disposed at Cedar Hills. Capacity exists at these landfills to provide disposal for at least 50 years after Cedar Hills closes (see Chapter 7).

### Asbestos-Containing Materials

Asbestos-containing materials are wastes that contain more than 1 percent asbestos by weight. Asbestos waste is generated largely through structural demolition, renovation, and remodeling. Airborne asbestos presents a considerable risk to human health and is therefore considered a hazardous air pollutant.

Asbestos handling, from removal at the site through final landfill disposal, is regulated by the following federal, state, and local laws:

- The National Emission Standards for Hazardous Air Pollutants (NESHAP) (40 CFR Part 61 Subpart M)
- The Puget Sound Clean Air Agency’s (PSCAA) Asbestos Control Standard (Regulation III, Article 4)
- King County Solid Waste Regulations (KCBOHC 10.28.060)
- King County Waste Clearance and Waste Acceptance Policies (PUT 7-2-1 [PR], and PUT 7-1-4 [PR])

Landfilling is the most common method for managing these materials because once asbestos is buried it no longer poses a health hazard. The Cedar Hills Regional Landfill is the only facility within the County’s system that accepts asbestos. All friable asbestos-containing waste received must be accompanied by an U.S. Environmental Protection Agency Waste Shipment Record for Regulated Asbestos Waste Material and either a PSCAA Notice of Intent or a Solid Waste Division Waste Clearance Decision.

Each friable asbestos load is placed in a pit prepared specifically for asbestos-contain-

ing waste, special waste, and containerized sharps (needles, syringes). A waste screening technician observes the waste as it is unloaded to ensure that the material is properly bagged and labeled and that the bags are not broken during placement. The asbestos pit is covered at the end of the working day. The Solid Waste Division maintains records of the location, depth, and volume of asbestos-containing waste disposed at the landfill.

The volume of asbestos waste generated within the County seems to be declining. In 1991, approximately 3,800 tons of asbestos was disposed at the Cedar Hills Regional Landfill; however, tonnage has declined substantially since then. By 1995, the amount of asbestos disposed at Cedar Hills declined to about 100 tons annually and has remained at that level through 1999.

The long-term decline in asbestos disposal is due, in part, to a dwindling number of buildings and other structures that still contain the material. The decline can also be attributed to the increased role of the private sector in providing asbestos disposal services. It is believed that the private sector has the capacity to handle the asbestos wastes generated in King County after the Cedar Hills Regional Landfill closes.

### Treated Biomedical Wastes

Biomedical wastes include cultures; laboratory waste; needles and other sharps; and liquid human blood, tissues, and body parts generated primarily by hospitals, laboratories, research facilities, and medical, dental, and veterinary clinics. Residential users of syringes, lancets, and other home health care materials also generate a small amount of biomedical waste. These wastes can contain pathogens in sufficient concentrations to pose risk of disease in humans exposed to them.

Within King County, the Health Department regulates the handling and disposal of commercial biomedical waste. Disposal of commercial biomedical waste at the Cedar Hills Regional Landfill is also regulated by the County's Waste Acceptance Policy (PUT 7-1-4 [PR]). Cedar Hills accepts biomedical waste from medical facilities only when it has been treated according to standards contained in King County Solid Waste Regulations (KCBOHC 10.28.070). Most biomedical waste must be treated by steam sterilization, incineration, or other approved method. Sharps waste, including needles, syringes with needles attached, and lancets, must be contained in rigid, puncture-proof containers. Most of the commercial biomedical waste generated in the region is treated and disposed via private incinerators and treatment facilities outside King County.

Home-generated biomedical wastes, such as needles and syringes, are disposed of as MMSW. Although quantities are less, they can pose the same risks as those from the medical and research communities. Improper disposal of home-generated sharps can expose solid waste workers to blood-borne pathogens. The Washington Department of Ecology and the Health Department inform the public about proper handling and disposal of home-generated medical wastes.

*The disposal of laboratory and medical wastes is regulated by King County's Waste Acceptance Policy*



In 1999, the approximate quantity of treated biomedical wastes received as special waste at the Cedar Hills Regional Landfill amounted to about 55 tons. The wastes were received primarily from small-scale medical services providing their own transport. Most of the biomedical wastes generated by hospitals and clinics are taken to out-of-county facilities for treatment, either by incineration or microwave, and disposal. No data are available on the volume of biomedical waste handled by the private sector. According to the Solid Waste Division's most recent waste characterization study (Appendix A-2), the volume of treated biomedical wastes delivered to the County's transfer facilities along with MMSW is small (about 300 tons per year) and consists primarily of syringes, intravenous tubing, bandages, medications, and other wastes.

Safety is the most important concern with the transfer and disposal of biomedical wastes. In 1999, a statewide group was convened to identify medical waste management issues that could, or should, be addressed by legislation. The group concluded that medical waste management in the state was not posing a health risk to the general public, but did constitute a risk for solid waste haulers and site operators and workers at medical waste processing facilities. Reasons given for the risk included:

- Generators are not always packaging material correctly
- There is a growing amount of biomedical waste in the residential waste stream because of more outpatient care
- Transport laws do not apply to small-quantity transporters carrying less than 100 lbs. of biomedical wastes
- Laboratory-generated cultures and stocks can be particularly dangerous to handle, and there are no standards for deactivating these materials before they are disposed

In addition, even though needles and other sharps are required to be disposed in plastic containers, sometimes in the disposal process the containers are broken, creating a safety hazard for wastes handlers. Some method of segregating these wastes at the transfer facilities would increase worker safety. For example, City of Seattle transfer stations provide separate barrels for the disposal of sharps and small amounts of medical wastes.

The statewide group identified several actions that could be taken at the state and local levels to improve safety, which included:

- Initiating educational programs for residents on proper disposal practices for sharps and other biomedical wastes
- Working with pharmacies and health care providers to educate individuals on how to properly dispose of medical waste, and establishing voluntary take-back programs for home-generated sharps and other used medical supplies

### **Treatment Plant Grit and Vector Wastes**

Treatment plant grit and vector wastes are the by-products of sewage treatment plants, industrial activities, and various commercial and residential activities. Because of the potential for these wastes to contain industrial pollutants, they are regulated by the County's Waste Acceptance Policy (PUT 7-1-4 [PR]).

Treatment plant grit consists of both floating and sunken solids that are screened out at the entrances to sewage treatment plants. Specific materials include rags, plastics, rocks, and sand. Treatment plant grit is delivered directly to Cedar Hills by the County's Wastewater Treatment Division and by smaller treatment plant operators.

There are both wet and dry vactor wastes. Wet vactor wastes are mostly catch basin sludges from streets and parking lots, consisting primarily of sand and silt, some litter, and a certain percentage of oil and grease. Wet vactor wastes are dewatered prior to delivery at Cedar Hills for disposal; however, the material must retain a relatively high water content in order for it to be pumped from the vactor trucks that deliver it.

Dry vactor wastes are street sweepings, soot from chimney sweeps, and vacuumed debris from duct systems. The material is difficult to handle because it often consists of fine dust that can be blown around easily.

The primary method of managing treatment plant grit and vactor wastes is landfill disposal. The Cedar Hills Regional Landfill is the only in-county landfill that accepts these types of waste. The quantity of wastes received in 1999 was approximately 4,500 tons. Rabanco's transfer station at Third & Lander also accepts both wet and dry vactor wastes, but not treatment plant grit. Based on monthly tonnage reports from Rabanco, they take in larger volumes of vactor wastes than Cedar Hills.

Vactor wastes present special handling problems for waste export and disposal. Wet vactor wastes contain high volumes of water that must be removed before transport in order to reduce the weight of the material as well as the risk of leakage. However, some water content must remain so that it can be pumped from the delivery trucks. There are two public facilities in the County that remove the water from wet vactor wastes. Dry vactor waste is light material, but very difficult to handle at transfer stations because of its dust-like nature. Given the characteristics of these materials, it is likely that special methods of managing these wastes will have to be developed in order to implement an efficient waste export system.

In 1994, the King County Surface Water Management Division, now the Water and Land Resources Division, published a Vactor Waste Disposal Plan. The purpose of the Vactor Plan was to develop waste disposal practices for wet vactor waste that would protect regional water quality. Major recommendations contained in the Vactor Plan include:

- Providing a network of receiving stations for public and private vactor trucks
- Encouraging the construction of vactor waste receiving facilities through the development of uniform land use standards that facilitate siting and construction
- Developing environmentally sound, cost-effective, and creative technologies for handling wet vactor waste



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*Landfilling is the primary method of managing treatment plant grit and vactor wastes*

To date, not all recommendations contained in the Vactor Plan have been implemented; however, a review of the Vactor Plan recommendations and supporting documentation appears warranted given the need to provide wet vactor waste management alternatives after Cedar Hills reaches its permitted capacity. Both Snohomish County and the City of Seattle operate waste export systems and handle wet vactor waste. A review of their handling practices also warrants further study.



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*Nearly 300,000 tons of agricultural wastes are generated yearly in King County*

### **Agricultural Wastes**

Agricultural wastes are by-products of farming and ranching that include crop processing waste, carcasses of dead farm animals, and manure. The King County Cooperative Extension Service reports that crop-processing waste is not a major concern in King County. No estimates are available on quantity because most of it is returned to the soil at the end of the growing season. Current practices do not generate wastes that require disposal or result in pollution problems.

The management of animal carcasses is a well-developed industry, which relies on rendering plants that derive useful products from animal remains. Some types of animals, whose carcasses cannot be rendered, may be disposed in landfills. In 1999, 41 tons of animal remains were disposed at the Cedar Hills Regional Landfill. In comparison, the Baker Commodities rendering facility processes approximately 5,000 tons of dead animals per month.

Farm animals in King County produce from about 1,400 to 1,700 tons of manure per day, which is generally stockpiled and may eventually be applied to farmlands. The major concern for manure storage, processing, and application is contamination of surface water.

Since agricultural wastes are organic wastes, policies for their future handling are provided in Chapter 4.

### **Waste Tires**

Waste tires are accepted at County disposal facilities but on a limited basis. Commercial haulers are not allowed to dispose waste tires at County facilities; individuals can dispose up to four tires at a time. The tires received are disposed at the Cedar Hills Regional Landfill along with other MMSW. Because waste tires are disposed with other MMSW, there is no specific information about actual volumes received; however, survey data gathered by the Solid Waste Division for the Waste Monitoring Program indicate that waste tires make up about one half of one percent of the County's MMSW stream (Appendix A-2).

Most waste tires continue to be managed by private recyclers and processors. Once Cedar Hills reaches its permitted capacity, those few waste tires that are disposed will likely also be handled by processors, or will be managed as a part of a waste export contract for MMSW.

**Other Wastes**

Certain wastes require disposal by means not available in King County, such as incineration. These wastes include, but are not limited to, some government-classified materials including computer disks, reports, and other materials that contain classified or sensitive information. King County Code Title 10.08.020(c) provides that “Unless specifically permitted by state law or specifically authorized by King County ordinance, it is unlawful for any commercial hauler or other person or entity to deliver or deposit any controlled solid waste outside the borders of King County unless it is authorized by the adopted King County comprehensive solid waste management plan.”

Although the amount of waste requiring disposal by incineration or other method not available in King County is negligible, requests for such out-of-county disposal may require action in a relatively short time frame. It is recommended that the Solid Waste Division Manager have the authority to approve out-of-county disposal of this waste on a case-by-case basis.



**Table 8-3.** Recommendations for Special Wastes

Type of Waste	Recommendation Until Cedar Hills Closes	Recommendation After Closure
Contaminated soil	Continue to accept small volumes at Cedar Hills	Shift handling to the private sector
Asbestos-containing materials	Continue to accept small volumes at Cedar Hills Evaluate the possibility of providing one transfer facility that would accept small volumes from residents	Shift handling to the private sector
Treated biomedical wastes	Continue to accept at Cedar Hills and transfer facilities Support the statewide group on medical waste handling Evaluate the possibility of providing a separate receptacle for disposal of small quantities of sharps generated by residents or small businesses at some or all transfer facilities	Shift handling to the private sector Continue to accept small volumes at transfer stations
Treatment plant grit	Continue to accept at Cedar Hills	Incorporate into future waste export contracts



**Table 8-3.** *continued*

Type of Waste	Recommendation Until Cedar Hills Closes	Recommendation After Closure
Vactor wastes	Continue to accept at Cedar Hills	Pending results of further research, incorporate into the future waste export contracts or pursue other options
	Further evaluate 1994 Vactor Waste Disposal Plan to look at other long-term management solutions	
	Further evaluate dry vactor waste handling at transfer stations and in waste export containers	
Agricultural wastes	See Chapter 4	See Chapter 4
Waste tires	Continue to accept limited numbers at transfer stations and dispose at Cedar Hills	Incorporate into future waste export contracts
Other wastes	Allow the Solid Waste Division Manager to authorize the disposal of controlled solid waste that cannot be handled by King County facilities at locations outside King County	Continue with previous recommendation

**References**

Cascadia. 2000. *Waste Monitoring Program: 1999/2000 Comprehensive Waste Stream Characterization and Transfer Station Customer Surveys. Final Report.* Prepared by Cascadia Consulting Group, Inc., for King County Department of Natural Resources, Solid Waste Division, Seattle, WA.