MUNICIPAL SOLID WASTE STREAM ANALYSIS: DAVISON AND HANSON COUNTIES, SOUTH DAKOTA

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ABSTRACT

Solid waste management in the United States is in a process of change. Today's environmentally conscious and highly regulated environment has given solid waste management a position of unprecedented importance. Strict federal and state solid waste regulations have dramatically increased the cost of landfilling solid waste. In response to this economic reality, some states have moved towards alternative methods of solid waste management.

The state of South Dakota has implemented a regional approach to solid waste management. Pursuant to state legislation, the counties and municipalities of the state are to create regional waste management districts. The districts, as new governments, must manage and dispose of their solid waste, and meet future waste reduction goals.

Before a waste management district can develop an efficient waste management and reduction strategy, it must first know how much, and what kinds, of solid waste is produced within its borders. The planning technique used to estimate this kind of information is called a waste stream assessment. This study focusses on waste stream assessment. Its purpose is to estimate the generation and composition of municipal solid waste for the five communities of Davison and Hanson counties, South Dakota. To fulfill this purpose, a pair of theoretical models were used to estimate both residential and commercial wastes. The residential and commercial estimates were added to produce a total municipal

solid waste estimate for each of the five communities. In addition, a telephone survey of recyclable material collection centers was undertaken to determine how much municipal waste was being recycled in the two counties.

The products of the theoretical models and telephone survey will provide base data for future solid waste planning decisions within the study area. The study found that 9,063 tons of solid waste are produced annually by the five communities. 6,183 tons of the annual generation is residential waste, while the remaining 2,880 tons are commercial. Approximately 90 percent of the municipal solid waste is generated in the city of Mitchell. Other important findings include the following: the daily per capita municipal waste generation rate is 3.22 pounds; paper is the most common category of solid waste comprising 40 percent of the waste stream; over 17 percent of communities waste metal (mostly aluminum) is recycled; and, only 0.1 percent of the total municipal waste stream is recycled.