

In addition to using distributions to develop unit cost estimates, the Agency conducted sensitivity analyses to further explore uncertainty regarding system compliance estimates. The first two sensitivity analyses were prepared to evaluate the possibility that the IDSE monitoring requirement will result in more systems needing to install treatment beyond what is predicted in the current cost model (see chapter 7 of

the EA, USEPA 2003i, for details of this analysis). Table VII-9 lists the high-end estimates of the number of systems adding treatment in IDSE sensitivity analyses No. 1 and No. 2. For both IDSE sensitivity analyses, only small additional impacts were assumed possible for systems serving 10,000 people or fewer because such systems generally have much less complicated distribution systems than larger

systems. EPA estimated that the mean annualized costs at the 3% discount rate could be as high as \$77.5 million (IDSE Sensitivity Analysis No. 1) or \$108.8 million (IDSE Sensitivity Analysis No. 2) versus the Preferred Alternative analysis estimate of \$57.4 million. At the 7% discount rate these estimates would respectively correspond to \$86.1 million, \$120.7 million, and \$63.3 million.

Table VII-9 Sensitivity Analysis on Potential Treatment Impacts of IDSE From Stage 1 to Stage 2 (Community Water Systems)

	Percent Adding Treatment		
	Preferred Alternative	IDSE No. 1	IDSE No. 2
SW ≤ 10,000	3.7%	4.6%	4.8%
SW > 10,000	5.8%	9.9%	15.1%
GW ≤ 10,000	2.7%	2.8%	2.9%
GW > 10,000	2.1%	3.2%	3.6%

Source: Economic Analysis, Exhibit 7.1 Chapter 7 (USEPA 2003i).

EPA believes that the percentage of systems estimated to add treatment under IDSE sensitivity analyses No. 1 and No. 2 are overestimates and that the estimate for the Preferred Alternative is likely to already capture the influence of the IDSE because of the conservative assumptions used in the analysis. For example, the compliance forecast analysis assumes that systems will try to meet the LRAA MCLs with a 20% margin of safety. Systems complying by switching to chloramines may choose to meet the new MCLs with a much smaller margin of safety since chloramines dampen the variability of DBP concentrations within the distribution system. Furthermore, EPA believes that the number of ground water and small surface water systems adding chloramines or changing technology in the baseline analysis may be overestimated because their monitoring requirements are expected to be very similar from Stage 1 to Stage 2. The Stage 1 DBPR required only one compliance monitoring location (at the point of maximum residence time) for producing surface water systems serving between 500 and 10,000 people and for all ground water systems. The Stage 2 DBPR requires that these systems add an additional site if they determine that their high TTHM and high HAA5 concentrations do not occur at the same location. If systems maintain a single monitoring location for the Stage 2

DBPR, as many are expected to do, calculation of compliance will produce the same results for the running annual average (RAA) and locational running annual average (LRAA) measure, implying that they are not likely to add treatment for the Stage 2 DBPR if they comply with the Stage 1 DBPR.

EPA conducted a third sensitivity analysis to evaluate the possibility that small systems will continue to monitor at one point in their distribution system. In this sensitivity analysis, EPA assumed that no surface water plants serving fewer than 10,000 people and no ground water plants would add treatment to meet Stage 2 DBPR requirements (*i.e.*, only costs are associated for large surface water systems). Under this analysis, the average cost figures are reduced dramatically from \$57.4 million or \$63.3 million to \$22.9 million or \$25.7 million using a 3 percent or 7 percent discount rate, respectively, for the Preferred Regulatory Alternative. Chapter 7 of the Economic Analysis (USEPA 2003i) contains a detailed explanation of the aforementioned sensitivity analysis.

3. State Costs

The Agency estimates that the States and primacy agencies will incur an annualized present value cost of \$1.1 million to \$1.5 million (using a three percent and seven percent discount rate, respectively). In order to estimate the

cost impact to States, EPA considered initial implementation costs, costs for assisting systems in evaluating IDSE information, and for annual rule implementation activities. EPA considered the incremental change in activities that result from the Stage 2 DBPR. For example, States may have to update their databases to track the new Stage 2 DBPR monitoring strategy but could modify the system they developed for the Stage 1 DBPR. EPA accounted for the cost of a Stage 1 DBPR database in the Stage 1 Regulatory Impact Analysis (USEPA 1998f). State costs are not expected to change dramatically between alternatives.

4. Non-quantifiable

EPA has identified and quantified costs that it believes are likely to be significant. In some instances, EPA did not include a potential cost element because it believes the effects are relatively minor and difficult to estimate. For example, the Stage 2 DBPR may be the determining factor in the decision by some small water systems to merge with neighboring systems. Such changes have both costs (legal fees and connecting infrastructure) and benefits (economies of scale). Likewise, costs for procuring a new source of water would have costs for new infrastructure but could result in lower treatment costs.

Also, EPA was unable to quantify several distribution system-related