

A. Costs of the Final Rule

1. Method for Estimating the Costs of This Rule

For the purpose of estimating the total costs and economic impacts CAFOs will bear in complying with this rule, EPA estimated costs associated with four broad cost components: nutrient management planning, facility upgrades, land application, and technologies for balancing on-farm nutrients. Nutrient management planning costs include manure and soil testing, record-keeping, and plan development. Facility upgrades reflect costs for additional or improved manure storage, mortality handling, runoff controls, reduction of fresh water use where appropriate, and additional farm management practices. Land application costs address agricultural application of nutrients, including hauling of excess manure off-site and adjusting for changes in commercial fertilizer needs, and reflect differences among operations based on cropland availability for manure application.

EPA evaluated compliance costs using a representative facility approach based on approximately 1,600 farm level cost models to depict conditions and to evaluate compliance costs for select representative CAFOs. The major factors used to differentiate individual model CAFOs include the commodity sector, the farm production region, and the facility size (based on herd or flock size or the number of animals on-site). EPA's model CAFOs primarily reflect the major animal sector groups, including beef cattle, dairy, hog, broiler, turkey, and egg laying operations. Practices at other subsector operations are also reflected in the cost models, such as replacement heifer operations, veal operations, flushed-cage layers, and hog grow-finish and farrow-finish facilities.

Another key distinguishing factor incorporated into EPA's cost models is information on the availability of

cropland and pastureland for land application of manure nutrients. For this analysis, nitrogen and phosphorus rates of land application were evaluated for three categories of cropland availability: (1) CAFOs with sufficient cropland for all manure generated on-site; (2) CAFOs with some, but not enough, cropland to accommodate all of the manure produced at the facility; and (3) CAFOs with no cropland. EPA used USDA data to determine the number of CAFOs within each of these categories. This information takes into account which nutrient (nitrogen or phosphorus) is used as the basis to assess land application and nutrient management costs.

The data and information used to develop EPA's cost estimates were compiled with the assistance of USDA, in combination with other information collected by EPA from extensive literature searches, more than 100 farm site visits, and numerous consultations with industry, universities, and agricultural extension agencies. Additional detailed information on the data and assumptions used to develop EPA's cost estimates is provided in the *Technical Development Document*. Refer to the preamble for the proposed rule for a summary of EPA's data collection activities and the sources of data that the Agency used to estimate compliance costs (66 FR 3079–3080).

For the purpose of estimating costs and financial effects to Medium CAFOs, EPA assumes that costs that will be incurred by those sized operations to comply with BPJ-based limitations under the revised NPDES regulations are similar to the estimated costs that would be incurred if Medium CAFOs had to comply with the ELG.

2. Estimated Annual Costs of the Final CAFO Regulations

a. *Costs borne by CAFOs.* Table 8.1 summarizes the total annualized compliance costs to CAFOs. The table

shows these costs broken out by sector and broad facility size category. As shown in the table, EPA estimates the total cost of the final rule to CAFOs at \$326 million annually. (Total monetized estimated social costs of the rule include an additional \$9 million to federal and State governments.) Roughly one-half of this cost is incurred by the dairy sector, with another roughly 30 percent incurred within the cattle sectors (including the beef, veal, and heifer sectors).

Of this total, EPA estimates that Large CAFOs will incur costs of \$283 million per year. Total annualized costs to facilities defined as Medium CAFOs are estimated at \$39 million annually. Table 8.1 also shows estimated total cost to Small and Medium AFOs that might incur costs if designated as CAFOs, which EPA estimates at about \$4 million annually. More information on these costs and how they were calculated is provided in the *Economic Analysis*.

EPA has estimated the cost of land application based on nitrogen-based application rates, except in those instances where EPA believes that phosphorus-based rates are likely to be appropriate. The final rule specifies that the determination of application rates is to be based on the technical standards established by the Director and EPA expects that these standards will require phosphorus-based application, where appropriate. The rule also provides for these standards to include appropriate flexibilities in the use of phosphorus-based rates, such as multi-year phosphorus application, but the potential costs savings resulting from these flexibilities are not reflected in the analysis. As a result, the cost and economic impacts of this rule may have been overestimated.

TABLE 8.1.—ANNUAL PRE-TAX COST OF THE RULE, \$2001

Sector	No. operations		Aggregate incremental costs			
	Large CAFOs	Medium CAFOs	Total	Large CAFOs	Medium CAFOs	Designated CAFOs
	(number)		(\$2001, millions, pre-tax)			
Fed Cattle	1,766	174	\$88.2	\$85.8	\$1.9	\$0.5
Veal	12	230	0.0	<0.1	<0.1	0.0
Heifer	242	7	6.3	3.8	2.4	0.1
Dairy	1,450	1,949	151.1	128.2	22.0	0.9
Hogs	3,924	1,485	34.8	24.9	9.5	0.4
Broilers	1,632	520	20.5	16.8	2.4	1.3
Layers: Dry ¹	729	26	7.5	7.2	0.1	0.2
Layers: Wet ¹	383	24	8.9	8.4	0.5	<0.1
Turkeys	388	37	8.7	8.1	0.3	0.3