

Appendix C – Tonnage and Vehicle Forecast Methodology

Forecasting Solid Waste Disposal

To forecast the future amount of solid waste to be disposed the County applies an econometric model that includes the following variables, which explain the change over time of the MSW disposed:

- Number of people living in the service area
- Number of jobs and structure of the job market (split of service sector jobs vs. manufacturing jobs)
- Household size in persons per household
- Per capita income (in real terms)
- Disposal fees (inflation adjusted)
- Ban on CDL

The geographic boundary is King County without Seattle and Milton, but including all of Bothell (part Snohomish County).

The data sources for data covering the forecasting periods are: For population, household and employment: Puget Sound Regional Council (PSRC – “small area forecast”). Those numbers for the forecast period were developed by PSRC in close cooperation with the counties and cities.

For economic variables we use data provided by Dick Conway and Associates, Seattle.

In a first step we develop the so called “baseline scenario”. This scenario takes into consideration current policies and new policies as far as impacts are known and the implementation schedules are known.

The econometric model (based on a regression equation) uses information about the relationship between the variables mentioned above and the amount of garbage disposed. Based on the projections for population, employment, household size, real income and tip fees we estimate the future amount disposed for the forecasting period. The tonnage and transaction data (each transaction is recorded with date, time, type of garbage, fees and taxes paid, type of payment) of the past years is collected and maintained by the Solid Waste Division and are the most accurate number available for forecasting purposes. The disposal forecast comes with a 95% confidence interval. We use the mean value of the lower and upper range as the projected amount disposed.

The amount of tons *recycled* is provided by haulers (for the curbside recycling) and by a survey that the Washington State Department of Ecology (DOE) performs annually. Those numbers are estimates and fluctuate considerable from year to year. Consequently the amount of garbage *generated* is also only a estimate with a wider margin of error.

In a next step we include all known events that might impact the disposal amount, such as temporary transfer closures or changes in recycling programs etc. and estimate for short term purposes a budget tonnage forecast that is used to forecast short term financial forecast. Changes happen during the year as new information is available and the numbers are being updated (e.g. if a boom or a recession is stronger than expected, or unexpected events hit economic development).

For other planning purposes we develop and maintain a long term forecast (25 years). We use the same sources but expand the horizon out to 25 to years (depending on the information available).

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Attachment: Forecasted disposal and actual tons disposed

Attachment:

**Comp Plan 2001 Forecast and Actual Tons Disposed
New Forecast for 2005 - 2030 (as September 2005)**

Year	Comp Plan 2001 forecast	Actual	Difference in %	New 2005 forecast
2001	963,000	936,500	-2.8%	
2002	978,000	939,500	-4.1%	
2003	990,000	978,836	-1.1%	
2004	1,000,000	1,006,163	0.6%	
2005	1,007,000	990,000	-1.7%	990,000
2006	1,014,000			976,700
2007	1,029,000			1,020,800
2008	1,048,000			1,050,800
2009	1,068,000			1,080,800
2010	1,092,000			1,115,200
2011	1,100,000			1,133,800
2012	1,101,000			1,160,200
2013	1,113,000			1,178,800
2014	1,117,000			1,210,200
2015	1,122,000			1,242,100
2016	1,133,000			1,264,900
2017	1,146,000			1,295,700
2018	1,159,000			1,327,700
2019	1,176,000			1,353,800
2020	1,194,000			1,388,500
2021				1,402,500
2022				1,436,400
2023				1,442,300
2024				1,478,500
2025				1,515,900
2026				1,524,400
2027				1,563,400
2028				1,588,100
2029				1,628,700
2030				1,670,300