

Appendix K

WUTC Solid Waste Cost Assessment

1. DEMOGRAPHICS

	1992	1994	1997
1.1 POPULATION			
1.1.1 Total population in county (including Seattle)	1,565,000	1,606,000	1,673,000
1.1.2 Population of jurisdiction area (excluding Seattle)	1,043,000	1,078,000	1,135,000
1.2 HOUSING			
1.2.1 Residential properties in jurisdiction	422,000	441,000	469,000
1.2.2 Single-family dwellings	280,000	292,000	311,000
1.2.3 Multifamily dwellings	143,000	149,000	158,000
1.2.4 Average persons per single-family dwelling	3.11	3.08	3.05
1.2.5 Average persons per multifamily dwelling	1.20	1.19	1.18
1.3 BUSINESS			
1.3.1 Commercial businesses in jurisdiction	59,000	67,000	78,000

References and Assumptions

1.1.1 **References:** 1992, 1994, and 1997 King County jurisdictional population (excluding Seattle) estimates from the Puget Sound Regional Council (PSRC), *Population and Employment Forecast*, July 1992 Update. 1992 city of Seattle population and growth rate estimates from the PSRC, *Population and Employment Forecast*, October 1992 Update.

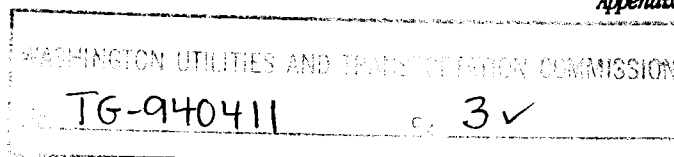
Assumptions: King County's total population is the sum of Seattle's population plus the jurisdictional population. The city of Seattle's 1992 estimated population growth rate of 0.6% remains constant through the planning period.

Calculations: 1992 Seattle and County populations are given and are referenced above. 1994 and 1997 populations are calculated by projecting Seattle's population from 1992 using the 1992 growth rate and then adding this projection to the given jurisdictional population referenced above.

1.1.2 **References:** 1992, 1994 and 1997 King County jurisdictional population estimates from the PSRC *Population and Employment Forecast*, July 1992 Update.

Assumptions: N/A.

Calculations: N/A.



1.2.1 **References:** 1991 Households from the *King County Annual Growth Databook 1992*. 1990 and 2010 Households from the October 1992 update (unpublished) to the *King County Annual Growth Databook 1992*.

Assumptions: Residential properties are assumed to grow at the same rate as residential households.

Calculations: Average annual total growth for the period 1990 to 2010 is interpolated from the October 1992 total forecast households – this figure approximates 9,369 households per year. 1992, 1994, and 1997 households are projected by adding the annual growth of 9,369 households to the 1991 estimated households presented in the 1992 Growth Databook.

1.2.2 **References:** 1991 single-family households from the *King County Annual Growth Databook 1992*. 1990 and 2010 Total households from the October 1992 update (unpublished) to the *King County Annual Growth Databook 1992*.

Assumptions: Single-family dwellings include properties with 1 to 4 units as well as mobile homes and trailers. Growth in single-family dwellings is assumed to correspond to growth in total number of households.

Calculations: Estimate what percent of the total number of households that single-family households account for using the 1991 estimated households presented in the 1992 Growth Databook – approximately 66%. 1992, 1994, 1997 Single-family dwellings are estimated as a percentage of the total number of households calculated for each planning year in 1.2.1 above.

1.2.3 **References:** 1991 Multifamily households from the *King County Annual Growth Databook 1992*. 1990 and 2010 Total households from the October 1992 update (unpublished) to the *King County Annual Growth Databook 1992*.

Assumptions: Multifamily dwellings include properties with more than 4 units excluding mobile homes and trailers. Growth in multifamily dwellings is assumed to correspond to growth in total number of households.

Calculations: Estimate what percent of the total number of households that multifamily households account for using the 1991 estimated households presented in the 1992 Growth Databook – approximately 34%. 1992, 1994, 1997 Multifamily dwellings are estimated as a percentage of the total number of households calculated for each planning year in 1.2.1 above.

1.2.4 **References:** Persons per single-family residence from the 1990 US Census. 1992, 1994, and 1997 Jurisdictional population from 1.1.2 above. 1992, 1994, and 1997 Single-family dwellings from 1.2.2 above.

Assumptions: Single-family dwellings include properties with 1 to 4 units, as well as, mobile homes and trailers. The percentage of persons per single-family residence remains constant relative to population throughout the planning period. Based on the 1990 US Census approximately 84% of persons live in single-family residential dwellings.

Calculations: (1) Estimate the number of persons living in single-family dwellings for 1992, 1994, and 1997 by multiplying the 1990 single-family residential percentage by each planning year's jurisdictional population. (2) Calculate the average number of persons per single-family dwelling for each planning year by dividing the yearly estimate of persons living in single-family dwellings from (1) by the number of single-family dwellings from 1.2.2 above.

1.2.5 **References:** Persons per multifamily residence from the 1990 US Census. 1992, 1994, and 1997 Jurisdictional population from 1.1.2 above. 1992, 1994, and 1997 Multifamily dwellings from 1.2.3 above.

Assumptions: Multifamily dwellings include properties with more than 4 units excluding mobile homes and trailers. The percentage of persons per multifamily residence remains constant relative to population throughout the planning period. Based on the 1990 US Census approximately 16% of persons live in multifamily residential dwellings.

Calculations: (1) Estimate the number of persons living in multifamily dwellings for 1992, 1994, and 1997 by multiplying the 1990 multifamily residential percentage by each planning year's jurisdictional population. (2) Calculate the average

number of persons per multifamily dwelling for each planning year by dividing the yearly estimate of persons living in multifamily dwellings from (1) by the number of multifamily dwellings from 1.2.3 above.

1.3.1 **References:** 1990 Number of covered employer units from Washington State Employment Security, *Employment and Payrolls in Washington State by County and Industry 1990*, Published Feb. 1992. 1990 and 2010 Employment from the October 1992 update (unpublished) to the *King County Annual Growth Databook 1992*.

Assumptions: Growth in number of businesses is consistent with growth in employment through the planning period. Number of businesses is consistent with the number of covered employers under the Washington Employment Security Act -- Covered businesses account for more than 85% of the state's employment and excludes certain family employment, self employment, casual laborers, and commission only workers.

Calculations: Calculate an annual employment growth rate for the period from 1990 to 2010 -- approximately 0.072% linear growth from 1990. Project 1992, 1994, and 1997 number of businesses by applying the growth rate from (1) to the 1990 number of covered businesses.

2. WASTE STREAM GENERATION

	1992	1994	1997
2.1 Tonnage Recycled			
Residential	112,000	157,000	229,000
Commercial	269,000	376,000	549,000
Self-haul	88,000	123,000	180,000
	469,000	656,000	958,000
2.2 Tonnage Disposed			
Residential	240,000	221,000	208,000
Commercial	361,000	333,000	313,000
Residential Self-haul	144,000	132,000	124,000
Commercial Self-haul	125,000	116,000	108,000
	870,000	802,000	753,000

References and Assumptions

2.1 **References:** 1992, 1994, and 1997 Waste generation and diversion tonnages from King County Solid Waste Division tonnage projections, March 1993 update (unpublished). Residential, commercial, and self-haul percentage components of the recycled material stream from the 1990 Washington State Department of Ecology *Recycling Survey Results*. 1992 Actual curbside recycling from monthly hauler reports supplied to King County by certificated haulers operating within the County. 1992 Estimated total diversion of 35% from the King County Solid Waste Division reduction and recycling projections, March 1993 update (unpublished).

Assumptions: The recycled material stream allocation percentages remain constant through the planning period -- residential 23.9%, commercial 57.3%, self-haul 18.8%.

Calculations: Recycled tonnages for each sector are estimated by multiplying the percentage allocations for each sector by the estimated total diversion tonnages from above. The projected 1992 curbside residential recycling tonnage estimate includes the 1992 actual recycled tonnage from the hauler reports and the estimated reduced tonnage from the Solid Waste Division reduction and recycling projections.

2.2 **References:** 1992 tonnage disposed from King County Solid Waste Division billing records. 1994 and 1997 Tonnage disposed from King County Solid Waste Division tonnage projections, March 1993 update (unpublished). Residential, commercial, and self-haul percentage components of the total waste stream from King County Solid Waste Division waste stream allocation estimates (unpublished), which were based on 1992 billings, hauler reports, and facility surveys.

Assumptions: The waste stream allocation percentages remain constant through the planning period -- residential 27.6%, commercial 41.5%, residential self-haul 16.5%, and commercial self-haul 14.4%.

Calculations: Disposed tonnages for each sector are estimated by multiplying the percentage allocations for each sector by the total disposal forecast above.

3. SYSTEM COMPONENT COSTS

	1992	1994	1997
3.1	WASTE REDUCTION PROGRAMS		
3.1.1	Waste Reduction Programs		
	See Plan, Chapter III		
3.1.2	Waste Reduction Costs		
	988,000	1,059,000	1,174,000
3.1.3	Funding Mechanism		
	tipping fees, grants, collection rates, and general fund		
3.2	RECYCLING PROGRAMS		
3.2.1	Recycling Programs		
	See Plan, Chapter III		
3.2.1a	Waste Recycling Costs		
	3,952,000	4,234,000	4,694,000
	Marketing Commission Costs		
	585,000	627,000	695,000
	Total Costs		
	4,538,000	4,861,000	5,389,000
3.2.2	<i>Urban Recycling Programs</i>		
3.2.2.1	Curbside Eligible Households		
	Single-family Households		
	223,000	233,000	248,000
	Multifamily Households		
	59,000	187,000	205,000
3.2.2.2	Diversion Rate (lbs/household/mo.)		
	34	46	63
3.2.2.3	Percent Collected by WUTC Haulers		
	Single-family Households		
	100%	100%	100%
	Multifamily Households		
	100%	100%	100%
3.2.2.4	Net Cost for Urban Recycling		
	Included in 3.2.1a		
3.2.2.5	Funding Mechanism		
	grants, collection rates, and general fund.		
3.2.3	<i>Rural Recycling Programs</i>		
3.2.3.1	Curbside Eligible Households		
	Single-family Households		
	199,000	208,000	221,000
	Multifamily Households		
	n/a	n/a	n/a
3.2.3.2	Diversion Rate (lbs/household/mo.)		
	34	46	63
3.2.3.3	Percent Collected by WUTC Haulers		
	Single-family Households		
	100%	100%	100%
	Multifamily Households		
	n/a	n/a	n/a
3.2.3.4	Net Cost for Urban Recycling		
	Included in 3.2.1a		
3.2.3.5	Funding Mechanism		
	tip fees, grants, collection rates, general fund.		
3.2.4	<i>Commercial Recycling Programs</i>		
3.2.4.1	Curbside Eligible Businesses		
	59,000	67,000	78,000
3.2.4.2	Diversion Rate (lbs/business/mo.)		
	760	935	1,173
3.2.4.3	Percent Collected by WUTC Haulers		
	39%	39%	39%
3.2.4.4	Net Cost/Commercial Recycling		
	Included in 3.2.1a		
3.2.4.5	Funding Mechanism		
	grants, collection rates, general fund.		
3.2.5	<i>Drop-off/Buy-back</i>		
	See References and Assumptions		
3.2.5.1	Diversion Rate Tons/Month		
	0	0	0
3.2.5.2	% Operated by WUTC Haulers		
	0%	0%	0%
3.3	Composting		
3.3.1	Diversion Rate (lbs/household/mo.)		
	24	36	53
3.3.2	Percent Collected by WUTC Haulers		
	100%	100%	100%
3.3.3	Funding Mechanism		
	tipping fees, collection rates, general fund.		

References and Assumptions

3.1.2 It is assumed that 20 percent of county and suburban cities waste reduction and recycling program costs are dedicated specifically to reduction programs and/or recycling programs that include a waste reduction component, such as education programs. For the years 1994 and 1997 the costs are inflated by 5 percent per year. For detailed information on recommended reduction programs, see Volume I, Chapter III.

3.1.3 Waste reduction programs are funded as follows:

	1992	1994	1997
Tip Fees	61%	47%	62%
Grants	6%	20%	6%
Collection Rates	26%	26%	26%
Surcharges	6%	6%	5%
General Fund	1%	1%	1%

3.2.1.a Estimated 1992 costs include all costs incurred by the County and suburban cities that are directly attributable to recycling programs. Estimated costs for 1994 and 1997 are based on 1992 costs inflated at 3.5 percent per year.

3.2.2.1 **References:** 1992, 1994, and 1997 Residential households from Section 1.2.1 above. Urban/Rural households from the *King County Annual Growth Databook 1992*. 1992, 1994, and 1997 Tonnage recycled from Section 2.1 above. 1992 Yard waste from hauler reports.

Assumptions: The urban/rural percentage split remains constant over the planning period.

Calculations: Calculate the percent of urban households from the figures presented in the Annual Growth Databook -- approximately 53% of households are urban. Estimate curbside eligible households by multiplying the percentage of urban households by each planning year's projected number of households.

3.2.2.2 **References:** 1992, 1994, and 1997 Households from 3.2.2.1 above. 1992, 1994, and 1997 Tonnages recycled from Section 2.1 above. 1992 Curbside yard waste from hauler reports.

Assumptions: The non-yard waste percent remains constant through the planning period.

Calculations: Calculate the percent of curbside non-yard waste from the hauler reports and the total recycled tonnage - approximately 78% of the curbside tonnage is non-yard waste. Estimate curbside non-yard waste diversion for each planning year by multiplying the above percentage by each planning year's total diversion. Calculate the diversion rate by dividing the non-yard waste estimated diversion for each planning year by the urban households and by 12 months in each year then multiply by 2000 pounds per ton.

3.2.2.3 **References:** N/A

Assumptions: All curbside programs reporting to the Solid Waste Division are operated by certificated haulers. Therefore, 100% of the diversion is attributable to these haulers.

Calculations: N/A

3.2.2.5 Urban recycling programs are funded as follows:

	1992	1994	1997
Grants	18%	18%	18%
Collection Rates	78%	78%	78%
General Fund	4%	4%	4%

3.2.3.1 **References:** 1992, 1994, and 1997 Residential households from Section 1.2.1 above. Urban/Rural households from the *King County Annual Growth Databook 1992*. **Assumptions:** The urban/rural percentage split remains constant over the planning period.

Calculations: Calculate the percent of rural households from the figures presented in the Annual Growth Databook -- approximately 47% of households are rural. Estimate curbside eligible households by multiplying the percentage of rural households by each planning year's projected number of households.

3.2.3.2 **References:** 1992, 1994, and 1997 Households from 3.2.3.1 above. 1992, 1994, and 1997 Tonnages recycled from Section 2.1 above. 1992 Curbside yard waste from hauler reports.

Assumptions: The non-yard waste percent remains constant through the planning period.

Calculations: Calculate the percent of curbside non-yard waste from the hauler reports and the total recycled tonnage - approximately 78% of the curbside tonnage is non-yard waste. Estimate curbside non-yard waste diversion for each planning year by multiplying the above percentage by each planning year's total diversion. Calculate the diversion rate by dividing the non-yard waste estimated diversion for each planning year by the rural households and by 12 months in each year then multiply by 2000 pounds per ton.

3.2.3.3 **References:** N/A.

Assumptions: All curbside programs reporting to the Solid Waste Division are operated by certificated haulers. Therefore, 100% of the diversion is attributable to these haulers.

Calculations: N/A.

3.2.3.5 Rural recycling programs are funded as follows:

	1992	1994	1997
Tip Fees	64%	73%	83%
Grants	19%	10%	0%
Collection Rates	16%	16%	16%
General Fund	1%	1%	1%

3.2.4.1 **References:** 1992, 1994, and 1997 Businesses from Section 1.3.1 above.

Assumptions: N/A.

Calculations: N/A.

3.2.4.2 **References:** 1992, 1994, and 1997 Tonnages recycled from Section 2.1 above.

Assumptions: N/A.

Calculations: Calculate the diversion rate by dividing the estimated diversion for each planning year by the number of businesses and by 12 months in each year then multiply by 2000 pounds per ton.

3.2.4.3 **References:** 1992 Tonnage collected from the hauler reports.

Assumptions: Percentage of the total diversion that the haulers account for remains constant through the planning period.

Calculations: Calculate % collected by dividing the 1992 tonnage collected from the hauler reports by the total estimated diversion in 2.1 above.

3.2.4.5 Commercial recycling programs are funded as follows:

	1992	1994	1997
Grants	18%	18%	18%
Collection Rates	78%	78%	78%
General Fund	4%	4%	4%

3.2.5 Drop-boxes are a component of each of the recycling programs described above and are discussed in each area, i.e., urban single-family programs, rural programs, etc.

3.2.5.1 **References:** 1992, 1994, and 1997 Self haul tonnages recycled from Section 2.1 above. 1992 Auburn 3,000 tons recycled from Department of Ecology.

Assumptions: N/A

Calculations: Total diversion is estimated by summing the self haul tonnage from Section 2.1 and the reported Auburn dropoff station tonnage. Calculate the diversion rate by dividing the estimated diversion for each planning year by 12 months in each year then multiply by 2000 pounds per ton.

3.2.5.2 **References:** N/A

Assumptions: The curbside hauler companies for the most part do not operate buyback centers. For those companies that do, the buyback businesses are independent from the curbside hauler operations and, therefore, cannot be directly attributed to any curbside operation.

Calculations: N/A

3.3.1 **References:** 1992, 1994, and 1997 Households from Section 1.2.1 above. 1992 Actual tonnage from the hauler reports. 1992, 1994, and 1997 Curbside tonnages Section 2.1 above.

Assumptions: Growth in curbside yard waste collection is consistent with growth in total curbside collection from 3.2 above.

Calculations: (1) Calculate the diversion rate for 1992 by dividing the reported yard waste collected by the number of 1992 households by 12 months the year. (2) Calculate the annual increase in curbside collection for 1994 and 1997 by dividing the difference between each of the two planning years by the starting year tonnage estimate – 0.006 increase to 1994, 0.009 increase to 1997. (3) Calculate the diversion rate for 1994 and 1997 by adding the annual increase in (2) for each planning year to the preceding year's diversion rate.

3.3.2 **References:** N/A

Assumptions: All curbside programs reporting to the Solid Waste Division are operated by certificated haulers. Therefore, 100% of the diversion is attributable to these haulers.

Calculations: N/A

3.3.3 Yard waste collection programs are funded as follows:

	1992	1994	1997
Grants	18%	18%	18%
Collection Rates	78%	78%	78%
General Fund	4%	4%	4%

Table 3.1 Diversion Potential and Costs for Recommended Programs

	1992 Costs and Results					
	Total Tons	% Waste Stream	Cost per Household *	Cost per Business *	Implementation Responsibility **	Funding Sources **
Residential Programs						
Single-family Primary Recyclables	64,200	4.79%	2.92	0.00	P/C/Co	P/C/Co
Multifamily Primary Recyclables	5,100	0.38%	1.30	0.00	P/C/Co	P/C/Co
Secondary Recyclables	12,100	0.90%	0.02	0.00	C/Co	C/Co
Buy-back Centers	6,100	0.46%	N/A	0.00	P	P
Wood Waste	1,000	0.07%	0.02	0.00	Co	T
Construction/Demolition	0	0.00%	0.00	0.00	Co	T
Drop Sites (Primary Recyclables)	1,400	0.10%	0.24	0.00	Co	T
Clean-up Events	900	0.07%	0.05	0.00	C/Co	C/T
	90,800	6.78%				
Nonresidential Programs						
Nonresidential Recycling	303,500	22.65%	0.45	2.14	P/C/Co	P/C/T
Wood Waste	1,000	0.07%	0.01	0.07	Co	T
Construction/Demolition	0	0.00%	0.00	0.00	Co	T
	304,500	22.72%				
Yard Waste Programs						
Single-family Collection	20,600	1.54%	3.50	0.00	P/C/Co	P/C/Co
Multifamily Collection	0	0.00%	1.25	0.00	P/C/Co	P/C/Co
Self-haul to Transfer Stations	1,800	0.13%	7.41	0.00	Co	T
Nonresidential Collection	100	0.01%	0.01	0.07	P/Co	P/T
Roll-off Services	0	0.00%	N/A	N/A	P	P
Drop Boxes	28,300	2.11%	0.00	0.00	P	P
	50,800	3.79%				
Waste Reduction Programs						
Residential Programs	12,300	0.92%	1.26	0.00	C/Co	C/T
Nonresidential Programs	10,600	0.79%	0.00	7.75	C/Co	C/T
	22,900	1.71%				
Total Diversion	469,000	35.00%				
Total Waste Disposed	871,000	65.00%				
Total Waste Stream	1,340,000	100.00%				

NOTES

* \$ per month ** P = Private, C = City, Co = County, T = Tip Fee

1. Nonresidential program costs are for educational programs.
2. The unit cost for self-hauling yard waste to transfer stations is the minimum charge for PLV-licensed vehicles.
3. The public cost for yard waste drop box depots in 1994 represents a one-time-only expenditure to assist the private sector in establishing a depot system as part of the implementation of the planned yard waste disposal ban at County transfer stations.

Diversion Potential and Costs for Recommended Programs (Continued)

	1994 Costs and Results					
	Total Tons	% Waste Stream	Cost per Household *	Cost per Business *	Implementation Responsibility **	Funding Sources **
Residential Programs						
Single-family Primary Recyclables	95,700	6.56%	3.13	0.00	P/C/Co	P/C/Co
Multifamily Primary Recyclables	19,300	1.32%	1.39	0.00	P/C/Co	P/C/Co
Secondary Recyclables	16,500	1.13%	0.02	0.00	C/Co	C/Co
Buy-back Centers	9,300	0.64%	N/A	0.00	P	P
Wood Waste	10,000	0.69%	0.02	0.00	Co	T
Construction/Demolition	1,500	0.10%	0.10	0.00	Co	T
Drop Sites (Primary Recyclables)	2,800	0.19%	0.01	0.00	Co	T
Clean-up Events	2,100	0.14%	0.68	0.00	C/Co	C/T
	157,200	10.77%				
Nonresidential Programs						
Nonresidential Recycling	352,900	24.19%	0.44	1.95	P/C/Co	P/C/T
Wood Waste	15,100	1.03%	0.01	0.06	Co	T
Construction/Demolition	4,900	0.34%	0.00	2.63	Co	T
	372,900	25.56%				
Yard Waste Programs						
Single-family Collection	31,200	2.14%	3.75	0.00	P/C/Co	P/C/Co
Multifamily Collection	2,500	0.17%	1.34	0.00	P/C/Co	P/C/Co
Self-haul to Transfer Stations	6,100	0.42%	7.41	0.00	Co	T
Nonresidential Collection	1,000	0.07%	0.01	0.06	P/Co	P/T
Roll-off Services	700	0.05%	N/A	N/A	P/Co	P
Drop Boxes	42,400	2.91%	0.12	3.12	Co	
	83,900	5.75%				
Waste Reduction Programs						
Residential Programs	23,800	1.63%	1.32	0.00	C/Co	C/T
Nonresidential Programs	19,500	1.34%	0.00	7.11	C/Co	C/T
	43,300	2.97%				
Total Diversion	711,000	45.05%				
Total Waste Disposed	802,000	54.97%				
Total Waste Stream	1,459,000	100.00%				

NOTES

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1. Nonresidential program costs are for educational programs.
2. The unit cost for self-hauling yard waste to transfer stations is the minimum charge for PLV-licensed vehicles.
3. The public cost for yard waste drop box depots in 1994 represents a one-time-only expenditure to assist the private sector in establishing a depot system as part of the implementation of the planned yard waste disposal ban at County transfer stations.

Diversion Potential and Costs for Recommended Programs (Continued)

	1997 Costs and Results					
	Total Tons	% Waste Stream	Cost per Household *	Cost per Business *	Implementation Responsibility **	Funding Sources **
Residential Programs						
Single-family Primary Recyclables	148,500	8.67%	3.24	0.00	P/C/Co	P/C/Co
Multifamily Primary Recyclables	42,100	2.46%	1.44	0.00	P/C/Co	P/C/Co
Secondary Recyclables	24,000	1.40%	0.02	0.00	C/Co	Co
Buy-back Centers	14,500	0.85%	N/A	0.00	P	P
Wood Waste	24,400	1.43%	0.02	0.00	Co	T
Construction/Demolition	3,900	0.23%	0.10	0.00	Co	T
Drop Sites (Primary Recyclables)	5,000	0.29%	0.01	0.00	Co	T
Clean-up Events	4,100	0.24%	0.71	0.00	C/Co	C/T
	266,500	15.67%				
Nonresidential Programs						
Nonresidential Recycling	445,900	26.05%	0.45	1.80	P/C/Co	P/C/T
Wood Waste	37,500	2.19%	0.01	0.06	Co	T
Construction/Demolition	12,500	0.73%	0.00	2.45	Co	T
	495,900	28.97%				
Yard Waste Programs						
Single-family Collection	49,000	2.86%	3.88	0.00	P/C/Co	P/C/Co
Multifamily Collection	6,500	0.38%	1.39	0.00	P/C/Co	P/C/Co
Self-haul to Transfer Stations	6,000	0.35%	7.41	0.00	Co	T
Nonresidential Collection	2,300	0.13%	0.01	0.06	P/Co	P/T
Roll-off Services	1,800	0.11%	N/A	N/A	P	P
Drop Boxes	73,000	4.26%	0.00	0.00	P	P
	138,600	8.10%				
Waste Reduction Programs						
Residential Programs	31,900	1.86%	1.47	0.00	C/Co	C/T
Nonresidential Programs	25,800	1.51%	0.00	7.83	C/Co	C/T
	57,700	3.37%				
Total Diversion	959,000	56.00%				
Total Waste Disposed	753,000	43.98%				
Total Waste Stream	1,712,000	100.00%				

NOTES

* \$ per month ** P = Private, C = City, Co = County, T = Tip Fee

1. Nonresidential program costs are for educational programs.
2. The unit cost for self-hauling yard waste to transfer stations is the minimum charge for PLV-licensed vehicles.
3. The public cost for yard waste drop box depots in 1994 represents a one-time-only expenditure to assist the private sector in establishing a depot system as part of the implementation of the planned yard waste disposal ban at County transfer stations.

3.4 SOLID WASTE COLLECTION PROGRAMS

3.4.1 Regulated Solid Waste Collection Firms

	1992	1994	1997		1992	1994	1997
Lawson Disposal (G-41)				Nick Raffo Garbage Co (G-16)			
Residential Customers	8,400	8,700	9,100	Residential Customers	9,200	9,500	10,000
Residential Tons	6,100	5,600	5,300	Residential Tons	9,200	8,400	7,900
Commercial Customers	700	800	900	Commercial Customer	1,300	1,500	1,800
Commercial Tons	7,800	7,200	6,700	Commercial Tons	38,900	35,900	33,700
Container Hauling (G-12)				RST Disposal (G-185)			
Residential Customers	0	0	0	Residential Customers	8,300	8,500	9,000
Residential Tons	0	0	0	Residential Tons	8,000	7,300	6,900
Commercial Customers	N/A	N/A	N/A	Commercial Customers	1,300	1,500	1,700
Commercial Tons	38,100	35,100	33,000	Commercial Tons	32,100	29,600	27,900
Eastside Disposal (G-12)				Tri-Star Disposal (G-185)			
Residential Customers	48,200	49,800	52,400	Residential Customers	0	0	0
Residential Tons	40,700	37,500	35,300	Residential Tons	0	0	0
Commercial Customers	3,500	4,000	4,600	Commercial Customers	1,400	1,600	1,800
Commercial Tons	48,000	44,300	41,600	Commercial Tons	46,700	43,100	40,500
Sea Tac Disposal (G-12)				Sno-King Garbage (G-126)			
Residential Customers	19,100	19,800	20,800	Residential Customers	36,500	37,800	39,800
Residential Tons	14,700	13,500	12,800	Residential Tons	37,100	34,100	32,100
Commercial Customers	2,700	3,000	3,500	Commercial Customers	2,600	2,900	3,400
Commercial Tons	47,200	43,500	40,900	Commercial Tons	69,200	63,800	60,000
Kent Disposal (G-12)				Rainier Disposal (G-63)			
Residential Customers	4,900	5,000	5,300	Residential Customers	26,500	27,400	28,800
Residential Tons	4,100	3,700	3,500	Residential Tons	24,300	22,400	21,100
Commercial Customers	700	800	1,000	Commercial Customers	1,500	1,700	2,000
Commercial Tons	12,500	11,600	10,900	Commercial Tons	47,000	43,400	40,800
Meridian Valley (G-60)				Waste Management - Northwest (G-43)			
Residential Customers	22,300	23,100	24,300	Residential Customers	7,800	8,100	8,500
Residential Tons	18,700	17,200	16,200	Residential Tons	6,700	6,200	5,800
Commercial Customers	800	900	1,100	Commercial Customers	400	500	600
Commercial Tons	19,200	17,700	16,600	Commercial Tons	12,400	11,400	10,700
Federal Way Disposal (G-35)				Island Disposal (G-32)			
Residential Customers	13,900	14,400	15,200	Residential Customers	N/A	N/A	N/A
Residential Tons	11,400	10,500	9,900	Residential Tons	200	200	200
Commercial Customers	900	1,000	1,100	Commercial Customers	N/A	N/A	N/A
Commercial Tons	27,200	25,100	23,600	Commercial Tons	600	500	500

3.4.2 Nonregulated Solid Waste Collection Firms

	1992	1994	1997
Eastmont Development Corp.*			
Residential Customers	n/a	n/a	n/a
Residential Tons	20,700	19,000	17,900
Commercial Customers	n/a	n/a	n/a
Commercial Tons	97,400	89,800	84,300

* (Owned and operated by Waste Management, Seattle)

3.4.3 Collection Costs

City of Enumclaw Only	\$773,000	\$812,000	\$853,000
Moderate Risk Waste	1,918,000	2,055,000	2,278,000

3.4.4 Funding Mechanism Household hazardous waste surcharge, collection rates

References and Assumptions

3.4.1 References: 1992 Tonnages and customer counts from King County Solid Waste Division billing records and hauler reports. 1994 and 1997 Total tons from Section 2.2 above. 1994 and 1997 population and businesses from Sections 1.1 and 1.3 above.

Assumptions: The ratio of each hauler's tonnage and customer counts to the overall system totals is assumed to remain constant through the planning period.

Calculations: Project the growth for 1994 and 1997 of each hauler's tonnage and customer counts relative to the overall system totals using the figures presented in Sections 1.1, 1.3, and 2.1 above. Add the projected growth to the 1992 and 1994 figures to estimated the 1994 and 1997 respective values.

3.4.2 References: 1992 Tonnages from the hauler reports. 1994 and 1997 Total tons from Section 2.2 above. Customer counts N/A.

Assumptions: The ratio of each hauler's tonnage to the overall system totals is assumed to remain constant through the planning period.

Calculations: Project the growth for 1994 and 1997 of each hauler's tonnage relative to the overall system totals using the figures presented in Section 2.1 above. Add the projected growth to the 1992 and 1994 figures to estimated the 1994 and 1997 respective values.

3.4.3 Costs for 1992 were provided by the city of Enumclaw and are disaggregated as follows:

Operations salaries	\$172,000
Uniforms	1,000
Supplies	500
Other services	23,000
Rentals	85,000

Machinery and equipment	15,000
Operating transfers	<u>6,000</u>
Total collection costs	\$303,000
Total disposal costs	<u>470,000</u>
Total Costs	\$773,000

Actual collection costs for the 1992 Moderate Risk Waste Program are provided as follows:

Household collection	\$1,825,000
Targeted waste collection	<u>22,000</u>
SQG compliance	<u>72,000</u>
Total collection costs	\$1,918,000

Collection costs for 1994 and 1997 were estimated by inflating the 1992 figures by 3.5 percent per year.

3.4.4 Enumclaw collection costs are funded by collection fees. Moderate risk waste collection costs are funded by grants and by a moderate risk waste surcharge imposed by the Seattle-King County Department of Public Health. Projected costs are a function of the *Local Hazardous Waste Management Plan* budget.

3.5	TRANSFER/LONG-HAUL PROGRAMS	1992	1994	1997
3.5.1	Transfer Programs			
3.5.1.1	Transfer Costs			
	Operating	12,497,000	13,193,000	14,357,000
	Capital	15,302,000	18,044,000	1,100,000
	Equipment	1,892,000	0 *	1,882,000
3.5.1.2	Final Disposal Facilities	Cedar Hills Regional Landfill		
3.5.1.3	Funding Mechanism	Tipping fees, bonds, Landfill Reserve Fund, Capital Equipment Replacement Fund		
3.5.2	Long-haul Programs			
3.5.2.1	Tons Per Year	120,000	500,000	550,000
3.5.2.2	Long-haul Costs	0	0	0
3.5.2.3	Funding Mechanism	Tipping fees, surcharges		
3.6	ENERGY RECOVERY & INCINERATION (ER&I) PROGRAMS - n/a			
3.7	LAND DISPOSAL PROGRAM			
3.7.1	Land Disposal Facilities			
	Landfill Name	Owner	Operator	
	Cedar Hills	King County Solid Waste Division	King County Solid Waste Division	
	Vashon	King County Solid Waste Division	King County Solid Waste Division	
	Hobart	King County Solid Waste Division	King County Solid Waste Division	
	Enumclaw	City of Enumclaw	King County Solid Waste Division	
3.7.2	Tons Disposed/WUTC Haulers			
	Cedar Hills	627,000	578,000	544,000
	Vashon	800	700	700
	Hobart	0	Closed	Closed
	Enumclaw	3,561	Closed	Closed
3.7.3	Tons Disposed/Non-WUTC Haulers			
	Cedar Hills	237,000	219,000	204,000
	Vashon	6,300	5,600	5,600
	Hobart	10,384	Open ½ yr.	Closed
	Enumclaw	2,561	Closed	Closed
3.7.4	Landfill Operating Costs			
	Cedar Hills			
	Operating	5,309,000	5,490,000	5,694,000
	Capital	28,294,000	0	0
	Equipment	1,703,000	0	1,844,000
	Vashon			
	Operating	379,000	406,000	421,000
	Capital	336,000	0	0
	Equipment	63,000	0	38,000
	Hobart			
	Operating	379,000	203,000	Closed
	Capital	2,993,000	2,739,000	Closed
	Equipment	63,000	0	Closed
	Enumclaw			
	Operating	379,000	Closed	Closed
	Capital	2,746,000	Closed	Closed
	Equipment	63,000	Closed	Closed
3.7.5	Funding Mechanism	Tipping fees, bonds, Landfill Reserve Fund, Environmental Reserve Fund		

* The \$0 contribution for equipment in 1994 is a one-time adjustment due to development of a new replacement model, fleet downsizing due to tonnage declines and replacement schedule revisions.

References and Assumptions

3.5 Transfer/Long-haul Programs

3.5.1 Transfer Programs

3.5.1.1 Elements of the 1992 operating budget that are directly attributable to waste transfer are indicated in Table 3.2. Estimated costs for 1994 and 1997 are based as follows: fixed costs are based on 1992 costs and are inflated by 3.5 percent per year; variable costs, which are defined as costs directly related to the amount of tonnage transferred, are allocated on a per-ton basis each year.

Elements of the 1992, 1994, and 1997 Capital Improvement Program (CIP) are based on the six-year CIP project schedule, which is funded through 1987, 1989, 1992, and 1995 bonds; the Landfill Reserve Fund; and the Environmental Reserve Fund (see Table 4.3 for detailed transfer projects).

Please note that the yearly expenditure projections may be overstated because multiyear projects may be budgeted in one year.

Elements of the 1992, 1994, and 1997 equipment budgets are based on the results of the Solid Waste Division's "Capital Equipment Replacement Program" model. The model is designed to calculate the amount of money needed to be transferred from the Operating Fund to the Capital Equipment Replacement Fund in order fully fund equipment replacement at the end of its useful life. The model assumes that approximately 50 percent of the equipment purchases each year are directly related to transfer station activity.

Table 3.5 Capital Equipment Replacement Program Fund, 1992-1997

	1992	1994	1997
Beginning Fund Balance	9,834,000	11,187,000	9,928,000
Revenue - Interest	817,000	708,000	517,298
Salvage value	545,000	256,000	1,364,000
Expenditures	(4,788,000)	(2,562,000)	(7,771,000)
Transfer from Operating Fund	3,785,000	1,028,000	3,763,000
Ending Fund Balance	10,243,000	10,617,018	7,801,000

3.5.1.2 All mixed municipal solid waste transferred from County transfer facilities is disposed at the Cedar Hills Regional Landfill. This is not expected to change during the six-year planning period.

3.5.1.3 Transfer costs are funded as follows:

	1992	1994	1997
Tip Fees	28%	36%	82%
Bonds	67%	64%	5%
CERP	5%	0%	13%

* See 4.3.1 for project-specific detail.

3.5.2 Long-haul Programs

3.5.2.1 The County will consider waste export as an alternative for future mixed municipal solid waste disposal needs. However, present landfill capacity is more than adequate to serve the County through the six-year planning period and beyond.

The County is in the process of contracting with a private company or companies for the disposal of construction, demolition, and land clearing (CDL) waste and plans to begin out-of-county disposal of CDL in 1993. The 1992 disposal figure of 120,000 tons per year is based on that portion of the CDL waste stream generated in King County that is currently being transferred out-of-county by a private hauler (Rabanco). Projections for 1994 and 1997 are based on the CDL project Final Environmental Impact Statement estimates of 600,000 tons per year minus 5 percent for anticipated recycling activity.

3.5.2.2 The CDL facility will be owned and operated by the private companies (Rabanco and Waste Management). The County will incur some administrative costs, which are 100 percent reimbursable from the contractor to the County. Therefore, the net cost impact should be zero.

3.5.2.3 The private vendor(s) will impose a per-ton tip fee to recover costs. The Solid Waste Division will impose a per-ton administrative surcharge to the CDL facility owners to cover administrative costs incurred by the Division.

3.6 Energy Recovery and Incineration Programs

No waste-to-energy facilities are under consideration for implementation in King County during the planning period.

3.7 Land Disposal Programs

3.7.1 Cedar Hills is owned by King County. The Washington State Department of Natural Resources previously owned the facility. Transfer of ownership occurred on June 22, 1992.

3.7.2 Based on the Solid Waste Division's internal records, approximately 73 percent of the overall tonnage delivered to Cedar Hills, and 11 percent of tonnage delivered to the Vashon Landfill is transferred by WUTC-regulated haulers. No waste delivery to Hobart is done via WUTC-regulated haulers (see Section 3.4.1).

3.7.3 Based on the Solid Waste Division's internal records, 100 percent of the tonnage delivered to the Hobart Landfill, 89 percent of tonnage delivered to the Vashon Landfill, and 27 percent of tonnage delivered to Cedar Hills is transferred by contributors other than WUTC-regulated haulers.

3.7.4 Elements of the 1992 operating budget that are directly attributable to landfill disposal are indicated in Table 3.2. Estimated costs for 1994 and 1997 are based as follows: fixed costs are based on 1992 costs inflated by 3.5 percent per year; variable costs, which are defined as costs directly related to the amount of tonnage received at each landfill, are estimated on a per-ton basis for each year.

Elements of the 1992, 1994, and 1997 CIP are based on the six-year CIP project schedule, which is funded through 1987, 1989, 1992, and 1995 bonds, the Landfill Reserve Fund, and the Environmental Reserve Fund (see Table 4.3.1 for detailed landfill projects). Please note that the yearly CIP expenditure projections may be overstated because multiyear projects may be budgeted in one year.

Elements of the 1992, 1994, and 1997 equipment budgets are based on the results of the Solid Waste Division's Capital Equipment Replacement Program Fund (CERP) model (see 3.4). The model assumes that approximately 45 percent of the equipment purchases each year are directly related to Cedar Hills Landfill, and 1.66 percent of all equipment purchases are allocated to each rural landfill.

The 1994 Hobart operating and CERP costs are based on six months of operation.

3.7.5 Funding Mechanism

	1992	1994	1997
Tip Fee	14%	43%	32%
Grants	0	3	0
Bond	9	0	0
Landfill Reserve	70	53	56
Environmental Reserve	3	2	3
CERP	4	0	9

3.8 ADMINISTRATION PROGRAM

	1992	1994	1997
3.8.1 Management Administration Cost	\$33,769,671	\$31,880,996	\$33,629,867
3.8.2 Costs Components	fund transfers, administrative staff and related administrative costs		
3.8.3 Funding Mechanism	tip fee, collection rate, surcharge, general fund, grants		
3.9 OTHER PROGRAMS - n/a			

3.8 Administration Program

3.8.1 Includes costs for the County and the suburban cities.

3.8.2 Elements of the 1992 operating budget that are directly attributable to administrative costs are indicated in Table 3.2. Estimated costs for 1994 and 1997 are based on 1992 costs inflated by 3.5 percent per year.

3.8.3 Administrative costs are funded as follows:

	1992	1994	1997
Tip Fee	95.0%	95.0%	94.0%
Collection Rates	4.0	4.0	4.0
Surcharge	0.5	0.5	0.5
General Fund	0.2	0.2	0.2
Grants	1.0	1.0	1.0

3.9 Other Programs - n/a

Table 3.2 Solid Waste Division Operating Expenditure Projections

Detail	1992	1994	1997
3.1.2 Waste Reduction	988,000	1,059,000	1,174,000
3.2 Recycling	4,538,000	4,861,000	5,389,000
3.4.3 General Collection Costs	303,000	325,000	360,000
3.4.3 MRW Collection Costs	1,918,000	2,055,000	2,278,000
3.5.1.1 Customer Transactions	1,498,000	1,605,000	1,780,000
3.5.1.1 Transfer Operations	3,630,000	4,536,000	5,029,000
3.5.1.1 Transportation	3,753,000	3,350,000	3,527,000
3.5.1.1 Shop Costs (Transfer)	3,615,000	3,702,000	4,021,000
3.7.4 Shop Costs (Landfill)	1,551,000	1,617,000	1,724,000
3.7.4 Cedar Hills	5,309,000	5,490,000	5,694,000
3.7.4 Rural Landfills	1,138,000	813,000	421,000
3.7.4 LFG/Wastewater	525,000	563,000	624,000
3.8.1 Administrative Transfers			
<i>Overhead</i>	977,000	1,046,000	1,160,000
<i>LTGO Bonds</i>	7,686,000	7,712,000	7,712,000
<i>CERP</i>	3,785,000	0	3,763,000
<i>Landfill Reserve Fund</i>	14,749,000	12,186,000	12,700,000
3.8.1 Administration	4,227,000	4,528,000	4,696,000
3.8.1 Legal	191,000	205,000	227,000
3.8.1 Engineering Services	1,362,000	1,459,000	1,618,000
3.8.1 Program Planning	693,000	742,000	823,000
3.8.1 Fiscal Services	745,000	798,000	885,000
3.8.1 Operations Administration	895,000	959,000	1,063,000
3.8.1 MRW Admin/Educ	95,000	102,000	113,000
Total Operating Budget	64,171,000	59,712,000	66,781,000
<i>King County</i>	60,599,000	55,886,000	61,961,000
<i>Suburban Cities</i>	3,572,000	3,827,000	4,243,000
Summary			
3.1.2 Total Waste Reduction	988,000	1,059,000	1,174,000
<i>King County</i>	661,000	708,000	785,000
<i>Suburban Cities</i>	327,000	350,000	388,000
3.2 Total Recycling	4,538,000	4,861,000	5,389,000
<i>King County</i>	2,645,000	2,833,000	3,141,000
<i>Marketing Commission</i>	585,000	627,000	695,000
<i>Suburban Cities</i>	1,307,000	1,401,000	1,553,000
3.4 Total Collection	2,222,000	2,380,000	2,639,000
<i>King County</i>	1,918,000	2,055,000	2,278,000
<i>Suburban Cities</i>	303,000	325,000	360,000
3.8.1 Total Administration	35,404,000	29,737,000	34,759,000
<i>King County</i>	33,770,000	27,986,000	32,818,000
<i>Suburban Cities</i>	1,634,000	1,751,000	1,941,000
3.5.1.1 Total Transfer	12,497,000	13,193,000	14,357,000
3.7.4 Total Disposal	8,523,000	8,483,000	8,463,000
	64,171,000	59,712,000	66,781,000

4. FUNDING MECHANISMS

4.1 TIPPING FEES

4.1.1 Facility Names

<u>Landfills</u>	<u>Transfer Stations</u>	<u>Drop-boxes</u>
Cedar Hills	Algona	Cedar Falls
Vashon	Bow Lake	Skykomish
Hobart*	Enumclaw	
	Factoria	
	First Northeast	
	Houghton	
	Renton	

* Hobart Landfill is scheduled to close in 1994

4.1.2 Revenues See Table 4.1.2

4.2 GRANTS

4.2.1 Grant Detailed Information

<u>Name</u>	<u>Provider</u>	<u>Amount</u>	<u>Year</u>	<u>Purpose</u>
Coordinated Prevention (CPG)	Ecology	\$ 2,000,000	92-93	Enumclaw landfill closure (\$500k); WR/R programs
Food Waste	Ecology	302,000	92-94	Testing of collection & processing methods for food waste
Waste-Not-Washington	Ecology	1,035,000	92-95	To provide WR/R services to Snoqualmie Valley, Skykomish, Issaquah & Snoqualmie Pass
City Optional	King County	994,000	92-95	Non-residential technical assistance
WR/R	King County	3,000,000	92-95	Start-up costs for commercial, multifamily & yard waste collection programs
TOTAL:		\$ 7,331,000		

4.3 BONDS

4.3.1 Bond Summary Information

<u>Year</u>	<u>Type</u>	<u>Life</u>	<u>Value</u>	<u>Purpose *</u>
1987	LTGO	20	\$42,000,000	Cedar Hills mitigation
1989	LTGO	20	\$16,900,000	Enumclaw Transfer Station
1992	LTGO	20	\$13,900,000	Customer service improvements, transfer station upgrades/replacements
1995	LTGO	20	\$30,000,000	New facilities (N.E. Lake Washington and new Auburn Transfer Stations)

* for detailed bond information see Table 4.3

4.4 RATES Please refer to Volume I, Chapter IV

4.5 OTHER FUNDING MECHANISMS See Table 4.5

4.6 FUNDING MECHANISM SUMMARY See Table 4.6.1

Table 4.1.2 Revenue Forecast by Facility

	1992				1994				1997			
	Tonnage	Revenue (millions)	Tip Fee /Ton	Avg. Load Charge	Tonnage	Revenue (millions)	Tip Fee /Ton	Avg. Load Charge	Tonnage	Revenue (millions)	Tip Fee /Ton	Avg. Load Charge
General Use Facilities												
Transfer & Drop Box Stations												
Factoria	139,000	9.174	68	73.41	118,000	7.882	68	73.41	110,000	8.335	78.05	78.85
Houghton	178,000	11.748	68	81.23	153,000	10.111	68	81.23	148,000	11.233	78.05	80.24
Renton	60,000	3.980	68	59.63	48,000	3.155	68	59.63	43,000	3.232	78.05	61.09
Algona	127,000	8.382	68	78.53	107,000	7.088	68	78.53	102,000	7.757	78.05	83.75
Bow Lake	173,000	11.418	68	74.80	144,000	9.517	68	74.80	135,000	10.267	78.05	80.89
First NE	89,000	5.874	68	41.82	71,000	4.886	68	41.82	64,000	4.867	78.05	43.23
Cedar Falls Drop Box	3,000	.198	68	13.38	3,000	.185	68	13.38	3,000	.190	78.05	13.75
Enumclaw					10,000	.688	68	30.83	9,000	.715	78.05	31.82
Hobart					22,000	1.478	68	18.53	22,000	1.835	78.05	20.50
1	769,000	50.754			678,000	44.580			634,000	48.231		
Rural Landfills												
Enumclaw	8,100	.404	68	30.63	closed				closed			
Vashon	7,100	.472	68	21.84	4,400	.290	68	21.84	4,200	.319	78.05	24.13
Hobart	10,400	.885	68	18.53	closed				closed			
2	23,700	1.581			4,400	.290			4,200	.319		
3	Total Gen. Use Facilities Refuse	782,800	52.327	68	680,400	44.880	68		638,200	48.550	78.05	
4	Total Yard Waste	1,800	.103	58	2,800	.162	58		4,200	.270	84.31	
5	Total General Use Facilities	784,600	52.430		683,200	45.042			642,400	48.820		
Cedar Hills												
6	Total Regional Direct	118,300	5.132	43	575.70	4.700	43	575.70	102,700	4.886	47.67	599.71
	Special Waste	5,600	.558	100	787.59	.590	100	787.59	6,400	.710	110.87	923.71
	Commercial	15,700	.676	43	362.80	.555	43	362.80	12,100	.577	47.67	377.29
7		140,700	6.367		128,100	5.845			121,200	6.183		
8	Total Cedar Hills	908,800	57.121		804,100	50.435			755,200	54.414		
9	Grand Total Refuse Disposed	933,500	63.828		808,500	50.725			759,400	54.733		
10	Grand Total - System	935,300	63.828		811,300	50.887			783,800	55.003		

Row 8 = row 7 + row 1; row 9 = row 3 + row 7; row 10 = row 9 + row 4

Table 4.3 Six-year CIP Plan

Project No.	Project Description	Pre-program	Revised							1993-98 Total Budget	Estimated Project Cost
			1992 Budget	1993 Budget	1994 Budget	1995 Budget	1996 Budget	1997 Budget	1998 Budget		
Fund 3030 SW Construction 1987											
013093	CH Leachate Head Reductio	CH	599,081								3,598,240
013095	CH Active Gas Collection	CH	1,088,862								21,847,843
013097	CH Retention/Detention	CH	431,285								1,100,005
013098	CH Maple Valley Force Main	CH	280,157								3,945,680
013108	CH Pump Station I Const	CH	84,862								1,588,082
			<u>2,484,227</u>								<u>31,877,850</u>
003114	Cedar Falls Landfill Closure	RLF	42,280								1,222,778
003115	Enumclaw Landfill Closure	RLF									2,245,567
003118	Hobart Landfill Closure	RLF									8,408,594
003117	Vashon Landfill Closure	RLF	(55)								4,458,998
			<u>42,225</u>								<u>18,338,935</u>
013100	T/S Facility Upgrade	TS	1,453,408								2,572,702
010728	Solid Waste Const-1987	ZZZ	(823,343)								(247,809)
Subtotal Fund 3030			3,368,515								50,539,478
Fund 3140 SW Construction 1989											
003125	CH Water Supply	CH	1,488,522								2,308,021
003126	CH Pretreatment Facility	CH									220,000
003157	CH Master Facility Plan	CH	250,000								250,000
003158	CH Expanded Aquifer Mon	CH	354,018								355,270
003159	CH Eastside Lchate Sys imp	CH	1,004,175	15,835					15,835		1,020,335
			<u>1,808,181</u>	<u>15,835</u>					<u>15,835</u>		<u>4,153,628</u>
003156	NPDES S/W Permits	NPDE	222,143								228,000
003119	Hobart T/S	TS	548,801								837,025
003120	Factoria T/S	TS	1,304,752								1,793,124
003122	South King County T/S	TS	32,982								33,000
003124	Enumclaw T/S	TS	9,805,353	280,762					280,762		11,795,760
003136	Houghton Queuing Improve	TS	699,030								707,000
003137	Algona T/S Slope Remediat	TS	325,428								385,000
003144	Renton T/S Sewer Upgrade	TS	38,771								40,000
003148	Bow Lk T/S Water Main Rpl	TS	78,024								79,870
003148	Algona T/S Study	TS	40,529								82,900
			<u>480,752</u>	<u>280,762</u>					<u>280,762</u>		<u>15,743,679</u>
003128	Trnsfr to CX-BIC	ZZZ									51,888
003130	Transfer to Fund 3030	ZZZ	301,898								301,898
010722	SW Constr 1989 - Default	ZZZ	38,324								485,332
			<u>340,022</u>								<u>848,998</u>
Subtotal Fund 3140			18,307,548	278,597					278,597		20,872,301

Table 4.3 Six-year CIP Plan (Continued)

Project No.	Project Description	Program	Revised						1993-98 Total Budget	Estimated Project Cost	
			1992 Budget	1993 Budget	1994 Budget	1995 Budget	1996 Budget	1997 Budget			1998 Budget
Fund 3831 Environmental Reserve											
003180	Puyallup/Kit Corner	ALR	552,490	28,529					28,529	581,019	
003181	Houghton Aband LF Remed	ALR	552,490	28,529	30,050				59,579	811,069	
003182	Administration-Env Res	ALR	308,808	250,000	250,000	250,000	250,000	250,000	1,500,000	1,808,808	
003183	Bow Lake - Aband LF Rem	ALR					328,470	340,555	667,025	667,025	
Subtotal Fund 3831			1,411,588	307,058	280,050	250,000	250,000	578,470	590,555	2,254,133	3,685,719
Fund 3901 SW Construction 1992											
003143	NE Lake WA T/S	TS			380,000	3,420,000	10,081,000			13,881,000	13,881,000
003147	Household Haz Waste	TS									
003180	Hobart T/S	TS	901,000		5,771,104	8,450,270				12,221,374	13,122,374
003181	Factoria T/S	TS	7,552,000	1,774,808	15,993,000	4,068,300	15,000			21,848,808	28,400,908
003182	South King County T/S	TS	954,500		1,428,000	8,058,000	13,100,000			20,584,000	21,538,500
003184	1st NE Noise Barrier	TS		290,000							290,000
003185	Algona T/S / Fire Hydrant	TS	55,000								55,000
013088	Middle Snoqualmie T/S	TS					445,000	715,000	5,255,000	6,415,000	6,415,000
013089	Bow Lake Expansion - MFP	TS		222,000						222,000	222,000
013090	1st NE Expansion - MFP	TS		222,000						222,000	222,000
			9,752,500	2,218,808	23,572,104	19,992,570	23,841,000	715,000	5,255,000	75,384,280	85,146,780
003183	Repay Fnd 3140-Enum T/S	ZZZ		3,850,147						3,850,147	3,850,147
003191	Repay Fnd 3910 *	ZZZ									
003193	1% for Art/Fund 3901	ZZZ									
Subtotal Fund 3901			9,752,500	6,068,753	23,572,104	19,992,570	23,841,000	715,000	5,255,000	79,244,427	88,996,927
Fund 3910 Landfill Reserve											
003129	CH Area 2/3 Final Cover	CH	7,169,218								8,339,800
003138	CH Pretreatment Facility	CH	5,998,689								6,005,000
003140	CH-Area 5 Development	CH				1,228,535	5,903,142	5,903,142	5,903,142	18,935,861	18,935,861
003142	CH SW Main Hill Cover	CH	8,272,747								9,037,197
013103	CH Leachate Head Red - Ph	CH									
013105	CH Surface Water Control	CH									
013107	CH Site Dev Plan/EIS Reissu	CH									
013111	CH Maple Valley Hiway Wid	CH		863,680						863,680	863,680
013113	CH Area 4 Construction	CH	1,282,232								21,900,098
013114	CH Master Electr. Emergenc	CH		150,000						150,000	150,000
013132	CH-Area 5-Stormwater/Leac	CH				617,852	5,863,643	5,863,639		11,945,134	11,945,134
			22,722,864	1,013,660		1,844,387	11,566,785	11,566,781	5,903,142	31,894,755	77,076,950

Table 4.3 Six-year CIP Plan (Continued)

Project No.	Project Description	Pre-program	Revised							1993-98 Total Budget	Estimated Project Cost
			1992 Budget	1993 Budget	1994 Budget	1995 Budget	1996 Budget	1997 Budget	1998 Budget		
003132	Vashon LF NAD	RLF									
003145	Vashon LF FC	RLF									
013115	Enumclaw LF Closure	RLF	2,745,815								2,988,738
013118	Hobart LF Closure	RLF	2,992,878	(1,028,042)	2,739,000					1,710,958	4,874,008
013117	Vashon LF Closure	RLF	335,874								408,853
018117	Vashon Site Dev Plan	RLF		50,000						50,000	50,000
017117	Vashon Leachate Storage/P	RLF		1,051,000						1,051,000	1,051,000
023118	Hobart Temp Cover SW Imp	RLF		220,000						220,000	220,000
			8,074,587	282,858						2,739,000	8,888,600
003102	Transfer to Landfill PC Fund	ZZZ	4,895,815	5,000,000	7,100,000					12,100,000	18,995,815
003192	Loan To Fund 3801 *	ZZZ									
010727	Landfill Reserve Default	ZZZ	237,221								8,808,780
			5,132,838	5,000,000	7,100,000					12,100,000	28,802,375
	Subtotal Fund 3910		33,930,287	8,308,818	8,838,000	1,844,387	11,588,785	11,588,781	5,903,142	47,028,713	113,587,925
	GRAND TOTAL		84,768,418	12,858,028	33,891,154	22,088,957	35,457,785	12,858,251	11,748,897	128,801,870	277,742,350

Note: Does not reflect activity in projects closed out in 1992

* interim financing amount and timing t.b.d.

Table 4.5 Other Funding Mechanisms (in \$ millions)

	1992	1994	1997
Beginning Fund Balance	10.164	6.835	
Prior Year Carryover	2.905		
Tip Fee Revenue (Table 4.1.2)	63.929	50.887	55.003
Health Dept. Charges		-.540	
	<u>76.998</u>	<u>57.182</u>	<u>55.003</u>
Other Revenue			
Moderate Risk Waste	2.222	2.380	
Interest	.610	.600	
Grants	.066	.754	
WR/R Revenues	.321	.300	
E/RR	3.000		
FEMA Reimbursement		.300	
Insurance Refund	.110		
	<u>6.329</u>	<u>4.334</u>	<u>11.846</u>
Total Revenue	<u>83.326</u>	<u>61.516</u>	<u>66.849</u>
Total Expenditures (Table 3.3)	<u>60.599</u>	<u>55.886</u>	<u>61.961</u>
Ending Fund Balance	<u>22.727</u>	<u>5.630</u>	<u>4.888</u>
Less: 45-day Cash Reserve Requirement	<u>4.780</u>	<u>4.721</u>	<u>4.888</u>
Undesignated Fund Balance	<u>17.947</u>	<u>.910</u>	<u>.000</u>

Table 4.6.1 Funding Mechanism (in Percent)

Component	Tip Fee	Grant	Bond	Landfill Reserve	Env. Reserve	CERP	Collection Rates	Surcharges	General Fund	Total
Waste Reduction										
1992	60.74	6.05					26.07	5.93	1.21	100.00
1994	47.17	19.96					26.07	5.57	1.21	100.00
1997	61.84	5.79					26.07	5.08	1.21	100.00
Waste Recycling										
1992	64.35	6.72					22.71	5.17	1.06	100.00
1994	53.99	17.39					22.71	4.85	1.06	100.00
1997	66.76	5.05					22.71	4.42	1.06	100.00
Collection										
1992							13.66	86.34		100.00
1994							13.66	86.34		100.00
1997							13.66	86.34		100.00
ER&I										
1992										
1994										
1997										
Transfer										
1992	28.15		66.83			5.02				100.00
1994	35.89		64.11							100.00
1997	82.77		4.74			12.48				100.00
Land Disposal										
1992	13.74		9.11	70.31	2.93	3.92				100.00
1994	42.91	2.69		52.89	1.51					100.00
1997	31.94			56.13	2.80	9.13				100.00
Administration										
1992	95.13	0.81					3.63	0.27	0.17	100.00
1994	94.51	0.91					4.09	0.30	0.19	100.00
1997	94.24	0.95					4.29	0.32	0.20	100.00
Total										
1992	58.10	0.69	31.52			4.03	3.07	2.46	0.13	100.00
1994	64.37	2.13	27.01				3.53	2.81	0.15	100.00
1997	83.32	0.99	1.04			5.50	5.00	3.93	0.21	100.00