Transfer Plan Review

Introduction

King County Ordinance 17619, adopted by the King County Council on July 8, 2013, directed the King County Solid Waste Division to conduct a review of the 2006 *Solid Waste Transfer and Waste Management Plan* (Transfer Plan). This Plan confirmed the current locations of transfer stations was efficiently distributed throughout King County with adequate service hours to meet the needs of our customers; however, Algona, Bow Lake, Factoria, Houghton, and Renton, which were built in the mid-1960s, all failed to meet level of service standards. All of them were operating over capacity, did not provide desired levels of recycling, and failed to meet safety goals. The adopted plan requires major transfer system upgrades in order to continue providing environmentally sound solid waste disposal services efficiently and effectively and at reasonable rates. The limitations of these functionally obsolete facilities have not improved with time despite a tonnage decline since the Transfer Plan was completed.

The analysis in this review of the Transfer Plan has shown that alternatives that do not build one or more of the planned transfer facilities would result in lower capital costs for King County but increase overall costs for a significant number of residential and business customers because of the higher collection costs. Building fewer transfer station would also reduce services and increase environmental impacts Future capital cost savings may be realized through phasing, value engineering and alternative project financing and delivery methods.

The consequence of lowering capital costs by building fewer transfer station is a that it transfers costs to the commercial garbage haulers who will raise curbside collection rates correspondingly. Additionally, in time, capital costs will be paid off while collection cost increases will be ongoing. Capital costs are uniformly distributed among all system users, while collection costs are dependent on transfer system configuration. The Northeast and South county regions are forecasted to experience the greatest population growth in the county. Alternatives that do not provide transfer facilities in these regions will not only leave those areas underserved, but will raise collection costs in some of the system's lowest income areas and areas with the densest populations.

Service levels are highest with a larger number of facilities. Alternatives with fewer stations leave many customers, often those in the most populous areas of the system, with reduced services. Those customers (including commercial haulers) will have to drive farther to reach a facility. Fewer transfer stations also reduces capacity for emergency storage at the remaining stations. Although every alternative can provide sufficient tonnage capacity, several do not meet transactional (vehicle) capacity. Alternatives that retain existing stations as self-haul only facilities can mitigate drive time issues for self-haulers, but present a number of other service concerns. These aging facilities can be renovated to continue operating, but cannot be expanded to provide adequate recycling services, meet vehicle capacity demands or mitigate for community impacts e.g. dust, noise and odor.

Both the current adopted (2001) and draft 2013 *Comprehensive Solid Waste Management Plan*s call for maximizing recycling. In 2012, approximately 115,000 tons of recyclable materials were disposed by self-haulers and buried at Cedar Hills. The current self-haul recycling rate is only five percent, but must increase to 35 percent if we are to meet the 70 percent goal developed jointly by the division and its advisory committees. Currently, only Shoreline and Bow Lake are capable of supporting such growth in self-haul recycling. As a general rule, traffic impacts and resulting GHG emissions are minimized by

increasing the number of facilities, by distributing facilities evenly throughout the service area, and by compacting waste before hauling to disposal (compactors reduce transfer trailer trips by about one third). With fewer facilities customers would drive further to reach facilities, increasing traffic and GHG emissions.

Every alternative presents some level of risk including siting, timing new construction, and failing to meet satisfactory levels of service to our customers. Each alternative presents a unique combination of risks that must be considered together with other factors.

The analysis of the alternatives described in this report and preliminary stakeholder feedback indicate that the Transfer Plan (a scenario which was called the Base Alternative for this analysis) is still sound. However, the review shows the need to reconsider the timing and phasing in the implementation of the remaining new facilities.

King County seeks to provide sound solid waste disposal and recycling services in a way that is cost effective and equitable for everyone. This means making our services equally available to all of the residences and businesses within our system while ensuring that any potential negative impacts of providing solid waste service do not fall disproportionately on a single community. Both of these approaches benefit from a regional system in which full-service recycling and transfer facilities are distributed throughout the system.

Purpose of review

King County Ordinance 17619 called for a review of the Transfer Plan before continuing with implementation.

The purpose of this review is to:

1. Determine if changes are needed to ensure that the transfer system is sized/configured appropriately to meet current and anticipated needs and;
2. Determine whether changes could be made that could reduce future expenditures while still meeting desired service objectives and levels.

This report summarizes the analysis and findings of the review in response to Ordinance 17619, Section 56, P1. As called for in Section A of the proviso, this report addresses:

1. Tonnage projections based on waste volumes from cities that have indicated commitment to the regional solid waste system through 2040 through approval of the Amended and Restated Solid Waste Interlocal Agreement;
2. Revenue projections based on waste volumes from cities that have indicated commitment to the regional solid waste system through 2040 through approval of the Amended and Restated Solid Waste Interlocal Agreement;
3. Overall costs of the region-wide transfer station upgrade;
4. Functionality and service alternatives at the respective transfer stations;
5. Level of service criteria addressed in the 2006 Transfer Plan, with particular attention to options for revision to the travel time criterion requiring that ninety percent of a station's users be within thirty minutes' travel time;

6. Retention and repair costs of the existing Factoria transfer station including itemized cost estimates for retention and repair and updated long-term tonnage projections; and
7. Recommendation "4" of the King County Performance Audit of Solid Waste Transfer Station Capital Projects, which requires systematic analysis of incremental cost impacts of the number, capacities and functionality of the transfer stations and assessment of project financing and delivery methods.

In accordance with the requirements of Section B of the proviso, the division undertook this review and report with the participation of stakeholder groups, including the Metropolitan Solid Waste Management Advisory Committee (MSWMAC), the Sound Cities Association (SCA), the City of Bellevue, and the Solid Waste Advisory Committee (SWAC), among others. Documentation of stakeholder engagement and feedback received from stakeholders are included in Appendix A.

Transfer Plan review process

This draft report is the result of a review process carried out in a collaborative, transparent manner with significant involvement from stakeholders. There will be a two week comment period during which written comments will be accepted. All written comments received will be addressed in a responsiveness summary and included in full in the final report.

For the review of the Transfer Plan, a series of three workshops were held in July, August, and September 2013. These were open to all interested parties; they were attended by:

- MSWMAC members,
- SWAC members,
- SCA representatives,
- Staff from 18 cities, including Bellevue
- Elected officials from XX cities
- Representatives of the four commercial solid waste haulers operating in King County
- Interested citizens,
- King County Auditor's staff, and
- King County Council staff.

The presentations, handouts, and supporting analysis provided at each of these workshops are available on the division's website. All questions and feedback received during the workshops are included in the workshop summaries, which are also available on the division's website. As recommended by the King County Auditor, the division analyzed the incremental cost impacts of the number of transfer stations by considering the effect on capital, operating, and collection costs if one or more of the stations were not constructed. This analysis can be found in Appendix B of this report and in the Workshop 3 materials. The cost and service impacts of functionalities of the transfer stations – compaction, self-haul and recycling (also see alternatives description), and storage capacity – were also studied. As part of the review process, the division presented information to stakeholders about project delivery and financing methods and Ordinance 17437, which requires that the division analyze for the South County and Northeast projects at least the following procurement methods: competitive negotiated procurement under chapter 36.58 RCW, traditional public works bidding, developer-delivered, with and without private financing, and design-build.

In addition to the workshops, the division provided updates to the advisory committees during their normally scheduled meetings each month for the duration of the process. Feedback and discussion at those meetings is summarized in the meeting minutes, which are available online.

The division provided briefings to:

- SCA,
- Regional Policy Committee (RPC), and
- meetings with city managers, mayors, and staff of four cities.

Materials from these additional presentations are also provided on the website.

In collaboration with SCA, SWAC, and MSWMAC, the division developed the following principles to guide the review process:

Guiding principles

- The system shall maximize ratepayer value and ensure that participants in King County's solid waste system have access to efficient and reliable regional solid waste handling and disposal services at rates as low as reasonably possible, consistent with sound financial and environmental stewardship.
- Future system facilities will be designed to provide flexibility to accommodate changes in growth, anticipated future customer needs, and future waste disposal options and technologies.
- The system complies with all applicable state and federal law, including requirements for storage for disasters.
- This review will comply with the requirements of Ordinance 17619.
- This review will be conducted in a transparent and collaborative manner between King County and its stakeholders, so that all parties have timely access to relevant data and determining factors for decision making.

Background

In 1992, King County adopted a comprehensive solid waste management plan calling for the renovation of its aging urban transfer system. Without strong regional consensus about the need for improvements, a rate increase to support this plan was not approved. Since 1992, population growth, technological changes, and aging infrastructure have intensified the need for significant improvements. The 2001 *Comprehensive Solid Waste Management Plan* emphasized this need again.

Recognizing the need for a more coordinated approach to planning and decision-making, in 2004, the Metropolitan King County Council adopted Ordinance 14971, which prioritized evaluation of the urban transfer station network as an integral part of the analysis for the next comprehensive solid waste management plan, and established a process for collaborative participation by the cities in solid waste planning. This process led to the formation of the MSWMAC.

Codified in KCC 10.25.110, Ordinance 14971 outlined an iterative, collaborative process that would culminate in a package of recommendations for the urban transfer system. Along with division staff, SWAC, MSWMAC, and an Interjurisdictional Technical Staff Group comprised of staff from cities and from the King County Council analyzed the solid waste system through four milestone reports.

Milestone Reports 1 and 2 developed 17 criteria for evaluating the stations. These fall into three general categories of information:

1) level of service to users,
2) station capacity to handle solid waste and recyclable materials, and
3) the local and regional effects of each facility.

These criteria were applied to the existing urban transfer stations – Algona, Bow Lake, Factoria, Houghton, and Renton. Because Shoreline Recycling and Transfer Station was under construction at the time, it was not evaluated. Each of the five transfer stations failed to meet between seven and 12 of the evaluation criteria; all of them were operating over capacity and failed to meet safety goals. These detailed evaluations demonstrated the need for major transfer system upgrades in order to continue providing environmentally sound solid waste disposal services efficiently and effectively and at reasonable rates.

Milestone Report 3 discussed options for public and private sector roles in solid waste and recycling in King County. The recommendation was to retain the current mix of public-private operations where the private sector:

- provides curbside collection of garbage, recyclables, organics (yard waste, food scraps, and food-soiled paper), and construction and demolition debris (C&D),
- processes recyclable materials and C&D,

and the division:

- provides solid waste transfer facilities,
- maintains the Cedar Hills landfill for disposal until it reaches capacity and closes, contracting for disposal once the landfill closes.

Milestone Report 4 identified alternative configurations for the urban transfer station network and potential disposal options for the future. It also considered feasible options for long haul transport; the need for an intermodal facility or facilities; and the timing of waste export or other method of final disposal. A preferred alternative for the transfer system was identified.

These four milestone reports culminated in the Transfer Plan, which provides recommendations for upgrading the urban transfer station system; methods for extending the lifespan of Cedar Hills; and options for preparing the landfill for eventual closure. The Transfer Plan called 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 would 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 division's stakeholders had a significant role in shaping the recommendations in the Transfer Plan. At the conclusion of the process, both SWAC and MSWMAC recommended the plan to the King County Executive and the County Council.

Before final approval of the Transfer Plan, the County Council requested an independent third-party review of the Transfer Plan, which was conducted by the firm Gershman, Brickner & Bratton, Inc. (GBB). GBB fully supported the primary objectives of the plan: to modernize the transfer station system and maximize the lifespan of the Cedar Hills landfill. The County Council unanimously approved the Transfer Plan in December 2007.

Since the approval of the Transfer Plan, the division has completed construction of the new Bow Lake Recycling and Transfer Station in Tukwila; completed design and permitting of a new Factoria Recycling

and Transfer Station in Bellevue; and begun the siting process for a new South County Recycling and Transfer Station to replace the aging Algona facility.

The new Bow Lake Recycling and Transfer Station (RTS) is capable of handling one third of the system's waste in a fully enclosed building reduces noise, litter, and odors. It is projected to achieve a Gold level certification through the internationally recognized Leadership in Energy and Environmental Design (LEED) Rating System.

Factors for Review

The division and its stakeholders considered all of this background information when evaluating the Transfer Plan against today's conditions of reduced tonnage and extended interlocal agreements with cities generating approximately 90 percent of the system's tonnage. For this review, at the request of SCA and other key stakeholders, the division also analyzed eight modifications to the Transfer Plan. The impacts to cost, service, and the environment for each of the nine total alternatives were evaluated. These included the existing Base Alternative plus eight new alternatives (Tables 1.a and 1.b) that did not build all planned new facilities or that maintained as self-haul only facilities currently planned for closure.

Cost

To answer the central question of whether costs could be reduced while still providing the desired level of service, the division examined total ratepayer impacts of the various alternatives, comprised of the components below. Summary capital cost estimates are provided in the descriptions of the alternatives. Additional cost information can be found in Appendix B.

Capital cost

Capital costs are influenced by the number of facilities and the size and complexity of those facilities. The division pays for capital and other costs through disposal rates. The current rate includes debt service for the Shoreline and Bow Lake stations. The current rate includes payments on the capital costs of the Shoreline and Bow Lake stations.

This review included costs involved in construction of a new transfer facility with detailed consideration of cost drivers (both those of particular interest to stakeholders and those identified as cost drivers in a 2011 Performance Audit of Solid Waste Transfer Station Capital Projects). Cost drivers included installation of waste compactors, space to provide self-haul and recycling services, and emergency storage capacity. Capital costs also include possible renovation of existing facilities, such as Algona, to operate as self-haul only facilities. These analyses are provided in Appendix B.

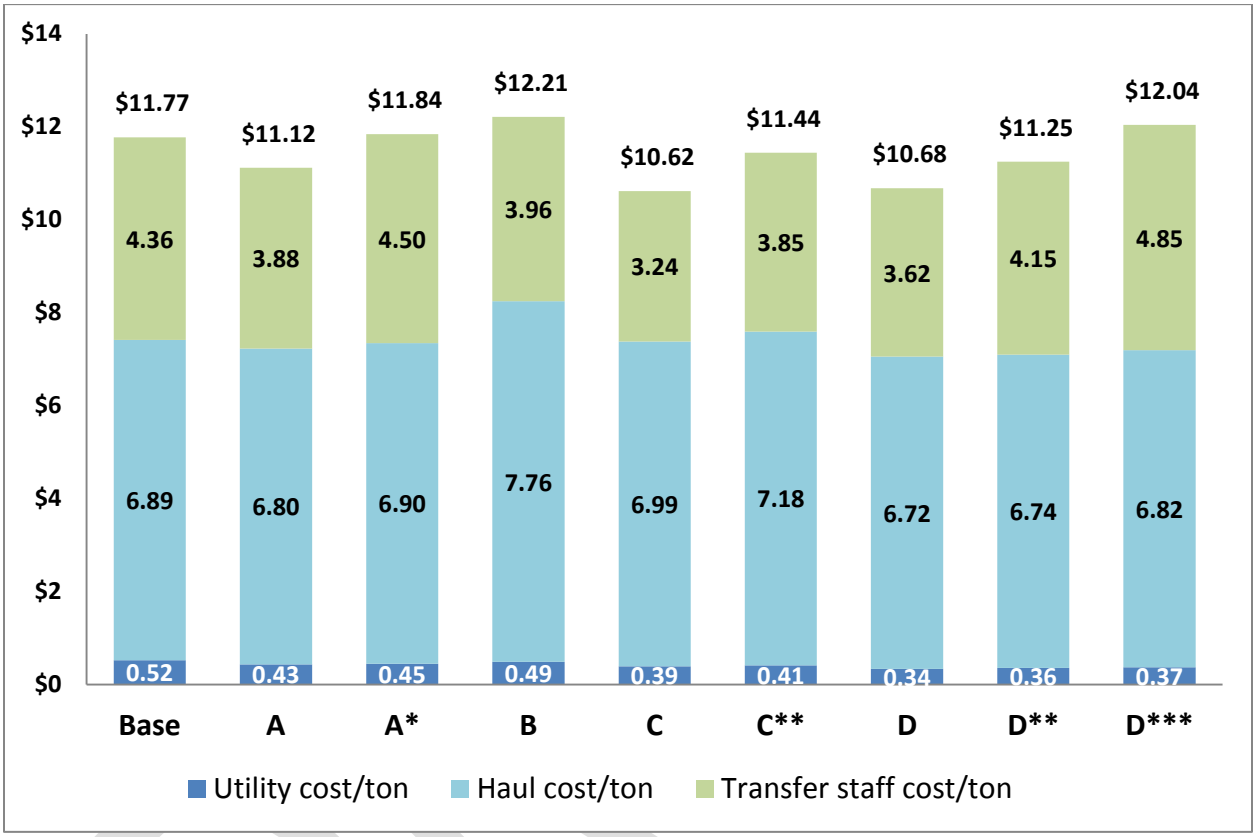
Operating cost

Operating costs include many varied costs, some of which are fixed or overhead costs, such as payroll, so to distinguish between alternatives, this review focused on the primary variable cost components. Three factors were used for this cost comparison:

1. Operating hours – the more hours a facility is open the higher the cost of staffing.
2. Distance to disposal – the further a transfer station is from the disposal location the higher the hauling cost. This is the most significant factor because it involves staff time, fuel, and equipment. It is also the most uncertain because locations for two of the transfer stations and disposal after Cedar Hills closes are unknown, so the analysis used proxy locations.
3. Tipping area square footage – the larger the facility the higher the cost of utilities.

These estimates are provided for the purpose of comparing alternatives only; to obtain a cost per ton, the tonnage estimate for 2027[1] was used; costs are shown in 2013 dollars.

Figure 1 – Estimated Solid Waste Division Operating Cost per Ton per Alternative (2013$, 2027 tonnage)



Note: See Tables 1.a and 1.b for a summary of the alternatives.

Collection cost

Overall collection costs increase when there are fewer facilities to serve the commercial haulers who provide collection service for homes and businesses. Some transfer system alternatives that would reduce capital costs for County facilities would increase costs to the commercial solid waste collection companies – and ultimately ratepayers. Unlike capital costs, which are uniformly distributed throughout the system, increased collection costs are not equally distributed among ratepayers. Increased collection costs resulting from longer hauling distances will raise rates for residents in areas that are not served by transfer facilities. Thus it was important to consider collection costs in order to understand the true impact on residents and businesses of any transfer system alternative.

All three commercial hauling companies serving the areas evaluated in the Transfer Plan responded to the division's request for information. They provided preliminary estimates of collection-cost impacts that would result from changes to the Base Plan. Those increased costs would be passed on to residents

[1] There is no particular significance to 2027. Dollar amounts would vary, but the comparison would be same regardless of the year (after full implementation of the alternative).

and businesses. The division believes that the estimates provide a reasonable approximation of potential increased costs. As one hauler noted, "A more thorough assessment would necessitate studies on estimated traffic patterns and facility wait times, as well as the identification of specific locations for the proposed South County and Northeast County transfer stations. Consideration of these variables may significantly affect the cost estimates." A summary of the information supplied by the haulers can be found in Table 5. The complete information provided by haulers is in Appendix B.

The results show that collection costs would be lowest under the Base Alternative, and rise as the number of facilities serving commercial haulers decreases and collection trucks need to be on the road for longer distances, burning more fuel and spending more time in traffic. The haulers' capital costs increase with more trucks traveling longer routes. In some cases capital costs increase up to $15 million (Alternatives C and D) for one hauler alone. Labor costs would rise correspondingly, up to $4.5 million for that same hauler in additional staff hours per year. The Northeast and South County service areas are forecast to have the highest growth, and become the most densely populated areas in King County by 2035. Alternatives that do not build facilities in either of those areas (Alternatives D**and D***) will impact collection rates for the greatest number of people. Alternatives that do not build Factoria or South County (Alternatives B, C, and C**) will result in the highest rates for customers in those service areas; one hauler estimates a rate increase of five percent over the Base Alternative.

Service and Capacity

Seventeen criteria for level of service (LOS) were developed for the original Transfer Plan. These criteria fall into three general categories:

1. Level of Service to Users – Criteria 1 through 4 define standards for acceptable user experience, such as drive time and speed of service
2. Station Capacity for Solid waste and Recycling – Criteria 5 through 12 define operational standards for a cost-effective and efficient system
3. Local and Regional Effects of Facility – Criteria 13 through 17 set standards for impacts to local roadways and nearby land uses; although these criteria are separate from the requirements of King County's Equity and Social Justice Ordinance, they provide an opportunity to begin discussions of ESJ.

This review process reconsidered whether the original criteria were still appropriate standards for measuring level of service. As required by the ordinance, the division thoroughly evaluated Criterion 1, travel-time to reach a transfer facility. Analysis of drive time for each alternative is presented in Appendix C. The division found that seven of the nine alternatives met this criterion. Alternatives C and D failed this criterion because of limited self-haul service in the South County area. The analysis used drive times provided by Google Maps.

Criteria in the second group, those relating to station capacity, are critical from an operational perspective, and can have cascading effects on other criteria. For both the original planning process and the current review, a level of service score no lower than "C" for the duration of the planning period was used as the standard for acceptable service. This means that the system must be able to accommodate vehicles and tonnage at all times of day except occasional peak hours; the optimal operating capacity should be exceeded for only five to 10 percent of operating hours.

For this review, only one criterion needed to be somewhat redefined – Criterion 8, "room to expand on-site." This criterion originally considered whether it was possible to build a larger station on the site, which would not be an important consideration in relation to newly sited or constructed facilities. In this

analysis the criterion was redefined to determine whether space was available to expand services or to support waste conversion technology in the future.

During the development of the original Transfer Plan, these criteria were applied to each existing urban transfer station. This review applied the LOS criteria to each alternative (Table 3), evaluating the system configuration as a whole. A summary of the vehicle and tonnage capacity LOS score for each facility under each of the nine alternatives is available online.

The division has 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. The policies in the current *2001 Comprehensive Solid Waste Management Plan* and the draft *2013 Comprehensive Solid Waste Management Plan* call for the division to provide transfer service to self-haulers. Both plans also include policies to provide substantially more recycling opportunities at the transfer stations than is possible in the current facilities. However, feedback at the initial workshop indicated that stakeholders were interested in examining alternatives that would limit self-haul and recycling services. The division did develop and analyze alternatives with these limitations. Preliminary feedback from subsequent workshops, as well as past experience (such as the public response to elimination of recycling services at some stations in 2011) indicates that many stakeholders continue to value these services highly.

Environment

Environmental impacts of the system alternatives may include construction and siting impacts, greenhouse gas (GHG) emissions, and recycling opportunities. The combination of facilities in each alternative would result in unique traffic conditions and patterns, with resulting GHG emissions. This analysis reviews environmental impacts based on existing information. More detailed analysis would likely be required for any alternative other than the Base Alternative, which has already undergone environmental review under SEPA.

As a general rule, traffic impacts and resulting GHG emissions are minimized by increasing the number of facilities, by distributing facilities evenly throughout the service area, and by compacting waste before hauling to disposal (compactors reduce transfer trailer trips by about one third). With fewer facilities customers would drive further to reach facilities, increasing traffic and GHG emissions. The more customers directed to a single facility, the more concentrated traffic impacts would be on the streets neighboring that facility, although mitigation may be possible.

Both the current adopted (2001) and draft 2013 *Comprehensive Solid Waste Management Plan*s call for maximizing recycling. In 2012, approximately 115,000 tons of recyclable materials were disposed by self-haulers and buried at Cedar Hills. The current self-haul recycling rate is only five percent, but must increase to 35 percent if we are to meet the 70 percent goal developed jointly by the division and its advisory committees. Currently, only Shoreline and Bow Lake are capable of supporting such growth in self-haul recycling. The recycling options available under each alternative are shown in Table 2. Recycling rate analysis for each alternative was beyond the scope of this review; however, the LOS criteria do identify which alternatives provide sufficient infrastructure to support increased recycling. More information about recycling at transfer stations is available online. In general, recycling has far reaching environmental benefits; however, environmental analysis related to the recycling options for each alternative was beyond the scope of this review.

All alternatives assume that new transfer facilities would be fully enclosed to minimize community impacts, including noise, odor, and litter. Resembling a commercial warehouse, these buildings are much more compatible than the old open structures with a variety of surrounding land uses that may

are likely to develop over the 40-year to 50-year lifespan of the building. Some alternatives retain the current Houghton and Algona facilities, which would not be fully enclosed and would not include waste compaction. Community impacts such as noise, odor, and traffic on neighboring streets would be included in environmental review under SEPA.

Risks

Each alternative presents a unique combination of risks that must be considered together with other factors. Initial identification of risks is included in the description of each alternative.

Assumptions

In order to model the alternatives developed for this process, it was necessary to make assumptions in forecasting and in calculations where data is not yet available, for example, where might facilities that have not yet been sited be located. To predict solid waste generation over the long term, the long-term tonnage forecast model relies on well-established statistical relationships between waste generation and various economic and demographic variables, such as:

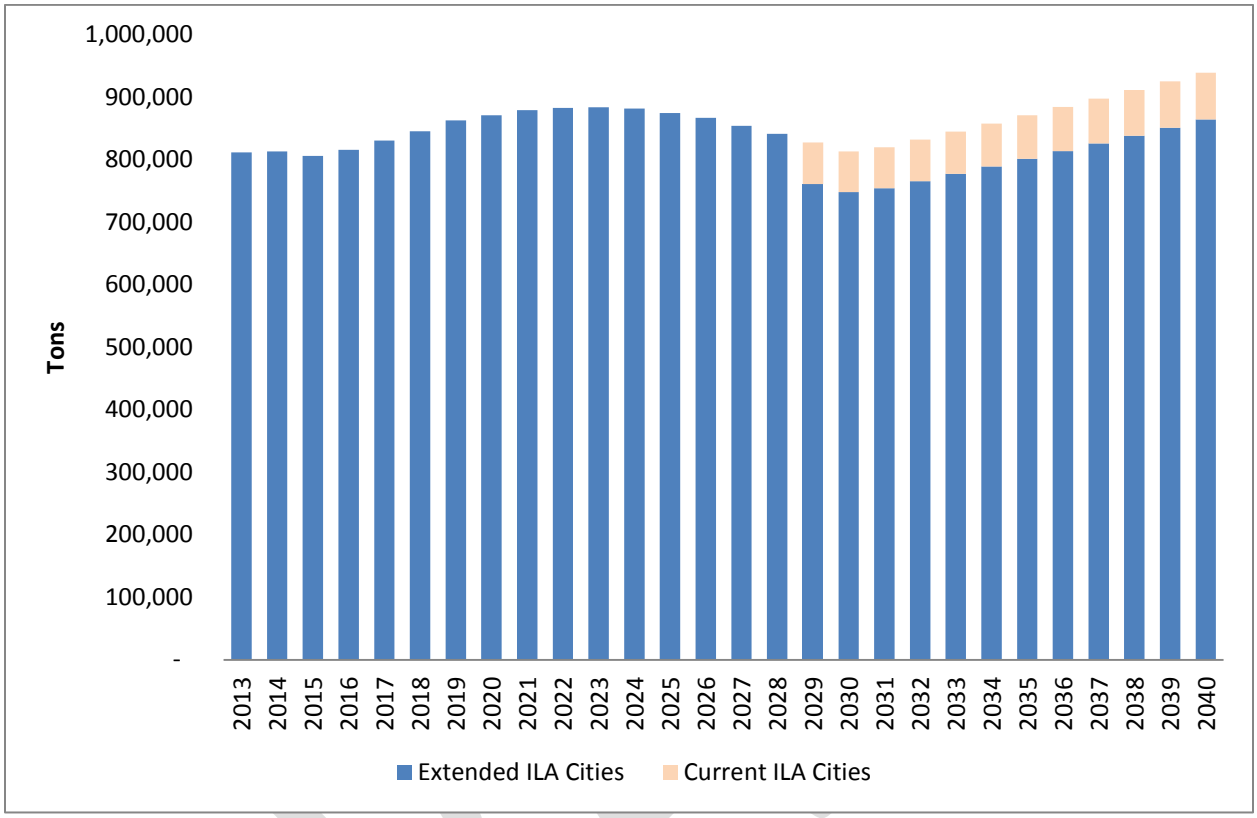
- population of the service area
- employment rates
- household size
- per capita income adjusted for inflation

Increases in population, employment, and per capita income, and decreases in household size typically lead to more consumption and hence more waste generated.

Analysis performed as part of this review used the following assumptions:

- The tonnage forecast starts with today's actual tonnage and assumes that Bellevue, Clyde Hill, Hunts Point, Medina, and Yarrow Point will leave the system July 2028 (see Figure 2 for tonnage projections)
- Where possible, facilities would be designed to meet capacity needs with a minimum LOS score of C, which is defined as able to accommodate vehicles and tonnage at all times of day except occasional peak hours (optimal operating capacity exceeded 5 to 10 percent of hours)
- All new stations would share a similar design to that of the currently designed new Factoria station, although the size would depend on capacity needs
- All new stations would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve
- Alternative project financing and delivery methods would be evaluated for each new station to identify potential cost savings
- Any limitations to self-haul would not apply to customers with a division charge account
- For planning purposes, generic locations for South County and Northeast were assigned within the service area; Cedar Hills served as a proxy disposal location
- Cost estimates are planning-level; where escalated costs are given, costs were inflated using projections from the Office of Economic and Financial Analysis
- Recycling Scenario Three (Figure 3) provided the standard for full recycling services; several scenarios do not achieve standard recycling service levels
- Revenue will be based on tonnage projections, such that:
  revenue = projected tonnage x solid waste tip fee, where tip fees are set to cover expenses
- A rate study, to be performed in 2014, will incorporate decisions resulting from this review

Figure 2 – Long-term Tonnage Forecast of Waste Disposed



Based on trends, the tonnage forecast assumes a one percent increase in recycling per year with a maximum recycling rate of 70 percent. The table above shows the tonnage from the cities that have not signed extended interlocal agreements as Non ILA Cities after June 2028. **Tonnage from those cities was excluded when evaluating the Alternatives.**

Alternatives

Five basic alternatives include the current plan as developed in 2006 (the Base Alternative), as well as four alternatives that do not build one or more of the planned new recycling and transfer stations. These five alternatives are supplemented by four variations that would close Houghton and/or Algona to commercial hauler traffic (i.e., they would be self-haul-only facilities.) This gives a total of nine alternatives for consideration.

Table 1.a – Transfer System Alternatives

	Base (Current Plan)	Alternative A	Alternative B	Alternative C	Alternative D
Open facilities	Shoreline Bow Lake Factoria Northeast South County	Shoreline Bow Lake Expanded Factoria South County	Shoreline Bow Lake Expanded Northeast South County	Shoreline Bow Lake Expanded Northeast	Shoreline Bow Lake Expanded Factoria
Closed facilities	Algona Renton Houghton	Algona Renton Houghton	Algona Renton Houghton	Algona Renton Houghton	Algona Renton Houghton
Do not build		Northeast	Factoria	Factoria South County	Northeast South County

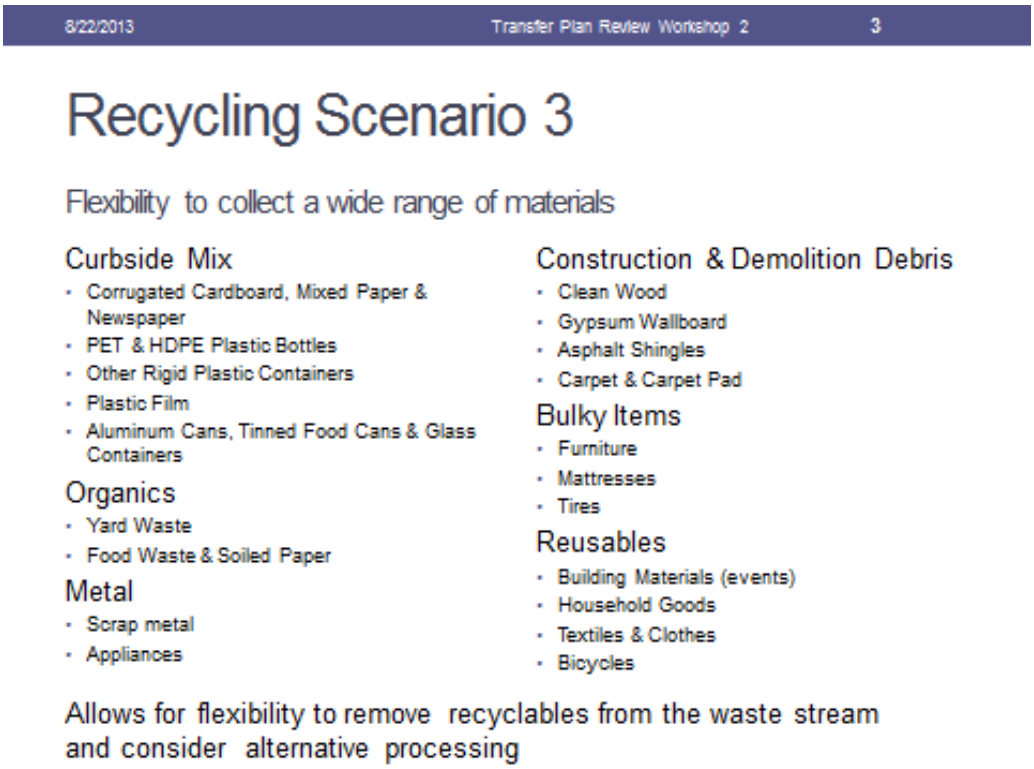
Table 1.b – Transfer System Alternatives with Self-haul Only Facilities

	Alternative A*	Alternative C**	Alternative D**	Alternative D***
Open facilities	Shoreline Bow Lake Expanded Factoria South County Houghton (self-haul only)	Shoreline Bow Lake Expanded Northeast Algona (self-haul only)	Shoreline Bow Lake Expanded Factoria Algona (self-haul only)	Shoreline Bow Lake Expanded Factoria Algona (self-haul only) Houghton (self-haul only)
Closed facilities	Algona Renton	Renton Houghton	Renton Houghton	Renton
Do not build	Northeast	Factoria South County	Northeast South County	Northeast South County

Recycling Services

The standard for recycling services was set to meet the recycling goals established in collaboration with SWAC and MSWMAC for the draft *2013 Comprehensive Solid Waste Management Plan*. It is described here in Figure 3, and was presented as "Scenario Three" at the workshops.

Figure 3 – Standard Recycling Service



Additional information about recycling at transfer stations was presented at the first workshop. That presentation is available online. The recycling services available under each alternative are described in Table 2.

Table 2 – Recycling Services by Alternative

	Base	A	A*	B	C	C**	D	D**	D***
Shoreline	Full service	Full service	Full service	Full service	Full service	Full service	Full service	Full service	Full service
Bow Lake	Full service	Full service	Full service	Full service	Weekends and limited weekday hours	Weekends and limited weekday hours	Weekends and limited weekday hours	Weekends and limited weekday hours	Weekends and limited weekday hours
Factoria	Full service	Full service	Weekends and limited weekday hours				Full service	Full service	Weekends and limited weekday hours
Northeast	Full service			Full service	Full service	Full service			
South County	Full service	Full service	Full service	Full service					
Houghton			Yard waste and limited other materials						Yard waste and limited other materials
Algona						Yard waste only		Yard waste only	Yard waste only

The updated level of service criteria were applied to each of the nine alternatives. Whereas the initial planning process used these standards to evaluate each of the existing urban transfer stations, for this review process, the standards were used to evaluate each alternative as a whole. The level of service criteria are applied to all nine alternatives in Table 3, preceding the full descriptions of each alternative.

Table 3
Transfer Plan Level-of-Service Criteria Applied to Alternatives[1]

		Base	A	A*	B	C	C**	D	D**	D***
1. Estimated time to a transfer facility within the service area for 90% of users	< 30 min = YES	YES	YES	YES	YES	NO[2]	YES	NO[3]	YES	YES
2. Time on site meets standard for 90% of trips[4]										
a. commercial vehicles	< 16 min = YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
b. business self-haulers	< 30 min = YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
c. residential self-haulers	< 30 min = YES	YES	YES	NO	YES	NO	NO	NO	NO	NO
3. Facility hours meet user demand[5]	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
4. Recycling services meet Plan policies										
a. business self-haulers	YES/NO	YES	YES	NO	YES	NO	NO	NO	NO	NO
b. residential self-haulers	YES/NO	YES	YES	NO	YES	NO	NO	NO	NO	NO
5. Vehicle capacity[6]										
a. meets 2027 forecast needs	YES/NO	YES	YES	NO	YES	NO	NO	NO	NO	NO
b. meets 2040 forecast needs	YES/NO	YES	YES	NO	YES	NO	NO	NO	NO	NO
6. Average daily handling capacity (tons)										
a. meets 2027 forecast needs	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
b. meets 2040 forecast needs	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
7. Space for 3 days' storage										
a. at time of construction	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
b. meets 2040 forecast needs	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
8. Space to expand on-site[7]	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
9. Minimum roof clearance of 25 ft.	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES

[1] Criteria applied to the overall Alternative – individual transfer station scores may vary
[2] See drive time map 8
[3] See drive time map 13
[4] Based on vehicle capacity LOS rating
[5] Hours may be adjusted at some facilities to meet user demand
[6] "NO" if one or more facilities in the alternative did not have an LOS score of at least a C – see vehicle capacity in "Alternatives Station Detail" for information about each facility
[7] This criterion has been adapted to indicate future flexibility to expand service, e.g., household hazardous waste, or to support waste conversion technology

		Base	A	A*	B	C	C**	D	D**	D***
10. Meets facility safety goals	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
11. Ability to compact waste	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
12. Safety										
a. Meets goals for structural integrity	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
b. Meets FEMA immediate occupancy standards	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
13. Meets applicable local noise ordinance levels	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
14. Meets PSCAA standards for odors	YES/NO	YES	YES	YES	YES	YES	YES	YES	YES	YES
15. Meets goals for traffic on local streets[8]										
a. Meets LOS standard	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
b. Traffic does not extend onto local streets 95% of the time	YES/NO	YES	YES	NO	YES	YES	NO	YES	NO	NO
16. 100 foot buffer between active area and nearest residence	YES/NO	YES	YES	NO	YES	YES	YES	YES	YES	NO
17. Transfer station is compatible with surrounding land use	YES/NO	YES	NO	NO	YES	YES	YES	NO	NO	NO

[8] Represents an assumed outcome based on vehicle capacity LOS rating; this criterion would need a more thorough assessment

Table 4
Estimated Capital Cost
Added cost per month for the average household
(estimated median cost of capital debt 2014-2040)

Alternative	Monthly Cost
Base	$ 1.08
A	$ 0.92
A*	$ 0.66
B	$ 0.93
C	$ 0.56
C**	$ 0.61
D	$ 0.55
D**	$ 0.60
D***	$ 0.34

Base Alternative (Current Transfer Plan)
The Base Alternative implements the current Transfer Plan, which was adopted by the County Council in December 2007. This plan calls for the county to:

- Build a new Factoria recycling and transfer station as currently designed and permitted, with phase 1 (garbage) opening in 2016, and phase 2 (recycle and HHW) opening in 2017, and demolition of the existing Factoria transfer station
- Close Renton in 2018
- Build a new South County recycling and transfer station to open in 2019 on one of three sites currently being evaluated
- Close the Algona transfer station in 2020, making that property available for other use
- Site a new Northeast recycling and transfer station somewhere in the service area currently being served by Houghton to open in 2020
- Close the Houghton transfer station in 2021
- All stations would provide pre-load compaction, three days storage capacity, self-haul service during all operating hours, and full recycling services as described in Figure 3.

The Base Alternative is the most expensive in terms of capital costs. However, with five transfer stations dispersed across the county, particularly in the forecasted high growth areas of Northeast and South County, collection costs are expected to be lower than the other alternatives. This plan supports the targeted self-haul, recycling, and compaction objectives providing the highest level of service amongst all options under consideration. The primary risks are associated with the typical siting challenges for a transfer station.

Cost
With a total of five newly constructed modern transfer and recycling facilities, three of which have yet to be built, this alternative has the highest capital costs. Preliminary planning-level estimates (in 2013 dollars) place future capital costs for this alternative at $222 million; this would translate to an added cost of about $1.10 per month for the average household (estimated median cost of capital debt 2014-2040). All new facilities would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. Alternative project financing and delivery methods would be evaluated for each new station built to identify potential cost savings.

The Renton Transfer Station would close under this alternative, so collection cost for residents and businesses in the Renton area would increase as commercial haulers are redirected to the Bow Lake and Factoria facilities. One area hauler estimates a less than a one percent increase in operational or customer costs; a second hauler estimates an increase of $1 to 2 million per year in added driver hours and trips and an additional $3 to 6 million in capital costs such as additional trucks.

Service
This is one of only two alternatives that meet all of the level of service standards developed by consensus with regional stakeholders to evaluate satisfactory system performance. A full range of recycling services would be available to self-haulers and self-haul service would be available at all facilities during all hours of operation to support the region's recycling goal.

This alternative provides the greatest number of transfer facilities, evenly distributed throughout the regional system. Therefore all areas of the system would receive a uniform high level of service.

Environment
The Base Alternative minimizes impacts by incorporating compactors at every facility, which significantly reduces the number of transfer trailer trips generating traffic and GHGs. With the greatest number of full-service facilities evenly distributed throughout the system, this alternative also minimizes the environmental impacts of customer trips, as well as the intensity of impacts on streets neighboring each facility.

Risks/Challenges
This alternative requires siting two new facilities. Siting any new facility is challenging and comes with the risk that an appropriate site will not be identified.

Alternative A

In this alternative, plans for the South County are not changed, but Factoria serves the east/northeast county without the addition of a new Northeast station.

- Do not build Northeast
- Increase the size of Factoria to accommodate an expanded service area, requiring use of the Eastgate property, opening in 2020/2021
- Close Houghton in 2021
- Close Renton in 2018
- Build a new South County recycling and transfer station to open in 2019 on one of three sites currently being evaluated
- Close the Algona transfer station in 2020, making that property available for other use

The Factoria recycling and transfer station would:

- Have two buildings – one for commercial customers on the currently permitted property and one for self-haul customers on the "Eastgate" property
- The commercial building would be equipped with waste compactors; the self-haul building would not, however space would be available to add compaction later if desired
- The commercial building would be open 5 days a week with extended evening hours
- The self-haul building would be open 7 days a week with standard operating hours
- A full range of recycling would be available for self-haulers
- Household hazardous waste (HHW) service would be available 6 days a week for residents and businesses that generate small quantities

This option provides desirable self-haul, recycling, and compaction at all operating facilities. It would build a new and expanded Factoria requiring the use of the upper property known as the Eastgate since the current location is not big enough to meet the service needs for the entire east/northeast service area. The expanded capacity in South County would help address the forecasted population growth in that region, but the same could not be said for the Northeast part of the county. This alternative has one of the most expensive capital costs at $186 million. Although tonnage and vehicle capacity would not be a concern with this option, the reduction in total stations and in particular the lack of a Northeast station would increase collection costs over the Base Alternative. Additionally, Bellevue has expressed concern in regards to probable land use conflicts with the Eastgate property.

Cost

Alternative A is among the higher-costing alternatives for capital costs, estimated at $186 million in 2013 dollars. This would add about $0.90 per month for the average household (estimated median cost of capital debt 2014-2040). Estimated costs for the Factoria Recycling and Transfer Station would increase with the expanded function of that facility, but this increase is more than offset by the elimination of all capital costs for the Northeast facility, which would not be built. As with each of the alternatives, all new facilities would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. Alternative project financing and delivery methods would be evaluated for each new station built to identify potential cost savings.

The Renton Transfer Station would close under this alternative, so collection costs for residents and businesses in the Renton area would increase as commercial haulers are redirected to the Bow Lake and Factoria facilities. The Houghton Transfer Station would close and a replacement facility in the service area would not be built, so collection costs for residents and businesses in the Bothell, Woodinville, Kirkland, Redmond, Duvall, and Carnation areas would increase as commercial haulers are redirected to the Factoria and Shoreline facilities. Cost may also increase for customers in Lake Forest Park and Kenmore, because although the Shoreline station is nearby, the hauler serving this area is currently using the Houghton transfer station for end-of-day trips based on proximity to their base location. One area hauler estimates a less than a one percent increase in operational or customer costs; a second hauler estimates an increase of $1.5 to 2.5 million per year in added driver hours and trips and an additional $6 to 9 million in capital costs such as additional trucks.

Service

This alternative meets all level of service standards except Criterion 17, "Transfer station is compatible with surrounding land use." This is because the alternative calls for developing the Eastgate property, which is inconsistent with current City of Bellevue zoning and land use plans. A full range of recycling services would be available to self-haulers and self-haul service would be available at all facilities during all hours of operation to support the region's recycling goal.

Environment
Like the Base Alternative, Alternative A includes compactors at every facility (although waste brought in by self-haulers would not be compacted at Factoria), significantly reducing the number of transfer trailer trips generating traffic and GHGs. Lacking a Northeast facility, some customers would have to travel outside their current service area, increasing the environmental impacts of customer trips compared to the Base Alternative. Impacts on streets neighboring Factoria would increase.

Risks/Challenges
Because this alternative redirects all east/northeast tonnage and customers to Factoria, it would increase any impacts in the area around that facility. Bellevue's land use code would require a conditional use permit to construct on the Eastgate property. The City of Bellevue is the permitting authority, and a conditional use permit would be inconsistent with Bellevue's recently adopted I-90 corridor plan. Without a new permit from Bellevue, this alternative could not be built.

Alternative A*

This alternative renovates and retains the current Houghton transfer station as a self-haul only facility and builds a new Factoria facility as currently designed.

- Do not build Northeast
- Build Factoria as currently designed and permitted, with phase 1 (garbage) opening in 2016, and phase 2 (recycle and HHW) opening in 2017
- Renovate Houghton and transition to self-haul only in 2017
- Close Renton in 2018
- Build a new South County recycling and transfer station to open in 2019 on one of three sites currently being evaluated
- Close the Algona transfer station in 2020, making that property available for other use

The Houghton transfer station would:

- Accept garbage and yard waste from self-haul customers 7 days a week
- Accommodate limited recycling, e.g., curbside mix OR scrap metal and appliances
- Not have a compactor
- Not provide emergency storage

The Factoria recycling and transfer station would:

- Accept garbage from commercial haulers seven days a week with extended hours on weekdays
- Accept garbage and recyclables from self-haulers on weekends and limited weekday hours, for example, 4 p.m. to 10 p.m.
- HHW service would be available 6 days a week

This option results in $85 million savings of capital over the base plan. Storage capacity and compaction would be supported everywhere except Houghton. However, vehicle capacity at Factoria and Houghton would be exceeded for 50 percent of the operating hours, and sometimes more. The Eastgate risk is resolved but Kirkland has expressed objections to the continued operation of Houghton in its residential neighborhood. Like Alternative A, the lack of a Northeast station would also increase collection costs over the Base Alternative.

Cost
At about $136 million ($2013), Alternative A* falls in the middle of the capital cost range. This would translate to an added cost of about $0.65 per month for the average household (estimated median cost of capital debt 2014-2040). The most significant change from the Base Alternative is elimination of the cost of constructing a Northeast facility. The capital cost of retaining Houghton as a self-haul facility does not significantly affect the total. As with each of the alternatives, all new facilities would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. Alternative project financing and delivery methods would be evaluated for each new station built to identify potential cost savings

Compared to Alternative A, this alternative adds self-haul service. But it does not add service for commercial haulers. Since collection costs are determined by the haulers, who would be served by the same facilities as in Alternative A, collection cost impacts in this alternative would be the same as Alternative A.

Service
This alternative meets less than half (14 out of 25) of the level of service criteria and subcriteria, because it retains the existing Houghton transfer station. Houghton is not large enough to be renovated to meet level of service standards for recycling services, emergency storage, compaction, vehicle capacity, and others, and is not compatible with surrounding residential land use. Transfer station recycling services under this alternative do not meet the LOS standard and will not fully support meeting our regional recycling goal.

The Houghton transfer station currently does not meet vehicle capacity needs (LOS score D); based on projections, it would score an F (optimal operating capacity exceeded more than 50 percent of operating hours) in future years. This would be expected to have cascading effects on other criteria, including time on site and impacts on local streets.

Environment
This alternative includes compactors at every facility except Houghton, requiring slightly more transfer trailer trips generating traffic and GHGs compared to the Base Alternative. Lacking a Northeast facility, some customers would have to travel outside their current service area, increasing the environmental impacts of customer trips compared to the Base Alternative. Impacts on streets neighboring Factoria and Houghton would increase relative to the Base Alternative.

Risks/Challenges
This alternative redirects self-haul customers from the Factoria service area to Houghton during certain weekday hours; the Houghton facility would not be able to accommodate the increased vehicle traffic without resulting in back-ups and lengthy wait times during 50 percent or more of operating hours. Because Houghton is located in a residential area, hours cannot be increased to accommodate the additional traffic. The City of Kirkland has expressed objections to maintaining Houghton in any capacity past the currently scheduled closure date.

Alternative B

In Alternative B, plans for the South County are the same as the Base Alternative. Instead of building a new Factoria facility, a larger Northeast facility is constructed to serve the current Houghton and Factoria service areas.

- Do not build new Factoria

- Increase the size and operating hours of Northeast to accommodate east/northeast tonnage and customers, opening in 2020
- Close Factoria and Houghton in 2021
- Close Renton in 2018
- Build a new South County recycling and transfer station on one of three sites currently being evaluated to open in 2019
- Close the Algona transfer station in 2020, making that property available for other use
- All stations would provide pre-load compaction, three days storage capacity, self-haul service during all operating hours, and full recycling services as described in Figure 3

This alternative calls for a halt to the current Factoria project to instead build a facility in the Northeast with an expanded size (25 percent larger than the Bow Lake RTS) and longer operating hours (approximately 6:30 a.m. to 11 p.m.); this would be necessary to handle double the tonnage and traffic. It would also build a new South County station to serve alongside Bow Lake and Shoreline. These four transfer stations would offer full service recycling, self-haul service during all operating hours, emergency storage, and compaction. There are no significant concerns about tonnage or vehicle capacity with this option except to say the Northeast facility would be a busy one; siting a facility of the necessary size that could accommodate the late operating hours would be expected to be more complicated and challenging. Capital costs would be the second highest of the alternatives at $187 million. Collection costs would be expected to increase in the area currently served by Factoria.

Cost

With capital costs equivalent to Alternative A, Alternative B saves the costs of building Factoria, except for sunk costs of about $22 million which have already been spent on design and permitting of a Factoria station, while adding to the cost of Northeast. In total, capital costs for Alternative B are estimated at about $187 million ($2013). This would translate to an added cost of about $0.90 per month for the average household (estimated median cost of capital debt 2014-2040). As with each of the alternatives, all new facilities would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. Alternative project financing and delivery methods would be evaluated for each new station built to identify potential cost savings.

The Renton Transfer Station would close under this alternative, so collection cost for residents and businesses in the Renton area would likely increase as commercial haulers are redirected to the Bow Lake and Factoria facilities. The Factoria Transfer Station would close and a replacement facility in the service area would not be built, so collection costs for residents and businesses in the Mercer Island, Bellevue, Sammamish, Issaquah, Snoqualmie, and North Bend areas would increase as commercial haulers are redirected to the Northeast and possibly Bow Lake facilities. One area hauler estimates a four to five percent increase in operational or customer costs; a second hauler estimates an increase of $2.5 to 3.5 million per year in added driver hours and trips and an additional $6 to 9 million in capital costs such as additional trucks.

Service

This is one of only two alternatives that would meet all level of service standards. A full range of recycling services would be available to self-haulers and self-haul service would be available at all facilities during all hours of operation to support the region's recycling goal.

Although some customers (including haulers) would have to travel farther to a transfer station, once there, all customers in the system would receive a uniformly high level of service.

Environment
This alternative includes compactors at every facility, significantly reducing the number of transfer trailer trips generating traffic and GHGs. However, after Factoria closes in 2021, some customers would have to travel outside their current service area, and some transfer trailers would travel farther to disposal, increasing the environmental impacts of those trips compared to the Base Alternative. Impacts on streets neighboring the new Northeast facility would increase relative to the Base Alternative.

Risks/Challenges
This alternative redirects all east/northeast customers to a Northeast facility which has yet to be sited and would need to be significantly larger than planned in the Base Alternative. Siting challenges would be intensified due to the size increase, longer operating hours, and significant traffic increase that would be associated with redirecting all east/northeast to one facility.

Alternative C

As in Alternative B, this alternative resizes the future Northeast facility to handle all of the customers and tonnage that currently go to Factoria and Houghton. It does not create new capacity in the South County.

- Do not build new Factoria
- Increase the size and operating hours of Northeast to accommodate east/northeast tonnage and customers, opening in 2020
- Close Factoria and Houghton in 2021
- Close Renton in 2018
- Do not build South County
- Close Algona in 2018, making that property available for other use
- Limit self-haul garbage and recycling at Bow Lake to weekends and weekday-evening hours

This option reduces urban transfer station locations from the five planned in the Base Alternative to three – Shoreline, Bow Lake and a large Northeast facility with expanded operating hours. Those stations would have compaction and support the need for emergency storage capacity. Customers from closed Algona and Renton stations would be redirected primarily to the Bow Lake RTS; to absorb the added traffic, self-haul, including recycling services, would need to be limited, despite the new expanded area. Because this alternative does not build a new South County or Factoria facility, the capital cost for this alternative is among the lowest. However, with this substantial reduction in the number of stations, collection costs would increase significantly in areas without a nearby facility.

Cost
Alternative C is among the lower capital cost alternatives, with an estimated capital cost of $113 million ($2013). This would translate to an added cost of about $0.55 per month for the average household (estimated median cost of capital debt 2014-2040). Savings come from not building the Factoria or South County facilities. Alternative project financing and delivery methods would be evaluated for the new Northeast station to identify potential cost savings.

The Renton Transfer Station would close under this alternative, so collection costs for residents and businesses in the Renton area would likely increase as commercial haulers are redirected to the Bow Lake and Factoria facilities. Absorbing its sunk costs of about $22 million which have already been spent on design and permitting of a Factoria station, the Factoria Transfer Station would close and a replacement facility in the service area would not be built, so collection costs for residents and businesses in the Mercer Island, Bellevue, Sammamish, Issaquah, Snoqualmie, and North Bend areas

would increase as commercial haulers are redirected to the Northeast and possibly Bow Lake facilities. Under this alternative, the Algona Transfer Station would close and a replacement facility in the service area would not be built, so collection costs for residents and businesses in the Federal Way, Algona, Pacific, and Auburn areas would increase as commercial haulers are redirected to the Bow Lake and Enumclaw facilities. One area hauler estimates a four to five percent increase in operational or customer costs; a second hauler estimates an increase of $3 to 4.5 million per year in added driver hours and trips and an additional $9 to 15 million in capital costs such as additional trucks. The hauler serving the South County area has expressed concern about disparate impacts in level of service related to this alternative.

Service
As with each of the alternatives, all new facilities would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. However, due to the small number of facilities, and the redirection of customers to a the Bow Lake RTS, which was not designed for such a high proportion of the system's waste, this alternative does not meet six of the 25 criteria and subcriteria. These include customer service criteria such as drive-time and critical operational standards for vehicle capacity. Without a South County station, the Bow Lake RTS is projected to exceed vehicle capacity more than 50 percent of weekend operating hours; this would be expected to have cascading effects on other criteria, including time on site and impacts on local streets. Transfer station recycling services under this alternative do not meet the LOS standard and will not fully support meeting our regional recycling goal.

Environment
In the east/northeast area this alternative has the same traffic and greenhouse gas impacts as Alternative B. After 2018, this alternative would not provide any transfer service in the South County service area, resulting in increased traffic and greenhouse gas emissions from customers traveling to Bow Lake or further due to limited self-haul hours at Bow Lake. Impacts on streets neighboring the new Northeast facility and Bow Lake would increase relative to the Base Alternative.

Risks/Challenges
Challenges in the east/northeast area are the same as in Alternative B; all east/northeast customers are directed to a Northeast facility which has yet to be sited. Siting challenges may be intensified due to the size increase of the Northeast station, longer operating hours, and significant traffic increase that would be associated with redirecting all east/northeast to one facility.

Additionally, this alternative would provide very limited service in the south area of the county; all south area commercial haulers would be directed to Bow Lake or Enumclaw, causing the Bow Lake RTS to limit self-haul service and exceed capacity more than 50 percent of the time on weekends, likely leading to traffic impacts on Orillia Road.

Alternative C**

This alternative is a variation on Alternative C. It differs from Alternative C only in that it renovates and retains Algona as a self-haul only facility.

- Algona to accept garbage and yard waste from self-haul customers 7 days a week
- No space for recycling any materials except yard waste at Algona
- No compactor at Algona
- No storage at Algona
- Complete Algona renovation and transition to self-haul only in 2018

This option is essentially the same as C with the addition of retaining Algona as a self-haul only facility that also accepts yard waste but no other recyclables. Vehicle capacity at Algona would be exceeded up to 50 percent of the time with traffic queuing onto West Valley Highway. The capital costs for this option increase to $122 million in order to make necessary repairs at Algona. Since only self-haul is added in this approach compared to Alternative C, we still expect collection costs to rise in areas without a nearby facility as a result of the substantial reduction in the number of transfer stations.

Cost
At $122 million ($2013), this alternative is in the middle of the capital cost range. This would translate to an added cost of about $0.60 per month for the average household (estimated median cost of capital debt 2014-2040). It adds to the cost of Alternative C because it requires renovation of the current Algona transfer station, which has significant deficiencies. Alternative project financing and delivery methods would be evaluated for the new Northeast station to identify potential cost savings. Compared to Alternative C, this alternative adds self-haul service, but does not add service for commercial haulers, so collection cost impacts would be the same as Alternative C.

Service
This alternative does meet the drive time standard (in contrast to Alternative C). As with each of the alternatives, all new facilities would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. However, due to the small number of facilities, the redirection of commercial customers to a facility that was not designed for such a high proportion of the system's waste, and the continued use of a facility that is already over fifty years old, it fails to meet 12 of the 25 criteria and subcriteria. Transfer station recycling services under this alternative do not meet the LOS standard and will not fully support meeting our regional recycling goal. It also fails to meet critical operational standards for vehicle capacity. Criteria relating to station capacity are critical from an operational perspective, and can have cascading effects on other criteria. Failing vehicle capacity standards means that the system will be unable to accommodate vehicles traffic for at least 10 percent of operating hours.

Environment
Greenhouse gas emissions and traffic would be somewhat lessened in the south area with availability of self-haul service at Algona; however, with additional self-haul traffic directed to Algona during the hours when Bow Lake would be closed to self-haul, Algona will experience traffic impacts. All commercial haulers would still be directed to other facilities, which would primarily affect the area surrounding Bow Lake.

Risks/Challenges
Challenges in the east/northeast area are the same as in Alternatives B and C; all east/northeast customers are directed to a Northeast facility which has yet to be sited. Siting challenges may be intensified due to this significant traffic increase and the fact that this would be the largest facility in the system, with extended operating hours. This alternative would redirect a significant portion of self-haul customers from the Bow Lake service area to Algona, causing customer queues to spill onto West Valley Highway at times. This alternative would redirect all south area commercial haulers to Bow Lake or Enumclaw.

Alternative D

This alternative avoids siting any new facilities. Instead, all east and northeast traffic and tonnage are directed to an expanded Factoria, while all south county tonnage and traffic are directed to Bow Lake.

- Do not build Northeast
- Resize Factoria to accommodate an expanded service area, which requires use of the Eastgate property, opening in 2020/2021
- Close Houghton in 2021
- Close Renton in 2018
- Do not build the South County station
- Close Algona in 2018, making that property available for other use
- Limit self-haul garbage and recycling at Bow Lake to weekends and reduced weekday hours

This option reduces our current urban transfer station locations from six to three. Those stations would have compaction and support the need for emergency storage capacity. Recycling programs would also be in place at two of the three locations on a full-time basis with part-time services at the third. As a result of eliminating transfer stations in the South and Northeast County, capital costs would be reduced by $108 million. This alternative assumes that we would build a new Factoria but it requires expansion onto the upper property known as the Eastgate. Bellevue has expressed concern in regards to zoning conflicts. As tonnage from Algona and Renton is diverted to Bow Lake, we would exceed vehicle capacity more than 50 percent of the time. Self-haul services would be significantly limited at Bow Lake to accommodate the additional commercial traffic. Additionally, eliminating facilities in the South and Northeast County needs to be reconciled with the fact that these locations within King County are forecasted to experience the largest population growth in the next 20 years. Finally, with this substantial reduction in stations, collection costs would very likely increase across the county, but particularly in Northeast and South County areas.

Cost
Alternative D has roughly the same capital cost as Alternative C, estimated at $112 million ($2013); this would translate to an added cost of about $0.55 per month for the average household (estimated median cost of capital debt 2014-2040). Despite increasing the cost of Factoria compared to the Base Alternative, this alternative does not build any other new facilities.

The Renton Transfer Station would close under this alternative, so collection costs for residents and businesses in the Renton area would increase as commercial haulers are redirected to the Bow Lake and Factoria facilities. The Houghton Transfer Station would close and a replacement facility in the service area would not be built, so collection costs for residents and businesses in the Bothell, Woodinville, Kirkland, Redmond, Duvall, and Carnation areas would increase as commercial haulers are redirected to the Factoria and Shoreline facilities. Cost may also increase for customers in Lake Forest Park and Kenmore, because although the Shoreline station is nearby, the hauler serving this area is currently using the Houghton transfer station for end-of-day trips based on proximity to their base location. Under this alternative, the Algona Transfer Station would close and a replacement facility in the service area would not be built, so collection costs for residents and businesses in the Federal Way, Algona, Pacific, and Auburn areas would increase as commercial haulers are redirected to the Bow Lake and Enumclaw facilities. One area hauler estimates a 2 to 3 percent increase in operational or customer costs; a second hauler estimates an increase of $2 to 3.5 million per year in added driver hours and trips and an additional $9 to 15 million in capital costs such as additional trucks. The hauler serving the south county area has expressed concern about disparate impacts in level of service related to this alternative.

Service
This alternative fails to meet six of the 25 criteria and subcriteria. These failures include drive time, recycling services, vehicle capacity standards, and, because it requires use of the Eastgate property, compatibility with surrounding land use. Transfer station recycling services under this alternative do not

meet the LOS standard and will not fully support meeting our regional recycling goal. Criteria relating to station capacity are critical from an operational perspective, and can have cascading effects on other criteria. Failing vehicle capacity standards means that the system will be unable to accommodate vehicles traffic for at least 10 percent of operating hours.

Environment
Lacking a Northeast and a South County facility, some customers would have to travel outside their current service area, increasing the environmental impacts of customer trips compared to the Base Alternative. Impacts on streets neighboring Factoria and Bow Lake would increase compared to the Base Alternative.

Risks/Challenges
Challenges for the east/northeast are the same as in Alternative A; Bellevue's land use code would require a conditional use permit to construct on the Eastgate property. This decision, which is inconsistent with Bellevue's recently adopted I-90 corridor plan, would be made by the City of Bellevue. Because this alternative redirects all east/northeast tonnage and customers to Factoria, it would amplify any impacts in the area around that facility. Without a new permit from Bellevue, this alternative could not be built.

Challenges for the south area are the same as Alternative C; this alternative would provide very limited service in the south area of the county. This alternative would limit self-haul service and redirect all south area commercial haulers to Bow Lake or Enumclaw.

Alternative D**

This alternative differs from Alternative D only in that it renovates and retains Algona as a self-haul only facility.

- Algona to accept garbage and yard waste from self-haul customers 7 days a week
- No space for additional recycling at Algona
- No compactor at Algona
- No storage at Algona
- Algona renovation complete and transition to self-haul only in 2018

This option is essentially the same as D with the addition of retaining Algona as a self-haul only facility that also accepts yard waste but no other recyclables. However, given the limited footprint, we would still exceed vehicle capacity up to 50 percent of the time at Algona with traffic queuing onto West Valley Highway. The capital costs for this option increase to $120 million in order to make necessary repairs at Algona. Collection costs are still likely to increase across the county as a result of the limited locations for commercial drops, particularly in Northeast and South County areas.

Cost
Capital costs for this alternative fall in the middle of the range, at about $121 million ($2013). This is roughly the same cost as Alternative C**. Most of the cost of Alternative D** is the construction of Factoria. This would translate to an added cost of about $0.60 per month for the average household (estimated median cost of capital debt 2014-2040).

This alternative adds self-haul service, but does not add service for commercial haulers, so collection cost impacts would be the same as Alternative D.

Service
Although this alternative does meet the drive time standard in contrast to Alternatives C and D, it fails to meet 13 of the 25 criteria and subcriteria. These failures include recycling services, vehicle capacity, and impacts to local streets. Transfer station recycling services under this alternative do not meet the LOS standard and will not fully support meeting our regional recycling goal. Criteria relating to station capacity are critical from an operational perspective, and can have cascading effects on other criteria. Failing vehicle capacity standards means that the system will be unable to accommodate vehicles traffic for at least 10 percent of operating hours.

Environment
Greenhouse gas emissions and traffic would be somewhat lessened in the south area with availability of self-haul service at Algona; however, that would direct additional self-haul traffic to Algona during the week when Bow Lake's self-haul hours would be limited, impacting traffic around Algona and causing queues to spill onto West Valley Highway. All commercial haulers would still be directed to other facilities, which would primarily affect the area surrounding Bow Lake.

Risks/Challenges
Challenges in the east/northeast area are the same as in Alternatives A and D; Bellevue's land use code would require a conditional use permit to construct on the Eastgate property. This decision, which is inconsistent with Bellevue's recently adopted I-90 corridor plan, would be made by the City of Bellevue. Because this alternative redirects all east/northeast tonnage and customers to Factoria, it would amplify any impacts in the area around that facility. Without a new permit from Bellevue, this alternative could not be built.

Challenges for the south area are the same as Alternatives C and D; this alternative would provide very limited service in the south area of the county; a significant portion of self-haul customers from the Bow Lake service area would be redirected to Algona, and all south area commercial haulers would be directed to Bow Lake or Enumclaw.

Alternative D***
Combines D** (which does not site any new facilities and retains Algona as a self-haul facility) with A* (which retains Houghton as a self-haul facility).

- Retain Algona and Houghton as self-haul only stations
- Do not build Northeast or South County
- Build and operate an expanded Factoria as described in Alternative A*
- Close Renton in 2018
- Limit self-haul garbage and recycling at Bow Lake to weekends and reduced weekday hours

This option still does not build in Northeast or South County but instead of building an expanded Factoria using the Eastgate property, we would build Factoria as designed. Additionally, we would retain both Algona and Houghton as self-haul only facilities. Consequently, this option has the lowest of all capital costs at $71 million. However, at Factoria, Houghton, and Algona (3 of the five stations) we would exceed vehicle capacity up to 50 percent of the time, and at Houghton even more. This approach does address the probable risks associated with developing the Eastgate property in Bellevue but requires the Houghton station to remain open. Collection costs are still likely to increase across the county as a result of the limited locations for commercial drops, particularly in Northeast and South County areas.

Cost
Constructing only one new facility (Factoria), Alternative D*** has the lowest capital cost of all nine alternatives, estimated at $71 million ($2013); this would translate to an added cost of about $0.35 per month for the average household (estimated median cost of capital debt 2014-2040).

This alternative adds self-haul service, but does not add service for commercial haulers, so collection cost impacts would be the same as Alternative D.

Service
Largely because Algona and Houghton have many limitations that cannot be overcome by renovation, this alternative does not meet 14 of the 25 criteria and subcriteria. It fails to meet the same criteria as D**, including include recycling services, vehicle capacity, and impacts to local streets. Because the Houghton transfer station is located in a residential neighborhood, it also fails the criterion "100 foot buffer between active area and nearest residence." Transfer station recycling services under this alternative do not meet the LOS standard and will not fully support meeting our regional recycling goal. Criteria relating to station capacity are critical from an operational perspective, and can have cascading effects on other criteria. Failing vehicle capacity standards means that the system will be unable to accommodate vehicles traffic for at least 10 percent of operating hours.

Environment
This alternative somewhat mitigates the impacts of longer distances by maintaining self-haul service at Algona and Houghton; however, impacts to streets surrounding those facilities would increase.

Risks/Challenges
This alternative redirects self-haul traffic to very constrained facilities.

Bellevue's land use code would require a conditional use permit to construct on the Eastgate property. This decision, which is inconsistent with Bellevue's recently adopted I-90 corridor plan, would be made by the City of Bellevue. Because this alternative redirects all east/northeast tonnage and customers to Factoria, it would amplify any impacts in the area around that facility. Without a new permit from Bellevue, this alternative could not be built.

Haulers' Collection Cost

All three commercial hauling companies serving the areas affected by the Transfer Plan provided preliminary estimates of impacts to their costs, which would be passed on to collection customers. Although each of the haulers presented their cost estimates in a different format, all noted that these estimates are rough. According to one hauler, "A more thorough assessment would necessitate studies on estimated traffic patterns and facility wait times, as well as the identification of specific locations for the proposed South County and Northeast county transfer stations. Consideration of these variables may significantly affect the cost estimates." A summary of these estimates is presented in Table 5. The complete information submitted by the haulers is available in Appendix B.

Table 5 – Collection Cost Estimates Summary

	CleanScapes	Republic	Waste Management
Base		Minimal impact in drive time or costs. Less than a 1% increase in operational or customer costs.	Expenses (Driver Hours & Trips) $1 - 2 million/yr Capital Cost $3 - 6 million
A		Minimal impact in drive time or costs. Less than a 1% increase in operational or customer costs.	Expenses (Driver Hours & Trips) $1.5 – 2.5 million/yr Capital Cost $6 - 9 million
A*		Minimal impact in drive time or costs. Less than a 1% increase in operational or customer costs.	Expenses (Driver Hours & Trips) $1.5 – 2.5 million/yr Capital Cost $6 - 9 million
B	30 hours/week (truck and labor) or $3,000/week	Drive time increased by 300 hours per month. Increase in customers rates 4-5%.	Expenses (Driver Hours & Trips) $2.5 – 3.5 million/yr Capital Cost $6 - 9 million
C	30 hours/week (truck and labor) or $3,000/week	Drive time increased by 350 hours per month. Increase in customers rates 4-5%.	Expenses (Driver Hours & Trips) $3 – 4.5 million/yr Capital Cost $9 - 15 million
C**	30 hours/week (truck and labor) or $3,000/week	Drive time increased by 350 hours per month. Increase in customers rates 4-5%.	Expenses (Driver Hours & Trips) $3 – 4.5 million/yr Capital Cost $9 - 15 million
D		Drive time increased by 100 hours per month. Increase in customer rates possible 2-3%.	Expenses (Driver Hours & Trips) $2 – 3.5 million/yr Capital Cost $9 - 15 million
D**		Drive time increased by 100 hours per month. Increase in customer rates possible 2-3%.	Expenses (Driver Hours & Trips) $2 – 3.5 million/yr Capital Cost $9 - 15 million
D***		Drive time increased by 100 hours per month. Increase in customer rates possible 2-3%.	Expenses (Driver Hours & Trips) $2 – 3.5 million/yr Capital Cost $9 - 15 million

Regional Direct Rate

Under the King County Code, the County charges a lower rate if solid waste companies process waste at their own private transfer stations and haul it in transfer trailers directly to Cedar Hills. The rate reflects the County's avoided costs since the regional direct waste does not pass through the County's transfer system. In the past, for many years, the regional direct rate was significantly lower than the County's actual avoided costs, which created a financial incentive for private collections companies to bypass County transfer stations. In 2003, the County eliminated public subsidies to private industry by adjusting the regional direct rate paid by haulers for waste brought directly to Cedar Hills when the Council passed Ordinance 14811 to increase the Regional Direct rate to cover the County's costs.

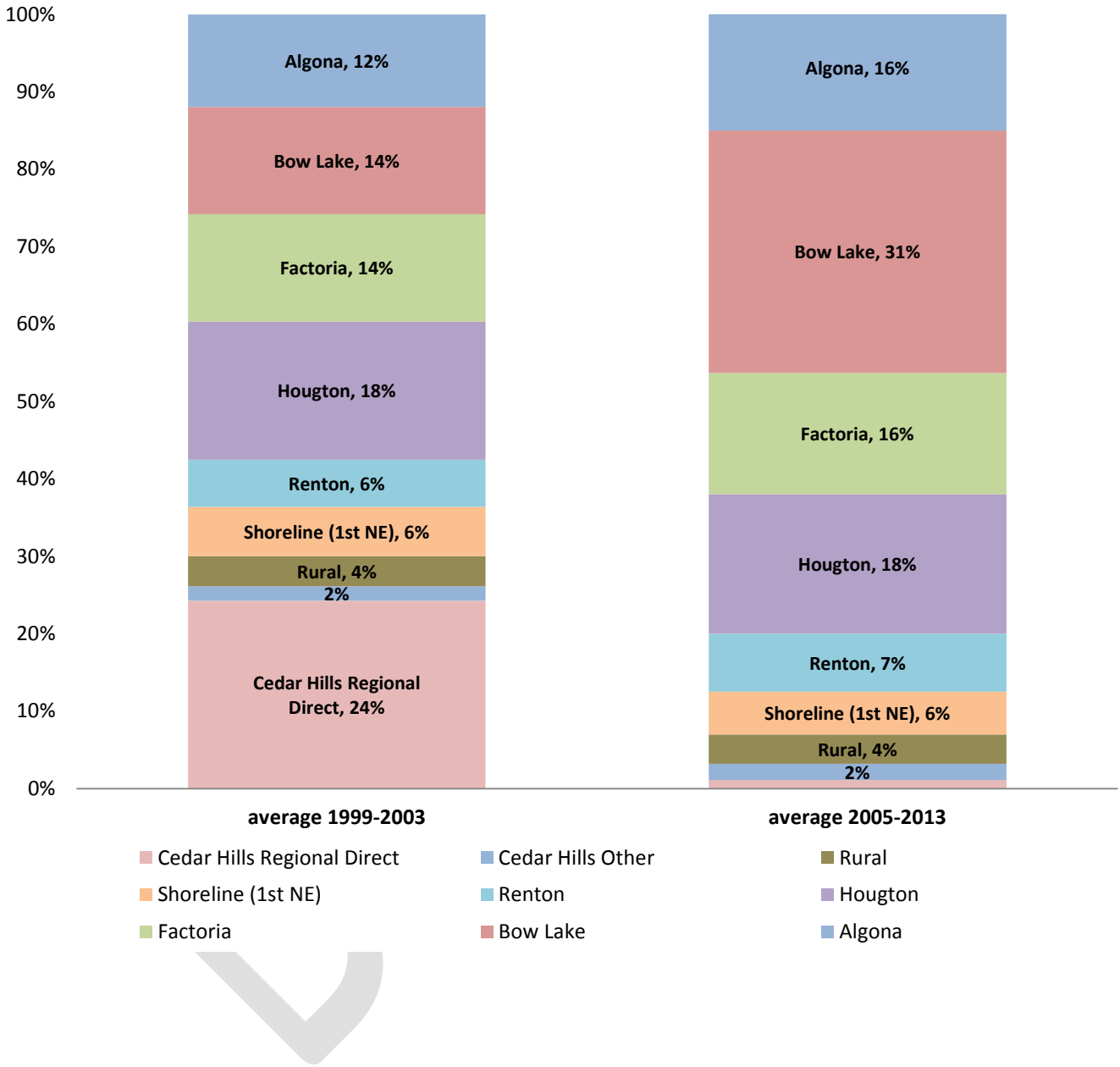
One question that arose during the review of the Plan was whether a subsidy could be reinstated to create sufficient financial incentive to the private sector to use private transfer stations and eliminate the need for King County to build a facility to replace the Houghton Transfer Station. However, based on an analysis of tonnage distribution over the past 15 years, a change in the regional direct rate would have virtually no effect on County transfer station capacity needs in the Northeast service area.

The increase in the regional direct rate virtually eliminated regional direct tonnage, which decreased from about 24 percent of total tonnage to about 1 percent since the fee was increased in 2004. During the past decade, the private transfer stations that previously handled regional direct waste have all been repurposed to serve other functions.

Despite the significant change in total regional direct tonnage, the Houghton tonnage did not change after the regional direct fee was increased. From 1999 to 2013 the Houghton transfer station received between 17 and 19 percent of the annual total system tonnage. Data show that the tonnage haulers used to deliver directly to Cedar Hills now goes primarily to Bow Lake, with smaller amounts also going to Algona, Factoria and Renton.

Figure 4: Waste Disposed by Facility

Percentage of total system tons before and after regional direct fee change (May 2004)



Recommendation

This review was undertaken to answer two primary questions:

1. Are changes to Transfer Plan needed to ensure that the transfer system is sized and configured appropriately to meet the region's solid waste needs now and for the long term?
2. Could changes be made that could reduce future expenditures while still meeting desired service levels and objectives?

To answer the first question, the division, in collaboration with stakeholders, examined the Base Alternative; four alternatives that did not build one or more of the planned new facilities; and four variations on those alternatives that retained for self-haul service one or more of the existing facilities currently planned for closure.

The analysis revealed that any system configuration which does not build a new South County Recycling and Transfer Station to replace Algona (Alternatives C, C**, D, D**, and D***) will not provide sufficient service and would result in significantly increased collection costs for residents and businesses in the South County. These alternatives would overload the Bow Lake Recycling and Transfer Station (RTS), which was not designed to handle such a high proportion of the system's customers and would not adequately serve the South County, raising collection costs in the county's lowest income area.

The remaining alternatives (A, A*, and B) each have unique merits and demerits. Alternative A relies on an expanded Factoria RTS, which would require a conditional use permit to construct on the Eastgate property. The City of Bellevue is the permitting authority, and a conditional use permit would be inconsistent with Bellevue's land use code and recently adopted I-90 corridor plan. Bellevue has been an active participant in this review process and has clearly indicated that it is unlikely to permit development of the Eastgate property for use as a transfer station. Alternative A would also redirect the majority of the customers currently using the Houghton transfer station to Factoria, resulting in increased traffic at Factoria and higher collection costs for the current Houghton service area. The areas currently served by the Algona and Houghton Transfer Stations (the South County and Northeast County service areas) are forecast to experience heavy population growth by 2035.

Alternative A* uses the current Factoria design and permits, but retains the Houghton transfer station for self-haul, thus resolving the Eastgate risk. But Kirkland has expressed objections to the continued operation of Houghton in its residential neighborhood. Additionally, the Houghton transfer station currently does not meet vehicle capacity needs, a situation which would intensify in future years, despite removing commercial traffic from the facility.

This leaves the Base Alternative and Alternative B as the only system configurations that reliably provide sufficient capacity to handle forecast vehicle traffic. The Base Alternative has the highest capital costs and lowest collection costs of all the alternatives. The Base Alternative's capital costs are about 15 cents more per month for the average household (estimated median cost of capital debt 2014-2040) than Alternative B. Alternative B will result in higher collection costs for customers currently being served by the Factoria Transfer Station.

Both alternatives require siting of two new facilities, which poses a risk. However, the risk involved in siting an expanded Northeast RTS, as called for in Alternative B, which is necessary to accommodate customers currently served by the Houghton and Factoria transfer stations, is significantly greater. With a transfer building of approximately 87,000 square feet (about 25 percent bigger than the Bow Lake RTS which sits on 20 acres) the new Northeast RTS would be the largest facility in the system and would

require extended operating hours. Finding an appropriate site for such a large facility, with extended operating hours and significant traffic, poses such a significant risk that the alternative could be unfeasible. While both the Base Alternative and Alternative B could meet the region's solid waste needs now and for the long term, the difference in cost between them is not pronounced and the Base Plan offers significantly less risk in the already challenging siting process.

The division must continue monitoring critical factors such as tonnage, the economy, and population growth. Therefore, to reduce future expenditures while still meeting desired service levels and objectives, it is critical to consider the timing, sizing and possibly phasing of services of each new facility. Each new station would be subjected to value engineering and sized according to the most current tonnage forecasts for the area the facility would serve. Alternative project financing and delivery methods would be evaluated for each new station to identify potential cost savings.

Based on analysis of the alternatives and preliminary stakeholder feedback, the Division recommends proceeding with a variation of the Base Alternative which would include deferring the opening date of the new Northeast transfer station so that the Division can assess the timing and potential phasing of the new station. This recommendation would proceed with construction of the new Factoria station as currently designed, while studying whether additional space and services could be added to the new Factoria station that could affect a new Northeast station. With flexibility in the timing and scope of a new Northeast facility, the division would also evaluate options to further mitigate impacts on the Houghton neighborhood. Mitigation could include closing Houghton to commercial traffic between opening the new Factoria and final closure of Houghton. The project to site a new facility in the south county to replace the Algona Transfer Station would continue as scheduled. This variation on the Base Alternative recognizes the value of a regional system that provides equivalent services to all system ratepayers.

Appendices

Appendix A: Stakeholder Involvement

Workshop 1

Meeting Agenda
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-1-Agenda.pdf

Workshop 1 Summary
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-1-Meeting-Summary.pdf

Workshop 1 Supplemental Information
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-1-Supplemental-Information.pdf

Workshop 2

Meeting Agenda
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-2-Agenda.pdf

Workshop 2 Summary
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-2-Meeting-Summary.pdf

Workshop 3

Meeting Agenda
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-3-Agenda.pdf

Workshop 3 Summary
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Workshop-3-Meeting-Summary.pdf

Additional Presentations

RPC (August)
RPC (September)
SCA PIC (August)
SCA PIC (September)
MSWMAC (August)
MSWMAC (September)
City Managers (September)
City Managers (October)

Appendix B: Cost Data

B.1 Forecasting Garbage Tonnage
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Forecasting-Garbage-Disposal.pdf

B.2 Retention and Repair Costs for Existing Station
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Retention-Repair-Costs_Existing-Transfer-Stations.pdf

B.3 Transfer Station Cost Drivers
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Transfer-Station-Cost-Drivers.pdf

B.4 Collection Cost Information Provided by the Haulers

Cleanscapes

From: Signe Gilson [mailto:Signe.Gilson@cleanscapes.com]
Sent: Tuesday, August 13, 2013 5:38 PM
To: Gaisford, Jeff
Cc: Husband, Chris; Reed, Bill
Subject: RE: Request for input in King County Transfer Plan Review

Thanks, Jeff

The main impact to CleanScapes would be on our trips between Issaquah and the Factoria Transfer Station (Alts B and C). Depending on where exactly the NE station would be located, our trips between Carnation and the transfer station could also be affected.

For purposes of analysis, we assumed a NE Transfer Station location at Avondale Rd and NE 133rd St and compared current travel times and distance (Issaquah/Factoria and Carnation/Factoria) with estimated travel times between the NE Transfer Station and Issaquah and Carnation.

Our rough estimate of implementing Alts B or C on our operations is an additional 30 hours/week (truck and labor) or $3,000/week.

I'll be out of the office until August 28 but feel free to call with questions/clarification after that.

Thanks. –Signe.

Signe Gilson

Waste Zero Manager

CleanScapes, a Recology® Company | 117 S Main Street, Suite 300 | Seattle, WA 98104

M: (206) 859-6700 | T: (206) 859-6706 | C: (206) 919-7889 | F: (206) 859-6701

signe.gilson@cleanscapes.com

Republic

Republic Services has reviewed the 5 plans proposed for the King County Transfer Stations. Below is our estimated impact for each plan based on our current customer base in order of Republic Services preference.

Our estimates are assuming no excess wait times at the stations in any of the plans. Republic will need to review all city contracts to determine if the contracts allow customer rate increases for additional drive or wait time at King County Transfer Stations.

1. **Plan-Base:** Minimal impact in drive time or costs. Less than a 1% increase in operational or customer costs.

2. **Plan-A:** Minimal impact in drive time or costs. Less than a 1% increase in operational or customer costs.
3. **Plan-D:** Drive time increased by 100 hours per month. Increase in customer rates possible 2-3%.
4. **Plan-B:** Drive time increased by 300 hours per month. Increase in customers rates 4-5%.
5. **Plan-C:** Drive time increased by 350 hours per month. Increase in customers rates 4-5%.

Republic strongly urges the County to continue toward the Base Plan.

Waste Management

From: Shanley, Kimberly [mailto:kshanle1@wm.com]
Sent: Monday, September 23, 2013 2:10 PM
To: Reed, Bill
Cc: Severn, Thea
Subject: RE: Estimated Collection Costs - King County's Transfer Plan Review

Hi Bill & Thea,

A correction to below… the amortization period used for our trucks is an eight to ten year period (rather than seven to ten). As to the second question, Mike Weinstein should be able to give a broad sense of the apportionment of costs to be used for residential. He is scheduled to be back in the office tomorrow, and I hope to get an answer to that question for you.

Kim Kaminski (formerly Shanley)
Government Affairs, Pacific NW/British Columbia
kshanle1@wm.com

Waste Management
720 4th Ave, Ste 400
Kirkland, WA 98033
Tel 425 814 7841
Cell 425 293 9352

From: Shanley, Kimberly
Sent: Friday, September 20, 2013 7:54 AM
To: Reed, Bill
Cc: Severn, Thea
Subject: RE: Estimated Collection Costs - King County's Transfer Plan Review

I don't think we will have a problem answering the questions (I hope!). As to the first question, I believe that our amortization period for our trucks is either over a seven or ten year interval. I will check on this. As to the third question, yes, capital costs are strictly new trucks that would be needed to cover additional routes, being that we would have to break up routes given longer drive times to facilities.

Just the closure of Houghton and Renton, which of course is in all scenarios, has an impact on our routes for North Sound and Seattle, respectively, which is the reason you see expenses and capital costs in all alternatives including the base (even though an indeterminate NE facility will be built and new Factoria will be built).

Kim Kaminski (formerly Shanley)
Government Affairs, Pacific NW/British Columbia
kshanle1@wm.com

Waste Management
720 4th Ave, Ste 400
Kirkland, WA 98033
Tel 425 814 7841
Cell 425 293 9352

From: Reed, Bill [Bill.Reed@kingcounty.gov]
Sent: Thursday, September 19, 2013 12:50 PM
To: Shanley, Kimberly
Cc: Severn, Thea
Subject: FW: Estimated Collection Costs - King County's Transfer Plan Review

Hi, Kim.

Thank you so much for your response. In addition to the cost information, the comments you provided are very helpful.

We have a few questions about the costs that we're hoping you can help us with.

- Do you have any suggestions about the amortization period we should assume for the capital costs? We need to annualize the capital costs as well as the operating costs.
- One of the questions that we have specifically been asked to address is cost per household (i.e., the average household's monthly bill will go up from $x.xx to $y.yy.) Kerry Knight provides us residential customer counts by container size, and by using WUTC garbage rates, we have been able to come up with a reasonable estimate of current average residential household garbage bills. Can you offer any suggestions about how to determine the percentage of the costs you provided to apportion to the residential sector? Would the percentage of garbage tons be a reasonable proxy for the percentage of expenses/capital costs?
- We presume that the capital costs are primarily trucks needed for re-routing, and we suspect that many stakeholders have not considered this potential cost. Could you please provide us with a brief explanation of what these costs are for and why they are anticipated.

Thanks again for your assistance.

Bill Reed
(206) 296-4402

From: Shanley, Kimberly [mailto:kshanle1@wm.com]
Sent: Thursday, September 19, 2013 8:01 AM
To: Reed, Bill; Severn, Thea
Subject: Estimated Collection Costs - King County's Transfer Plan Review

Bill and Thea,

As requested by King County, we are providing estimates of collection cost increases and related hauler-specific capital expenditures for each of the County's proposed transfer station network alternatives. We must stress that these are only rough projections based on the limited information available currently. A more thorough assessment would necessitate studies on estimated traffic patterns and facility wait times, as well as the identification of specific locations for the proposed South County and Northeast County transfer stations. Consideration of these variables may significantly affect the cost estimates listed below.

The decisions made by the County will have resounding impacts on the regional solid waste system and individual municipalities for decades. Accordingly, a thorough and measured review is very important. As this review process is currently planned, only three months will be devoted to discussion before critical choices are rendered. In past reviews and studies, such as the Transfer Plan Review in 2006 and the Independent, Third Party Review in 2007, a comprehensive assessment of the regional system was conducted. We are concerned about potential unintended consequences associated with a rushed process. Thus, we recommend a cautious approach coupled with careful analysis.

We believe many of these options, particularly Alternatives C and D, will result in disparate impacts for many communities in both level of service and the amount of risk exposure including environmental repercussions. At the last workshop, there was essentially no support for either of these options. Hence, at the very least, Alternative C and D and their sub-alternatives should be taken off the table for discussion resulting in a streamlined focus on more viable alternatives.

Alternative Scenarios	**Alternative Description**	**Expenses (Driver Hours & Trips)**	**Capital Costs**
Base	Northeast & South County Built; Build New Factoria; Houghton Closed	$1 - 2 million/yr	$3 - 6 million
A	Northeast Not Built; South County Built; Factoria Expanded; Houghton Closed	$1.5 - 2.5 million/yr	$6 - 9 million
A*	Northeast Not Built; South County Built; Build New Factoria; Houghton Self Haul only	$1.5 - 2.5 million/yr	$6 - 9 million
B	Northeast and South County Built; Factoria and Houghton Closed	$2.5 - 3.5 million/yr	$6 - 9 million
C	Northeast Built; Factoria & Houghton Closed; South County Not Built	$3 - 4.5 million/yr	$9 - 15 million
C**	Northeast Built; Factoria & Houghton Closed; South Not Built; Algona Self Haul Only	$3 - 4.5 million/yr	$9 - 15 million

D	Northeast & South County Not Built; Factoria Expanded; Houghton Closed	$2 - 3.5 million/yr	$9 - 15 million
D**	Northeast & South County Not Built; Factoria Expanded; Houghton Closed; Algona Self Haul Only	$2 - 3.5 million/yr	$9 - 15 million
D***	Northeast & South County Not Built; Build New Factoria; Algona & Houghton Self Haul Only	$2 - 3.5 million/yr	$9 - 15 million

*Renton to be closed in all of the above scenarios.

I hope you find that these cost estimates are helpful for your presentation. We apologize for the delay in getting these numbers to you. Even though these are presented as an estimated range, the scenarios elicited much discussion even though we have limited information to act upon at this time. If you have any questions about these costs, please let me know.

Sincerely,

Kim Kaminski (formerly Shanley)
Government Affairs, Pacific NW/British Columbia
kshanle1@wm.com

Waste Management
720 4th Ave, Ste 400
Kirkland, WA 98033
Tel 425 814 7841
Cell 425 293 9352

Appendix C: Drive Time Analysis
Alternatives Drive Time Maps
http://your.kingcounty.gov/solidwaste/about/Planning/documents/TWMP-Alt-Drive-Time-Maps.pdf

Appendix D: Detailed Transfer System Alternatives
Alternatives Station Detail

Appendix E: References
2001 Comprehensive Solid Waste Management Plan
http://your.kingcounty.gov/solidwaste/about/planning/documents-planning.asp#comp

Draft 2013 Comprehensive Solid Waste Management Plan
http://your.kingcounty.gov/solidwaste/about/Planning/documents/2013-swd-comp-plan.pdf

Solid Waste Transfer and Waste Management Plan
http://your.kingcounty.gov/solidwaste/about/planning/documents-planning.asp#plan

Ordinance 17437 (procurement)
http://your.kingcounty.gov/mkcc/clerk/OldOrdsMotions/Ordinance%2017437.pdf

Milestone Report 1

http://your.kingcounty.gov/solidwaste/about/planning/documents/Milestone_report-1.pdf

Milestone Report 2

http://your.kingcounty.gov/solidwaste/about/planning/documents/Milestone_report-2.pdf

Milestone Report 3

http://your.kingcounty.gov/solidwaste/about/planning/documents/Milestone_report-3.pdf

Milestone Report 4

http://your.kingcounty.gov/solidwaste/about/planning/documents/Milestone_report-4.pdf

Independent, Third Party Review of the Solid Waste Transfer and Waste Export System Plan
http://your.kingcounty.gov/solidwaste/about/planning/documents/solid-waste-transfer-export-review.pdf

Final Supplemental Environmental Impact Statement Transfer and Waste Export System Plan for King County, Washington (Draft Supplemental EIS published under the title: Waste Export System Plan for King County, Washington)
http://your.kingcounty.gov/solidwaste/about/planning/documents/TransferWasteExport_FSEIS2006-08-28.pdf

Appendix F: Ordinance Responsiveness Summary

Requirements	Ordinance Line	Response
Tonnage projections, to be based on waste volumes from cities that have indicated commitment to the regional solid waste system through 2040	9	Figure 2 Appendix B.1
Revenue projections, to be based on waste volumes from cities that have indicated commitment to the regional solid waste system through 2040	12	Report section "Assumptions" Page 8
Overall costs of the region-wide transfer station upgrade	15	Appendix B, all sections
Functionality and service alternatives at the respective transfer stations	16	Report section "Alternatives" Page 10 and Alternatives Station Detail
Level of service criteria addressed in the 2006 plan, with particular attention to options for revision to the travel time criterion in the plan, which requires that ninety percent of a 18 station's users be within thirty minutes' travel time	17	Table 5 and Appendix C
Retention and repair of the existing transfer station including itemized cost estimates for retention and repair and updated long-term tonnage projections	20	Appendix B.2
The recommendation 4 of the King County Performance Audit of Solid Waste Transfer Station Capital Projects, which requires systematic analysis of • incremental cost impacts of the number, capacities and functionality of the transfer stations and • assessment of project financing and delivery methods.	22	Appendix B, all sections Workshop 3 materials
The division, as part of the report, shall • document all efforts to engage stakeholder groups, • document all feedback received from stakeholder groups and • document any steps taken to incorporate this feedback into the final report.	29	Appendix A

Appendix G: Responsiveness Summary and Comments Received

The final report will contain a responsiveness summary followed by all of the written comments received between October 9 and October 23, in their entirety.