and (3) the regulatory flexibility analysis.

1. Universe of Carbamate Production Facilities and Waste Volumes

In order to estimate costs for the EIA, it was first necessary to estimate total annual generation of carbamate production wastes. The domestic carbamate production industry is composed of 64 chemical products produced by 20 manufacturers at 24 facilities. Total annual waste quantities generated by these facilities were derived from a 1990 survey of the carbamate production industry.

2. Method for Determining Cost and Economic Impacts

This section details EPA's approach for estimating the incremental compliance cost and the economic impacts attributable to the listing of carbamate production waste. Because the carbamate production industry is relatively small (only 20 manufacturers at 24 facilities in 1990), EPA was able to collect facility-specific information and estimate incremental costs at the waste stream level. The information used in this analysis was collected in 1990 under the authority of a RCRA section 3007 survey; the survey included engineering site visits, and sampling and analysis of waste streams.

Approach to the Cost Analysis

EPA's approach to the cost analysis for this rule was to compare the cost of current management practices, as reported in the 3007 survey of carbamate production facilities, with the projected cost of management to comply with the RCRA Subtitle C hazardous waste program. This difference in cost, when annualized, ³ represents the incremental annual compliance cost attributable to the rule.

Baseline or Current Management Scenario

Relying on survey responses and engineering site visits, EPA was able to determine the current (i.e., 1990) management practices for the handling and disposal of carbamate production wastes. Current management practices varied among facilities and waste streams, and included such practices as off-site incineration, deep-well disposal, on-site destruction in boilers, and offsite landfilling. These current management practices at each facility represent the baseline scenario of the analysis.

As part of the 3007 survey, EPA asked each facility to identify current costs for the management of carbamate production wastes. For this analysis, EPA has relied on and has not changed the industry's own waste-specific estimates concerning the cost of current management. EPA realizes that future events such as waste minimization efforts or increased demand for carbamate products may change waste generation volumes and, thus, future waste management costs.

Post-Regulatory Management Scenarios

In predicting how industry would comply with the listing of carbamate production waste as RCRA hazardous waste, EPA developed nine postregulatory management scenarios, described below, that represent reasonable management reactions on the part of industry. EPA developed these post-regulatory management categories based on its knowledge of current waste management and the physical and chemical properties of the waste.

Unit costs for Subtitle C treatment (i.e., incineration) or land disposal, waste transportation between facilities, permit modifications, maintenance of contingency plans, manifesting and biannual reporting system (BRS) reporting are contained in Table 4 below. The total volume of waste affected by each waste management category described above are presented below in Table 5.

TABLE 4.—POST-REGULATORY WASTE MANAGEMENT UNIT COST ESTIMATES

	Cost (1992 \$)	Source
Commercial hazardous waste incineration Commercial hazardous waste landfill Hazardous waste transportation	\$1,600 per metric ton \$200 per metric ton \$0.27 per metric ton per mile if under 200 miles. \$0.24 per metric ton per mile if over 200 miles.	SAIC/ICF analysis.
Class II on-site hazardous waste landfill permit modification ⁴ Class II on-site hazardous waste incinerator permit modification ⁵ Other class II on-site hazardous waste treatment permit modification Segregation of industrial Subtitle D waste Maintenance of contingency plan Manifesting ⁵ BRS reporting	\$80,102 \$40,585 \$7,476 \$10 per metric ton \$200 per facility per year	ICF analysis. ICF analysis. EPA estimate. Source a. Sources b, c.

⁴Permit modification costs were assumed to be incurred no more than once for each type of treatment at each facility. These costs were annualized over 20 years using a discount rate of 7 percent.

⁵Manifest completion costs were assumed to be incurred once a year for each waste shipped off site. One shipment was assumed to equal one truckload of 20 tons.

Sources: a. "Estimating Costs for the Economic Benefits of RCRA Non-compliance," Draft Report prepared by DPRA for Office of Waste Programs Enforcement, U.S. Environmental Protection Agency, May 1993.

b. ICF No. 801 "Requirements for Generators, Transporters, and Waste Management Facilities Under the RCRA Hazardous Waste Manifest System," June 15, 1992.

c. Employment and Earnings, Bureau of Labor Statistics, March 1993.

d. "1991 Hazardous Waste Report," U.S. Environmental Protection Agency.

a 20 year period.

³Costs are discounted at a rate of 7 percent over