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Solid Waste Transfer System

POLICIES

TS-1 Provide solid waste services to commercial collection companies and self-haul customers at transfer stations, and to self-haul customers at drop boxes.

TS-2 Provide solid waste transfer services in the urban and rural areas of the county based on local and facility conditions and interlocal agreements with King County cities.

TS-3 Work with cities and communities to develop mitigation measures for impacts related to the construction, operation, and maintenance of transfer facilities, as allowed by applicable local, state, and federal laws.

TS-4 Incorporate green building principles and practices in all new transfer facilities and seek a ~~Gold or higher~~ Platinum rating in the Leadership in Energy and Environmental Design (LEED) certification process.

TS-5 Provide for collection of recyclable materials and resource recovery at transfer facilities – recognizing resource limitations, availability of markets, and service area needs – focusing on maximum diversion of recyclables from the waste stream and on materials that are not easily recycled at the curb or through a readily available producer or retailer-provided program.

Commented [SWD1]: Pending report required by budget proviso (due June 30, 2015).

Solid Waste Transfer System

SUMMARY OF RECOMMENDATIONS

Responsibility	Action	Detailed Discussion
1 County	Continue to implement the transfer system renovation plan set forth in the <i>Solid Waste Transfer and Waste Management Plan</i> and approved by the Metropolitan King County Council in 2007, except as noted in the next recommendation, subject to the outcome of the interlocal agreement discussions. <u>Implement the transfer system capital improvement program</u>	Page 5 -
2 County	Although approved for closure under the <i>Solid Waste Transfer and Waste Management Plan</i>, reserve the option to retain the Renton station until the new urban transfer facilities have been sited and the impact of closure has been fully evaluated.	Page 5 -
3 County	Consider <u>Evaluate</u> adding a second scale and an additional collection container at the Cedar Falls Drop Box to improve capacity.	Page 5 -
4 County	If service level assessments indicate the need for additional capacity in the rural areas after the siting of two new stations , consider siting drop box facilities.	Page 5 -
5 County, commercial collection companies	Explore prospects for the transfer of commercial loads of organics through county transfer stations.	Page 5 -
6 <u>County</u>	Implement a resource recovery program at transfer facilities to remove targeted materials from the waste stream.	Page 5 -
7 <u>County</u>	Assess the feasibility of anaerobic digestion at division facilities.	Page 5 -
6 County, cities	Evaluate options for ensuring there are adequate transfer capacity and recycling/reuse opportunities for construction and demolition debris now and in the future.	Page 5 -
8-7 County, cities	In the event of an emergency, reserve the transfer system for municipal solid waste and make the recycling of related debris a priority.	Page 5 -
9-8 County, cities	Identify potential temporary debris management sites where emergency debris can be stored until it is sorted for recycling or proper disposal.	Page 5 -
9 County	Evaluate options from ensuring adequate transfer capacity and recycling/reuse opportunities for construction and demolition debris after current contracts expire.	Page 5 -

Commented [SWD2]: Detail to be added as needed pending Transfer Plan review

Commented [SWD3]: Pending report required by budget proviso (due June 30, 2015).

THE SOLID WASTE TRANSFER SYSTEM

Planning, design, and construction are well underway in the development of a new generation of solid waste transfer facilities. The aging transfer system is in need of extensive improvements after nearly 50 years of service to a growing region. Increased population and advances in the industry have led to the need for ~~newly constructed new~~ or rebuilt facilities to provide greater capacity and update station technology. In addition, the increased focus on environmental stewardship has reshaped the role of transfer stations in managing solid waste, creating the need for more ~~robust flexible~~ and modern facilities that will pave the way for a sustainable system in the future.

The division operates eight transfer stations and two rural drop boxes dispersed throughout the urban and rural areas of the county (Figure 5-1). Transfer facilities are the public face of the solid waste system. ~~In 20122014, county transfer facilities received about 780,000 tons of garbage and recyclables, through more than 765,000 customer visits.~~

Commented [SWD4]: Update with 2014 numbers.

The transfer stations and the drop boxes accept garbage and, in many cases, ~~yard waste and other~~ recyclable materials from business and residential self-haulers. The transfer stations also provide accessible drop-off locations for garbage picked up at the curb by the commercial collection companies. From these geographically dispersed ~~transfer stationsfacilities~~, garbage is consolidated in transfer trailers or containers and taken to the county-owned Cedar Hills Regional Landfill (Cedar Hills) in the Maple Valley area. ~~Recyclable materials are transported to processing facilities throughout the region.~~

Commented [SWD5]: Add possibility of anaerobic digestion at facilities.

~~Beginning in 2004, Using through a collaborative, regional approach to solid waste management, the division and its advisory committees – the Solid Waste Advisory Committee (SWAC) and the Metropolitan Solid Waste Management Advisory Committee (MSWMAC) – developed a plan to renovate the transfer system. Given the potential effects of station renovation, siting, and construction on the cities and other stakeholders, it was important to engage them in the early stages of planning. This effort began in 2004 with a comprehensive analysis of the current transfer system and the adequacy of each facility in the network. The division and advisory committees focused initial evaluations on the urban transfer stations.~~

The urban transfer stations, with the exception of the ~~First Northeast Transfer Station in Shoreline which was already approved for replacement~~~~newly constructed Shoreline Recycling and Transfer Station~~, were evaluated using ~~17 criteria. In general, the~~ criteria focused on the level of service to users, the capacity of stations to handle garbage and recyclables both now and in the future, structural integrity, and the effects of facilities on surrounding communities. ~~Once the criteria were applied to each urban station, the evaluation of the station's condition was used to determine whether the station should be reconstructed in its current location, whether it should be closed and a new station built in a different location, or whether it should be closed without being replaced.~~

The advisory committees worked closely with the division to develop and apply the ~~17~~ criteria, evaluate options, and formulate recommendations for upgrading the transfer system. ~~This work of the division~~

~~and the committees culminated in the *Solid Waste Transfer and Waste Management Plan* (Transfer Plan; KCSWD 2006b), which contains recommendations for the station renovations. The is Transfer pPlan was approved by the Metropolitan King County Council in December 2007. The approved recommendations authorized the division to completely reconstruct or site and build newly sited facilities to replace four outmoded new recycling and transfer stations – Bow Lake, Factoria, South County, and Northeast Lake Washington (the name has since been shortened to “Northeast”) – and to close three existing stations – Algona, Houghton, and Renton – when replacement capacity is available.~~

Summarize Transfer Plan Review and updated transfer plan.

~~The Transfer Plan calls for the Bow Lake and Factoria stations to be deconstructed, and new recycling and transfer stations to be built on the existing sites and adjacent properties. Both the Houghton and Algona stations will be closed and replaced with newly sited recycling and transfer stations in the Northeast and South County areas, respectively. The Renton station was approved for closure.~~

~~The rural facilities in the transfer network—the Enumclaw and Vashon transfer stations and the drop boxes at Cedar Falls and Skykomish—were assessed after completion of the urban station evaluation using the same 17 criteria. The Vashon and Cedar Falls facilities each failed one evaluation criterion that can be improved on-site. Recommendations are provided in this chapter. The analysis of rural service also resulted in a recommendation to postpone a decision about the Renton station until the new urban transfer facilities have been sited and the impact of closure can be fully evaluated. Should closure leave Renton and surrounding rural areas underserved, the division may retain the Renton station in some capacity.~~

~~This chapter traces the planning process for the solid waste transfer system through the development of the facility renovation plan. What emerges is a system plan that will improve the network’s current level of services, with the flexibility to adapt to changing needs and emerging technologies. The chapter also discusses plans for effectively managing local and regional emergencies.~~

Insert Figure 5-1. Locations of solid waste facilities (Map)

THE TRANSFER SYSTEM AND SERVICES

The concept of a regional transfer and disposal network in King County grew out of a nationwide movement in the 1960s to impose stricter standards for protection of public health and the environment. The original purpose of the transfer network was to replace the open, unlined community dump sites in use at the time with environmentally safe transfer facilities where garbage could be delivered by curbside collection trucks and self-haulers. From these transfer sites garbage could then be consolidated into larger loads for transport to Cedar Hills.

Public Health – Seattle & King County (Public Health) is the primary regulatory and enforcement agency responsible for issuing operating permits for both public and private solid waste handling facilities. This

includes solid waste, recycling, and composting facilities. Solid waste handling regulations are codified in the Code of the King County Board of Health, Title 10. The permitting process is the vehicle by which Public Health enforces the state's Solid Waste Handling Standards (WAC 173-350) and Criteria for Municipal Solid Waste Landfills (WAC 173-351). Public Health inspects solid waste handling facilities and has the authority to take corrective action for noncompliance.

Locations of the eight transfer stations (six urban and two rural) and two rural drop boxes in King County are shown in Figure 5-1. In addition to meeting standards for the safe and environmentally sound transfer of solid waste, the transfer network reduces the amount of truck traffic on the highways by providing geographically dispersed stations where garbage collected throughout the region can be consolidated into fewer loads for transport to the landfill. While this network has served the region well over the years, it was not built to accommodate the three-fold increase in population that has occurred since the 1960s, the larger-sized commercial collection vehicles now in use, and the space needed to collect ~~and recover~~ a growing array of recyclable materials. Table 5-1 lists the locations of ~~current~~ transfer facilities, along with the tons of garbage received, numbers of customers served, and recycling services provided ~~for each facility~~.

As shown in Table 5-1, in addition to accepting garbage for disposal, the transfer stations provide for collection of a wide variety of materials for recycling. New recycling and transfer stations are ~~designed and~~ built to accommodate an expanded range of materials. ~~Add summary text about resource recovery.~~

Insert **Table 5-1** **Current facilities and services**

Commented [SWD6]: Update with most recent information

Services for Construction and Demolition Debris

Commented [SWD7]: Update this section as needed – system will be changing

The county does not accept commercial or large loads of construction and demolition (C&D) debris at any of its transfer facilities, except ~~for~~ the Vashon Recycling and Transfer Station. C&D is debris from the construction, remodeling, repair, or demolition of buildings, other structures, and roads. It includes dimensional lumber, clean wood, painted and treated wood, gypsum wallboard, roofing, siding, structural metal, wire, insulation, packaging materials, and concrete, asphalt, and other aggregates. The county banned the disposal of large loads of C&D at the transfer stations and Cedar Hills landfill in 1993.

To manage the majority of the region's C&D, the division contracts with two private-sector companies – Republic Services and Waste Management. ~~As of 2015, together,~~ these two companies ~~currently~~ operate six facilities ~~(Table 5-2)~~, which accept all loads of C&D, both recyclable and non-recyclable. While initially most of the C&D collected was disposed, these facilities ~~are have been~~ taking steps to increase their C&D recycling. ~~(As discussed in Chapter 4, Collection and Processing), in mid-2015 the division will be changing how C&D is handled. The majority of C&D materials will continue to go to private facilities. In addition to the facilities listed below, there are many other private sector facilities throughout the region that accept C&D materials for recycling or reuse (discussed in Chapter 4).~~

Table 5-2

C&D Facility	Location
Republic Services	
Third & Lander Recycling Center & Transfer Station	2733 3rd Ave South, Seattle
Black River Recycling & Transfer Station	501 Monster Road, Renton
Waste Management	
Eastmont Transfer/Recycling Station	7201 W Marginal Way SW, Seattle
Cascade Recycling Center	14020 NE 190 th , Woodinville
Recycling Northwest	701 2nd Street NW, Auburn
Argo Yard (intermodal containers only)	5000 Denver Ave South, Seattle

Commented [SWD8]: This is the current list – may change when have the new designated facilities

The current C&D contracts with Republic Services and Waste Management are scheduled to expire in 2014. Before the expiration date, the division will evaluate options for ensuring there are adequate transfer capacity and recycling/reuse opportunities for C&D in the future. Options could include negotiating new contracts for C&D handling, allowing C&D to flow to private sector facilities without contracts, and accepting more C&D at the new and rebuilt county transfer stations. Criteria used to choose among the options will include the potential to increase the amount of C&D that is recycled, accessibility of the C&D disposal and recycling facilities, and ability to maintain reasonable disposal fees.

Services for Household Hazardous Wastes

Many common household products, such as pesticides and certain cleaning products, contain ingredients that are toxic, flammable, reactive, or corrosive. Disposed improperly, these products can pose a threat to human health and the environment. Household hazardous waste (HHW) generated in King County is managed through the Local Hazardous Waste Management Program (LHWMP). This program is jointly managed by King County, the City of Seattle, the 37 cities within our service area, and Public Health. The guiding policies and plans are contained in the joint *Local Hazardous Waste Management Program 2010 Plan Update* (Watson, 2010), mandated under RCW 70.105.

The county accepts HHW from residents through ~~two~~ three avenues: the traveling Wastemobile, regular weekly Wastemobile service at The Outlet Collection (formerly the SuperMall) in Auburn, and a stationary drop-off site at the Factoria Transfer Station. The City of Seattle operates two HHW collection sites within its borders, which are open to all King County residents. Wastes collected through these services are recycled, reused, or incinerated when necessary. None is disposed at Cedar Hills. HHW collection for residents is funded through a surcharge on garbage disposal, residential and business garbage collection, and wastewater discharge fees; residents using the services are not charged at the drop-off locations. Jurisdictions receive funds from the LHWMP to provide the service.

Created in 1989, the county's Wastemobile was the first program of its kind in the nation. It is a mobile service that travels to communities within King County, staging collection of HHW at each site for one to two days at a time. The Wastemobile also provides regularly scheduled HHW collection at ~~the~~

Supermall The Outlet Collection in Auburn, increasing from twice monthly to weekly service each Saturday and Sunday in 2012, and collecting 241 tons of waste from 5,300 customers. Also in 2012, twenty-one traveling Wastemobile events served more than 9,800 King County residents, collecting 300 tons of hazardous waste. The county's Factoria Transfer Station offers HHW drop-off service six days a week. In 2012, over 14,400 customers brought about 329 tons of HHW to Factoria.

Commented [SWD9]: Update with 2014 stats

Moderate risk waste (MRW) has been accepted from small businesses at the Factoria station and the Wastemobile since 2008. Before 2008, only residential customers were offered this service. In 2012, the program served 187 small quantity generator business customers and collected 15 tons of MRW from small businesses.

Commented [SWD10]: Update stats

TRENDS IN TRANSFER STATION USAGE

Figure 5-2 shows the tons of garbage received at the transfer stations and the landfill over the last 20 years. The drop in total tons disposed in the early to mid-1990s is attributable to the success of waste prevention and recycling programs that began in the late 1980s, the withdrawal of the City of Seattle from the county's system in 1991, and the ban on most C&D from the division's solid waste system in 1993. In 2004, the amount of garbage taken directly to Cedar Hills decreased significantly due to an increase in the fee charged to commercial collection companies that were hauling wastes directly to the landfill. The fee increase discouraged this practice, resulting in more waste being processed through county transfer stations. The economic downturn is primarily responsible for the tonnage reduction since 2007. The division does not expect a rapid return to earlier tonnage levels.

Commented [SWD11]: Update

Add text about Bellevue and point cities leaving system in 2028 and effect on the transfer system.

Commented [SWD12]: Add a figure showing forecast 2015-2040.

Insert Figure 5-2. Total tons processed at transfer stations and disposed at Cedar Hills (1990-2012)

Seventy-seven percent of the garbage received at the transfer facilities in 2012 was brought by the larger, commercial curbside collection trucks, with the remaining 23 percent delivered by business and residential self-haulers (shown in Figure 5-3). While the larger garbage loads come from the commercial haulers, self-haulers account for 84 percent of the customer transactions (Figure 5-3). At some of the urban stations that are operating at or near maximum capacity, the mix of self-haul and commercial customers can cause long traffic queues and crowded conditions on the tipping floor. The division has managed these problems, to the extent possible at each station, by providing separate queuing lanes for the two customer types and allowing maximum separation on the tipping floor, for safety as well as efficiency. Crowding is somewhat eased by the fact that self-haulers typically use the stations more on weekends, while commercial transactions occur primarily on week-days. The division is committed to providing service to self-haulers, viewing the solid waste disposal network as a public system that exists for the benefit of the community. New transfer facilities are being designed to safely and efficiently serve both commercial and self-haul customers.

Commented [SWD13]: Update with 2014 info.

Commented [SWD14]: Incorporate Transfer Plan review as needed.

Insert Figure 5-3. Percent of total tons and transactions at transfer stations by hauler type (2012-2014)

Commented [SWD15]: Update

To understand who self-hauls to the transfer facilities and why, the division conducts periodic surveys of customers ~~through countywide telephone interviews and on-site questionnaires at each facility~~. Self-haulers consist of single- and multi-family residents and non-residential customers, such as landscapers, small contractors, industries, offices, stores, schools, government agencies, and ~~increasingly~~, independent haulers for hire. The most common type of self-hauler is the single-family resident.

Of the self-haul trips, about 90 percent are made by residential customers, who bring in about 85 percent of the self-haul tons. About 10 percent of the trips are made by non-residential self-haulers, bringing about 15 percent of the self-haul tons.

Table 28. Reported Generator Type by Facility, Self-haul, 2011

Self-haul, n=4503	Algona	Bow Lake	Cedar Falls	Enumclaw	Factoria
Residential	86%	89%	95%	93%	93%
Single Family	86%	89%	95%	93%	93%
Multifamily	0%	0%	0%	0%	0%
Mixed Residential	0%	0%	0%	0%	0%
Nonresidential	13%	10%	4%	5%	6%
Mixed Residential and Nonresidential	0%	1%	1%	1%	1%
Subtotal	100%	100%	100%	99%	100%
No Response	0%	0%	0%	1%	0%
Total	100%	100%	100%	100%	100%

Self-haul, continued	Houghton	Renton	Shoreline	Skykomish	Vashon	Overall
Residential	88%	93%	92%	94%	89%	90%
Single Family	88%	93%	92%	94%	89%	90%
Multifamily	0%	0%	0%	0%	0%	0%
Mixed Residential	0%	0%	0%	0%	0%	0%
Nonresidential	10%	6%	8%	6%	10%	9%
Mixed Residential and Nonresidential	2%	0%	1%	0%	0%	1%
Subtotal	100%	100%	100%	100%	100%	100%
No Response	0%	0%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%

Estimates are rounded to the nearest percent and, when added together, may not equal 100% due to rounding.

~~According to the 2011 Waste Characterization Study, the number one material disposed by self-haulers is dimensional lumber (a subset of C&D), followed by yard waste, other C&D wastes (gypsum wallboard, carpet, and other C&D waste), furniture, and scrap metal. The division's waste characterization studies study also indicates that about 28 percent almost 60 percent of the materials disposed by self-haulers are recyclable/recoverable and almost 38 percent are potentially recoverable: potentially recoverable materials include tires and dimensional lumber. Overall, trends in self-haul disposal have not changed, except the amount of cardboard being disposed is trending down.~~

Commented [SWD16]: Incorporate this info from 2011 Waste Characterization study into a new table

Figure 18. Waste Recoverability, Self-haul Substreams, 2011

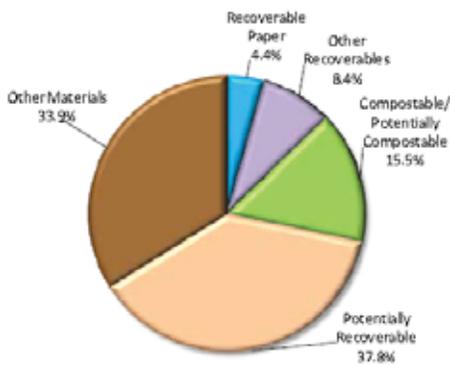
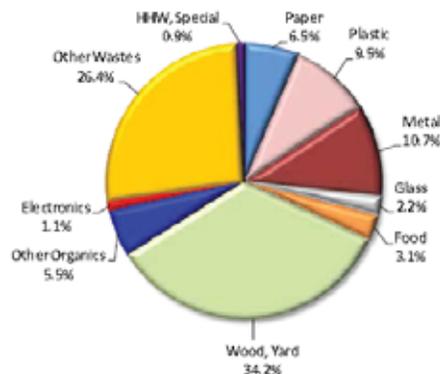


Figure 19. Waste Composition, Self-haul Substreams, 2011



As shown in Table 20, dimensional lumber, yard waste, and C&D wastes are the three most prevalent materials; together they represent approximately 28% of the County's total self-haul waste.

Table 20. Ten Most Prevalent Disposed Materials, Self-haul Substreams, 2011

Material	Estimated Percent	Cumulative Percent	Estimated Tons
Dimensional Lumber	12.4%	12.4%	24,362
Yard Waste	10.3%	22.7%	20,083
C&D Wastes	5.6%	28.3%	10,983
Gypsum Wallboard	5.3%	33.6%	10,307
Carpet	5.0%	38.5%	9,768
Furniture	5.0%	43.5%	9,709
Other Ferrous	4.9%	48.4%	9,673
Contaminated Wood	2.9%	51.3%	5,708
Mixed Metals (items <20% non-metal)	2.7%	54.0%	5,195
Other Wood	2.4%	56.4%	4,740
Subtotal	56.4%		110,528
All other materials	43.6%		85,385
Total	100.0%		195,913

Add text or sidebar about Optimize Transfer Station Recycling Feasibility Study.

The last telephone survey, conducted in 2007, indicated that 47 percent of county residents used a transfer facility during the previous year. Of those users, 18 percent said they used a transfer facility once during the year, and 8 percent said they used a transfer facility more than four times during the year. The most common reason given for self-hauling to a transfer facility was having a large quantity of

Commented [SWD17]: Incorporate this data from 2011 Waste Characterization study into a new figure(s).

waste, while the second most common reason was having a large or bulky item that could not be collected at the curb (Figure 5-4). The surveyors found that residents who subscribe to curbside services use transfer stations occasionally, while those who do not subscribe to collection services use the facilities more often.

Insert Figure 5-4. Most common reasons 2007 telephone survey customers gave for self-hauling

A smaller survey of self-haulers on site at the transfer facilities the following year (Cascadia 2009b) provided similar responses. The most common reason reported by residential customers was that self-hauling was cheaper/saves money (18 percent); it is likely that the customers who said that self-hauling was cheaper do not subscribe to curbside collection service. Other primary reasons for self-hauling included, "large amount of garbage" or "items too big to fit in garbage can," and "cleaning home or workplace." The most frequent response from nonresidential customers was large amount of garbage (19 percent).

Commented [SWD18]: Replace with info from 2014 on-line self-hauler survey and 2011 Transfer Station customer survey: <http://your.kingcounty.gov/solidwaste/about/documents/waste-characterization-study-2011.pdf>

EVALUATION AND PLANNING FOR THE URBAN TRANSFER STATIONS

The transfer network has served the region well for nearly five decades; however, with the exception of the Shoreline and Bow Lake Recycling and Transfer Stations, the urban transfer stations are now outdated and over capacity do not meet service needs. Along with the growth in population, the late 1980s brought about an emphasis on recycling to reduce wastes. Recycling containers have been placed at transfer stations wherever space allows; however, space constraints continue to limit the number of containers and the range of materials that each site can accommodate. These space constraints prohibit the addition of recycling opportunities for many materials that are commonly disposed at the stations, including yard waste, clean wood, and scrap metal. Changes in the industry have also created operational constraints. For example, commercial collection trucks are larger than they were in the past, making it more difficult to unload the vehicles efficiently. Given these and other factors, in 2004 the division and its advisory committees embarked on a comprehensive analysis of each urban transfer station to determine how best to update the system to meet current needs.

As discussed in detail in Chapter 2, *Solid Waste System Planning*, the division and its advisory committees developed four analytical milestone reports to evaluate the urban transfer stations. These reports culminated in the approved Transfer Plan, which provides recommendations for upgrading the transfer system and its services.

In the first milestone report (KCSWD and ITSG 2004), the division and advisory committees developed 17 criteria to evaluate the urban transfer facilities. To determine the appropriate standards of performance, the division consulted the local commercial collection companies and other subject experts, and applied national environmental and transportation standards. Details on the application of these evaluation criteria to individual facilities are contained in the second milestone report prepared by the division and advisory committees and approved by the County Council (KCSWD 2005a). Criteria to

address costs and rate-setting considerations were applied during the development of system alternatives in the final milestone report (KCSWD 2006a).

The evaluation criteria were applied to five of the six urban stations – Algona, Bow Lake, Factoria, Houghton, and Renton. The former First Northeast station was not evaluated because it was ~~in the process of being rebuilt~~ already approved to be rebuilt; the rebuilt station opened in 2008 as the Shoreline Recycling and Transfer Station.

For the station evaluations, the 17 criteria were grouped into three broad categories – level of service to customers, station capacity and structural integrity, and effects on surrounding communities. As expected for these five aging facilities, the majority of the criteria were not met, resulting in decisions to reconstruct or close the stations when sufficient replacement capacity was available.

~~The three categories of evaluation criteria are described below, followed by a table that shows the results of their application to the five urban transfer stations.~~

Level of Service

- ~~• *Estimated travel time to a facility* – This criterion measures how conveniently located the facilities are for customers, measured by the maximum travel time to the closest facility in their service area. The standard was established as 30 minutes for at least 90 percent of the customers. It provides an indication of whether the transfer stations are well dispersed throughout the county.~~
- ~~• *Time on site* – Time on site measures the time to get in and out of the station, including unloading time. It was evaluated separately for commercial haulers (with a standard of 16 minutes) and business and residential self-haulers (each with a standard of 30 minutes). It provides an indicator of whether a transfer station can efficiently handle customers in a timely manner.~~
- ~~• *Facility hours* – Individual days and hours of operation for each station are based on the division's usage data and customer trends. Some of the urban stations are open in the early morning or late evening hours to serve the commercial haulers. Currently, the only days that the entire system is closed are Thanksgiving, Christmas, and New Year's Day.~~
- ~~• *Level of Recycling Services* – The final criterion in this category was whether recycling services provided at the stations met the waste prevention and recycling policies established in the *2007 Comprehensive Solid Waste Management Plan*. In general, the policies directed that all stations should 1) provide for collection of the curbside recyclables, including glass and plastic containers, tin and aluminum cans, mixed waste paper, newspaper, and cardboard, 2) where feasible, provide areas for source-separated yard waste collection, and 3) maintain the capacity to add collection of new materials based on market opportunities and community needs.~~

Station Capacity

~~Station capacity is likely the single greatest limitation of the five urban transfer stations, both now and in the future. It was measured using a number of criteria that affect daily operations, future expansion, and emergency capacity.~~

- *Vehicle and tonnage capacity*—Two major operational considerations measured were station capacity for vehicle traffic and solid waste tonnage, both at the time of the study and over the 20-year planning horizon. Optimal operating capacity is the maximum number of vehicles and tonnage that can be efficiently processed through the station each hour based on the station design and customer mix. To derive criteria that would indicate how well a station could be expected to perform, the division modeled its criteria after the transportation standards used to measure roadway capacity. The transportation standards were modified to assign measures of capacity to transfer facilities. The optimal level of service was defined as “able to accommodate vehicle and tonnage throughput at all times of the day, except for occasional peak hour times. Based on the criteria, a station that provides the optimal level of service more than 95 percent of the time is considered underutilized, meaning it offers more capacity than required for the area it serves. A level of service in which capacity is exceeded during 5 to 10 percent of operating hours is considered optimal.
- *Space for 3 days' storage*—Available storage capacity establishes whether a transfer station can continue to operate, or accept garbage, for at least three days in the event of a major regional disaster.
- *Space for station expansion*—Stations were evaluated to determine 1) whether there is space for expansion on the existing property or 2) whether there is adjacent land available on which to expand operations. These two standards were used primarily to determine if the station could be expanded in its current location or if a new location would be needed to efficiently manage current and future needs.
- *Meets facility safety goals*—While all stations hold current permits from Public Health and meet health and safety standards, overall safety is a concern as stations become more congested and operations more constricted. The presence of these physical challenges at the stations does not mean they operate in an unsafe manner; it does mean that it takes extra effort by staff and management at the stations to ensure the facilities are operating safely.
- *Roof clearance*—This criterion measures a station's capacity to handle the larger commercial collection trucks. Through discussions with the commercial collection companies, it was determined that a minimum clearance of 25 feet was needed to allow the new, larger trucks to unload efficiently. The longer truck/trailers with automated lifts, which allow the garbage to slide out the back of the trailers, require higher vertical clearance than trucks did in the past. At some of the older stations, the collection trucks can hit and potentially damage station roofs, supporting structures, or hanging lights as they unload.
- *Ability to compact waste*—This criterion examines whether the station is equipped with, or has the space to install, a waste compactor. Waste compactors increase efficiency and reduce costs by compressing more garbage into fewer loads for transport to the landfill or other disposal option. When garbage has been compacted, transfer trailers can carry about one-third more tons per trip, resulting in less traffic, less wear on local roads, less fuel use, and a reduction in greenhouse gases.

- *Structural integrity*—The purpose of this criterion is to ensure the facility meets code requirements for seismic, wind, and snow events. All facilities were constructed in compliance with the applicable standards of the time and were grandfathered in their current condition and presently meet the “life safety” standard, meaning the station would not endanger occupants in the event of an emergency. The current standard for assessing new transfer buildings for seismic performance is the Immediate Occupancy standard, developed by the Federal Emergency Management Agency (FEMA). This standard means that the facility could be occupied immediately following a seismic event. Because the *King County Emergency Management Plan* identifies transfer stations as critical facilities in the event of an emergency, this FEMA standard applies to all new stations.

Effects on Surrounding Communities

- One of the division's highest priorities is to minimize the effects of its facilities on host cities and surrounding communities. Through its advisory committees and meetings with cities, the division works to understand city and community issues and concerns and bring their perspectives to system planning. Working together, five criteria were developed to evaluate effects on communities.
- *Meets applicable local noise ordinance levels*—This criterion is to ensure that a facility does not violate state or local (city) standards for acceptable noise levels. State and city standards are based on maximum decibel (dBA) levels that consider zoning, land use, time of day, and other factors. Evaluations were based on the existence of any reports of noise violations to the cities and additional noise level measurements performed at each station by a consultant.
- *Meets Puget Sound Clean Air Agency standards for odors*—The primary measure of odor issues is complaints by the public or employees. Complaints are typically reported to the Puget Sound Clean Air Agency (PSCAA) or directly to the division. Complaints to PSCAA are verified by an inspector. If an odor is verified and considered to be detrimental, PSCAA issues a citation to the generator of the odor. The division also tracks and investigates odor complaints.
- *Meets goals for traffic on local streets*—This criterion measures the impacts on local streets and neighborhoods from vehicle traffic and queuing near the transfer stations. The area that could be affected by traffic from self-haulers and commercial collection trucks extends from the station entrance to the surrounding streets. The division hired a consultant to evaluate this criterion based on two standards: 1) that additional traffic meets the local traffic level of service standard as defined in the *American Association of State Transportation Officials Manual* and 2) that traffic does not extend onto local streets during more than 5 percent of the station's operating hours.
- *Existence of a 100-foot buffer between the active area and nearest residence*—This criterion calls for a 100-foot buffer between the active area of the station and the nearest residence.
- *Compatibility with surrounding land uses*—The final criterion used to evaluate the stations was the most subjective and difficult to apply. It looks at consistency with land use plans and zoning regulations, aesthetics, and compliance with state and local regulations. This criterion was

evaluated for each station during lengthy discussions between the division and its advisory committees.

The 17 criteria described above were applied to each of the five urban stations. Table 5-2 presents the results of those evaluations.

Insert Table 5-2. Level of service criteria applied to urban transfer stations in 2005

The results shown in Table 5-2 indicate that the existing network of stations is efficiently distributed throughout King County with adequate service hours that meet the needs of customers. However, most stations required major improvements to address capacity, service, and operational needs. In addition, structural changes were necessary to improve emergency response and operational efficiency, as well as meet desired safety goals.

Since the level of service criteria were first applied to the transfer stations in 2005, the division has made changes and upgrades to the system and tonnage has dropped considerably. A new transfer building has replaced the old Bow Lake, and the roof at Houghton ~~has been~~ was raised to meet the roof clearance standard. ~~In late 2012, the division applied selected criteria to the transfer stations again, using the current system conditions and an updated, lower tonnage forecast. Table 5-3 presents the updated results for criteria that could be affected by these changes. Although the Shoreline station was not part of the original analysis, it is included in the update for reference.~~

Table 5-3. Selected level of service criteria applied to urban transfer stations in 2012

In this update, the Algona station evaluation does not change; however, with the lower tonnage in recent years it is now close to meeting current needs for average daily handling capacity (criterion 6.a.). The new Bow Lake station now meets all criteria, with the possible exception of criterion 5.b., vehicle capacity on weekends in 2032. Factoria meets two more criteria than it did during the original analysis, criterion 2.b., the time on site standard for business self haulers, and criterion 6.a., the average daily handling capacity for current tonnage. The Houghton station meets three more criteria, criterion 2.b., the time on site standard for business self haulers, criterion 5.a., vehicle capacity meets current needs, and criterion 9, minimum roof clearance of 25 feet. The Renton Station is now expected to meet criterion 5.b., vehicle capacity in 2032.

Add text Transfer Plan review background and process

Plans for the Urban Transfer Stations

Based on the application of evaluation criteria, the division and its advisory committees developed a plan to modernize the transfer system, including the addition of waste compactors and other changes needed to provide efficient and cost-effective services to the region's customers.

Activities approved by the County Council in the Transfer Plan include the following:

Commented [SWD19]: Update pending Transfer Plan review.

Bow Lake—deconstruct the existing transfer station and construct a new recycling and transfer station on the existing site and adjacent property

Factoria—deconstruct the existing transfer station and construct a new recycling and transfer station on the existing site and adjacent property

Algona—close the station and replace it with a new recycling and transfer station in the South County area

Houghton—close the station and replace it with a new recycling and transfer station in the Northeast area of the county

Renton—close the station and do not replace it

Although approved for closure, the division recommends reserving the option to retain the Renton station in some capacity, should its closure leave Renton and surrounding rural areas underserved. After the new transfer stations have been sited, the impact of closure can be fully evaluated.

Figure 5-5 shows the planned changes for the urban transfer stations and the two areas identified for construction of new stations. As described on page 5-20, the Shoreline Recycling and Transfer Station exemplifies the public process and station design standards that is being used for all new stations.

The new Bow Lake Recycling and Transfer Station is located on the site of the old Bow Lake Transfer Station and on adjacent property purchased from the Washington State Department of Transportation. During construction, the facility remained open to commercial haulers and self haulers. The new transfer building opened in July 2012, immediately followed by deconstruction of the old transfer building to make way for an expanded recycling area and new scale house. Construction will be complete in 2013.

Insert Map Figure 5-5. Locations of existing and planned solid waste facilities

Commented [SWD20]: Update pending Transfer Plan review.

Add text about serving self-haul customers now using Renton

Commented [SWD21]: Pending Transfer Plan review. Address Council motion.

Shoreline Recycling and Transfer Station Set the Bar for New Stations

Commented [SWD22]: Replace this section with info about Bow Lake and/or Factoria (e.g., info about flat floor design).

The first of the new urban transfer stations, Shoreline Recycling and Transfer Station, was built to meet the highest standards of environmental sustainability, and is the first transfer station built in the U.S. to be registered with the U.S. Green Building Council. Their nationally recognized rating system—Leadership in Energy and Environmental Design (LEED)—evaluates buildings in the areas of protection of human and environmental health, sustainable site development, water savings, energy efficiency, materials selection, indoor environmental quality, and innovation in design.

The Shoreline station earned a platinum certification, the highest rating possible under the LEED rating system. A few of the many features that earned the station this rating include:

- **Natural daylighting**—windows and skylights that allow natural light to filter into the building. Sensors also detect the levels of daylight and adjust the lighting accordingly. This feature is reducing energy use at the station.
- **Solar energy**—photovoltaic panels installed on the south-facing roof that generate electricity even on cloudy days, providing about 5 percent of the building's energy needs.
- **Rainwater collection and reuse**—rainwater collected on the rooftop and stored in tanks that provide water for washing station floors and equipment and for flushing toilets. This feature significantly reduces the use of potable water.

Thornton Creek, which hosts diverse wildlife, runs through the Shoreline property. Protection of the creek was an extremely high priority for the community. Therefore, the station design incorporates innovative systems to protect and restore the creek corridor through several means:

- Invasive plants were replaced with a buffer of drought-tolerant native vegetation to conserve water, protect creek banks from erosion, and provide habitat for birds and other wildlife
- Paved areas were removed, and the buffer around the creek was increased
- Runoff from roadways was channeled to a storm water filtration system and detention pond; this system releases storm water to the creek at a rate that prevents erosion or flooding

The Thornton Creek Alliance recognized the division for working with local residents and alliance members to ensure that improvements at the site would help restore and enhance Thornton Creek. An educational kiosk, which features a recycled glass mosaic representation of the creek, was placed overlooking the creek to display the key message that we all share the watershed and to describe the green building features of the station.

At the new station, commercial and self-haul customers use separate entrances and separate sections of the transfer building. Commercial and other large, automated dump vehicles enter directly onto a flat receiving floor where they can unload garbage, organics, clean wood, and scrap metal. Self-haul vehicles enter onto a raised tipping floor. To dispose of garbage they back their vehicles to a safety wall and unload over the wall onto the lower receiving floor. Garbage is pushed into a compactor chute at the south end of the receiving floor, which provides a gravity feed for a waste compactor located in the lower tunnel level of the station. The lower floor has provisions for the installation of a second compactor if needed. Containers for recyclables such as scrap metal and appliances are located at one end of the building; chutes for recycling organics and clean wood are located nearby.

In the transfer building, the large, flat floor design gives the facility the ability to accept surges of waste. Waste can continue to be received even if all trailers on site are full. In an emergency, if the compactor is not functioning, solid waste may be loaded into trailers through top load chutes. The maximum facility capacity is approximately 9,000 cubic yards on the receiving floor and 25 full trailers.

The Shoreline station was designed to maximize capacity to accept recyclables. The division collaborated with the host city and three other nearby cities to determine the initial list of materials to collect at the new station. Materials added to the recyclables collected include yard waste, clean wood, and scrap

metal. The station also has the built-in flexibility to accept additional or different recyclables as markets develop and customer needs change.

To minimize possible traffic impacts of the transfer station on the host community, the division collaborated with King County's Metro Transit on an agreement with the Washington State Department of Transportation to allow solid waste transfer trailers to share Metro's dedicated access ramps to and from the adjacent Interstate 5. This arrangement will keep solid waste trucks off neighborhood streets.

In 1973, King County adopted legislation creating the 1% for Art program, whereby capital construction projects set aside 1 percent of the budget for above-grade portions of the project, less property cost, to fund public art work. The artist selected for this project, Carol de Pelecyn, worked with the Shoreline/Lake Forest Park Arts Council, the 4 Culture Artist Selection Committee, the City of Shoreline, and the division to develop artistic design elements for the new station. The artist's design concepts call for us to question how our choices affect the environment and consider other uses for items before we throw them away.

The Shoreline facility marked a change in 1) how to approach the planning of new facilities—incorporating early community involvement; 2) how to build them—using the greenest elements possible; and 3) how to operate them—increasing recycling now, with the flexibility to expand as new markets emerge in the future.

The new Factoria Recycling and Transfer Station ~~will be~~ being built on the existing site and adjacent property purchased by the division for construction of a new facility. ~~The division is planning to maintain some level of service during construction of the new station; final plans will be made when permitting and design are complete. At the beginning of 2013, the permitting process was ongoing. Construction of the new Factoria facility started in the summer of 2014. The new transfer building will open in 2016, and the old building will be demolished and a HHW facility will be built and open in 2017.~~

A new Northeast Recycling and Transfer station will be sited and constructed to replace the existing Houghton station, while a new South County station will replace the current facility in Algona. The division is committed to closing the Houghton and Algona stations ~~after the new stations are opened~~ when replacement capacity is available.

All new stations will be built to the same standards of service and sustainability as the Shoreline and Bow Lake Recycling and Transfer Stations. There will be differences to accommodate community needs (e.g., ~~Factoria will maintain a stationary household hazardous waste facility~~), and each station will be appropriately designed to meet tonnage and transaction requirements. All stations will have improved capacity, waste compactors, and additional space for recycling more materials. The capacity to accept yard waste and other recyclables from commercial collection companies and to sort and remove recyclables from mixed loads will also be considered for new transfer facilities. In accordance with the County's green building ordinance ~~For each new station,~~ the division will seek the highest appropriate LEED Gold certification for the Factoria Recycling and Transfer Station and LEED Platinum for each station thereafter.

Commented [SWD23]: Update pending Transfer Plan review.

Commented [SWD24]: Update if needed pending Transfer Plan review.

The timeline for completing the siting, design, construction, and closure of the urban transfer stations is shown in Table 5-4.

Insert Table 5-4 ~~Timeline for the facility renovation plan~~

Commented [SWD25]: Revise pending Transfer Plan review.

EVALUATION AND PLANNING FOR THE RURAL TRANSFER FACILITIES

Historically, the rural areas were served by small community landfills. As those landfills closed, most were replaced by either a transfer station or a drop box; the Duvall and Hobart (near Maple Valley) landfills were closed without replacement. Currently, rural King County is served by two recycling and transfer stations, in Enumclaw and on Vashon Island, and two drop boxes, in North Bend (Cedar Falls) and Skykomish.

~~In 2007, the division applied the same 17 criteria used for the urban stations to the rural facilities. Because the drop boxes are essentially collection containers covered by roof structures, there is no building per se to evaluate, so many of the criteria did not apply. Criteria specific to the rural system were not developed because a preliminary look indicated that the rural facilities, for the most part, met the standards set for the urban system.~~

Countywide planning policy, FW 9d, Rural Infrastructure and Services, states that "Rural residents outside cities should anticipate lower levels of public services and infrastructure than those available in Urban Areas, maximizing self-sufficiency and independence." However, ~~t~~he rural transfer stations provide essentially the same services as the urban stations, although they may be open for fewer hours and days. To provide an appropriate level of service to area residents and the commercial collectors, the division periodically reviews the operating hours of rural facilities, and makes adjustments as needed.

The Enumclaw Recycling and Transfer Station, which opened in 1993, serves the City of Enumclaw and southeastern King County. The City of Enumclaw provides its own garbage collection service and takes the wastes to the transfer station. The station offers a wide variety of recycling opportunities and is equipped with a waste compactor. This station ~~met all of the evaluation criteria, with the~~ has the capacity to provide a wide range of services and the flexibility to respond to future needs. Add text about resource recovery at Enumclaw.

The Vashon Recycling and Transfer Station opened in 1999 to serve residents and businesses on Vashon Island. This station accepts a wide range of recyclables and is equipped with a waste compactor. Because of its remote island location, the facility accepts some C&D and special wastes for disposal that the other stations do not. ~~The Vashon station met all but one of the evaluation criteria. The only criterion not met was the level of recycling services, because yard waste is not collected at the station.~~ Past studies of customer needs at the Vashon station have indicated there is little demand for yard waste service at the facility, primarily due to composting on people's property; however, the division will periodically reevaluate the need to add yard waste collection at the site.

Commented [SWD26]: Update to include 2015 pilot organics recycling program. (Purpose is to assess willingness to separate organics and to get a better idea of the amount of organics disposed on the Island.)

The drop boxes are scaled-down facilities, designed to provide cost-effective, convenient drop-off services in the more remote areas of the county. The Cedar Falls Drop Box, which opened in 1990,

serves self-haulers in the North Bend area. It has three containers – two for garbage and one for yard waste – and provides a collection area for some recyclables. This facility met all applicable evaluation criteria except for vehicle capacity, which is primarily due to heavy weekend use. Currently, one scale is shared by both inbound and outbound traffic, which can lead to backups on weekends when the station is most busy. The division is considering a number of improvements to this facility, including a second scale to address heavy weekend use, another container for garbage or yard waste collection, and expanded recycling opportunities.

The most remote facility operated by the division is a drop box in the Town of Skykomish. Built in 1980, the drop box serves Skykomish and the communities of Grotto and Baring. Skykomish provides its own garbage collection service and takes the wastes to the Skykomish Drop Box. The drop box is also used by self-haulers, who can bring garbage and recyclables to the facility. The Skykomish facility is unstaffed; payment is made at an automated gate using a credit or debit card or pre-paid solid waste disposal card. There are cameras at the site to monitor activities, and division staff makes regular visits to the site to perform maintenance. In addition, staff from the King County Road Services Division ~~has a~~ facility next door, ~~from which Road's staff help~~ helps monitor the site. The drop box met all the applicable evaluation criteria and appears to provide an appropriate level of service for the area. The facility received a new roof in 2008, after the old roof collapsed under record snowfall in January of that year.

Some rural area customers may be affected by changes to the urban transfer system, primarily self-haulers who currently use the Houghton or Renton transfer stations. Depending on where new urban facilities in Northeast and South County are eventually sited, they may or may not adequately meet the service needs of rural areas. Should it be necessary, the division may consider siting drop box facilities in these areas to serve residents. Construction of regional transfer stations in these areas is not being considered as it would be inconsistent with countywide planning policy LU-21, which states, "Regional public facilities which directly serve the public shall be discouraged from locating in Rural Areas." The division recommends deferring decisions about whether to site drop boxes in these potentially underserved areas and whether to close the Renton transfer station until after the new urban transfer stations have been sited and the impact on service capacity has been fully evaluated.

Add text or sidebars about resource recovery and anaerobic digestion – either/both may be incorporated into urban and/or rural facilities.

CITY MITIGATION

Transfer stations provide an essential and beneficial public service. However, the stations have the potential to cause undesirable impacts on host cities and neighboring communities, such as increased litter, odor, noise, road/curb damage, and traffic, as well as aesthetic impacts. The division works to mitigate these impacts in a number of ways, such as collecting litter, landscaping on and around the site, limiting waste kept on-site overnight to reduce the potential for odor, making road modifications, and siting facilities on or near major roadways to keep traffic off local streets.

Commented [SWD27]: Update pending Transfer Plan review.

Commented [SWD28]: 2012 (most recent) policy is the same.

As of 2015, seven cities in the division's service area ~~currently~~ have county-owned transfer facilities within their boundaries:

- **Algona** – the Algona Transfer Station
- **Bellevue** – the Factoria Transfer Station
- **Enumclaw** – the Enumclaw Recycling and Transfer Station
- **Kirkland** – the Houghton Transfer Station
- **Renton** – the Renton Transfer Station
- **Shoreline** – the Shoreline Recycling and Transfer Station
- **Tukwila** – the Bow Lake Recycling and Transfer Station

As new transfer stations are constructed ~~in the near future~~, the division will work with host and neighboring cities to build stations that are compatible with the surrounding community. For example, during the design of the Shoreline Recycling and Transfer Station, the division worked closely with the community to identify impacts and mitigation measures. One result is that transfer trailers drive directly from the station onto Interstate 5 using King County Metro Transit's dedicated freeway ramps rather than city streets for access. Sidewalks on nearby streets were improved; a new walking path was constructed at nearby Ronald Bog Park; trees were planted; and the portion of Thornton Creek that flows through the site underwent significant restoration. The station building was also moved farther from residences and is fully enclosed to mitigate impacts from noise, odor, and dust. While specific mitigation measures will vary depending on the site, all new transfer station buildings will be fully enclosed.

The division has also worked closely with the City of Bellevue on the replacement of the Factoria Transfer Station. A new facility was to be constructed on property that fronts Interstate 90 (I-90) adjacent to the south side of the current station. However, as a result of discussions with Bellevue, the division purchased property adjacent to the current station to the northwest on which to build the new facility. After construction of the new recycling and transfer station, the division plans to sell the property that fronts I-90, so it will be available for commercial development as was desired by the City of Bellevue.

In the ~~recently negotiated~~ *Amended and Restated Solid Waste Interlocal Agreement* (included in its entirety in Appendix B), which identifies the roles and responsibilities of the county and the cities in the regional solid waste system, the county agrees to collaborate with host and neighboring cities on both environmental review and project permitting. Additionally, the new ILA recognizes that in accordance with RCW 36.58.080 a city is authorized to charge counties to mitigate impacts directly attributable to a county-owned solid waste facility. It must be established that such charges are reasonably necessary to mitigate impacts and the revenue generated may only be expended to mitigate the impacts. Direct impacts may include wear and tear on infrastructure, including roads. The city and county will work cooperatively to determine impacts and appropriate mitigation payments and will document any agreement. Mitigation, including any necessary analysis, is a cost of the solid waste system and as such would need to be included in the solid waste rate.

TRANSFER FACILITY SITING

As described earlier in this chapter, the need for new transfer facilities in the Northeast and South County service areas was identified through a comprehensive analysis of the transfer system network, with extensive involvement from the division's advisory committees. While general areas for site locations were identified (Figure 5-5), specific sites or specific site selection criteria were not.

The siting of a transfer facility is based on the technical requirements of operations and site constraints, such as site size and shape; however, a successful siting effort must also be tailored to address the needs and concerns of the service area communities. The siting process involves a number of steps – from development of site selection criteria to final selection of a site – and public involvement plays an important role each step of the way. The following section describes how the division has begun to implement the standards and practices developed for transfer station siting during the planning process in its search for a new south county facility site.

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SIDEBAR

The U.S. Environmental Protection Agency Identifies Siting Considerations

Siting a transfer facility is a multi-dimensional, multi-step process. The U.S. Environmental Protection Agency identifies the following issues that must be considered when siting solid waste facilities:

- Environmental and health risks – air quality and transportation
- Economic issues – effects on property values and construction and operating costs
- Social issues – equity in site choices, aesthetics, and effects on community image
- Political issues – local elections and the vested interest of community groups

(Source: Sites for Our Solid Waste: A Guidebook for Effective Public Involvement. 1990. U.S. Environmental Protection Agency; Office of Policy, Planning, and Evaluation; Office of Solid Waste.)

Siting a New South County Recycling and Transfer Station

The search for a site to replace the Algona Transfer Station with a new South County Recycling and Transfer Station (SCRTS) began in 2012. The new station will be located in or near the same communities that are served by the current Algona station – Algona, Auburn, Federal Way, and Pacific.

A Siting Advisory Committee (SAC) was formed to advise the division from a community and system user perspective by identifying community concerns and impacts, developing criteria used to evaluate potential sites, and expressing opinions and preferences. SAC members can include representatives from cities, local agencies and businesses, chambers of commerce, school districts, commercial garbage and recycling collection companies, transfer station users, environmental and neighborhood groups, tribes, and interested citizens.

In addition to forming an SAC, the division worked to ensure that members of the communities to be served by the new station were aware of the project; were able to receive information about the

Commented [SWD31]: Update this section.

project; and had opportunities to give input on the project. Public information efforts to non-English speaking communities included translating public information materials into Spanish, Russian, and Korean and providing translators at public meetings.

The division cast a wide net in searching for suitable sites. Two key resources were used: the county's Geographic Information Services (GIS) and professional real estate services. Search filters, including site size, zoning, proximity to major roadways, and critical areas, were used to narrow the number of potential sites.

Three types of criteria were developed to evaluate the suitability of prospective sites.

1. Pass/fail criteria consider a variety of regulatory, policy and practical considerations; for example, the site must be located outside the floodplain. Pass/fail criteria establish minimum standards that must be met to qualify for further consideration. These criteria were used to evaluate all sites that were identified for consideration. Sites not meeting one or more of the pass/fail criteria were eliminated from further consideration.
2. Functional criteria provide guidance on optimal engineering, operating, and transportation conditions and consider the site's suitability for use as a transfer station. It is unlikely that any one site will meet all functional criteria – there is no perfect site. Rather, each criterion's relative importance must be considered in order to identify the best site.
3. Community Criteria were developed by the SAC to consider factors of particular importance to the community.

As of February 2013, the number of sites had been narrowed and environmental review begun. An environmental impact statement (EIS) will compare the final sites and a "no-build" alternative. An EIS identifies probable significant adverse impacts of the proposed project and potential means for mitigating those impacts. Up-to-date information about the SCRTS siting process, including a complete listing of criteria, can be found on the division's website <http://your.kingcounty.gov/solidwaste/facilities/algona/index.asp>.

Commented [SWD32]: Update

Siting a New Northeast Recycling and Transfer Station

The division expects to begin the process for siting a recycling and transfer station to replace the Houghton Transfer Station later in 2013. The division will use the experience gained in the south county to continue to refine its approach to siting, including equitable community involvement. Community siting criteria specific to the concerns of the northeast service area will be developed by members of that community.

Commented [SWD33]: Update pending Transfer Plan review

TRANSFER SERVICES AFTER AN EMERGENCY

Relatively common emergencies, such as seasonal flooding and winter storms, as well as major events, such as earthquakes, can create a significant amount of debris. Debris generated during these types of events can obstruct roadways, cause power outages, and interrupt essential services. A coordinated and effective plan ensures that debris is properly managed to lessen the impacts on communities, the economy, and the environment in the immediate aftermath of an emergency without causing additional problems later in recovery.

To minimize disruptions and provide for efficient management of disaster debris, the division prepared the *King County Operational Disaster Debris Management Plan* (Debris Management Plan; KCSWD 2009) for unincorporated King County. The Debris Management Plan is intended to facilitate rapid response and recovery efforts during a disaster. The plan will be reviewed annually, prior to the storm season, and updated as needed.

The Debris Management Plan supports the 37 incorporated cities that are part of the King County solid waste system by providing a framework and making recommendations that can be used by the cities to develop their own operational disaster debris management plans. The cities have the flexibility to develop a debris management plan that best addresses their individual needs without compromising continuity within the county. The regional debris management planning process was conducted under the direction of the Seattle Urban Area Security Initiative, guided by the federal Homeland Security Department and the State of Washington's Emergency Management Division. The City of Seattle has its own debris management plan and the City of Milton is participating in Pierce County's debris management program.

The county's Debris Management Plan stipulates that during emergency response and recovery, the roles within the King County solid waste system do not change. This means that the division will continue to accept municipal solid waste at the transfer stations to the extent possible and will maximize recycling in accordance with RCW 70.95.010 (8) and KCC Title 10. The transfer facilities will not be used for disposal of emergency debris that could be recycled.

The debris created by a larger event, such as an earthquake, would likely consist primarily of recyclable materials, such as concrete, metal, and wood. The division's Debris Management Plan is coordinated with emergency plans prepared by other jurisdictions to maximize the recycling of these materials. The division works with the King County Regional Communications and Emergency Coordination Center (RCECC) and the Local Hazardous Waste Management Program to coordinate public information and help cities and residents identify recycling options in the event of a debris-causing emergency. Recycling the majority of emergency debris will maximize the division's capacity to continue to handle municipal solid waste over the short- and long-term.

In the event of an emergency, transfer services may be suspended in the short-term. The division's priorities are to:

1. Ensure the safety of staff and customers
2. Confirm the structural integrity of facilities and environmental control systems
3. Coordinate with the RCECC to determine any immediate needs for division staff or equipment
4. Resume service

The division will attempt to maximize the use of existing transfer facilities after an emergency through operational measures such as increased staffing or hours. If some transfer facilities are closed or damaged as a result of the event, customers will be rerouted to remaining stations, and commercial haulers may be routed directly to Cedar Hills. Additionally, the division and the cities may

establish temporary debris management sites where debris can be stored until it can be sorted for recycling or proper disposal. It is recommended that potential sites in unincorporated King County and in cities be identified by each jurisdiction in advance of an emergency. The acceptance policies at these sites would be determined in response to the nature of the event and the debris that is generated.