

**REVENUE ESTIMATES FOR SMALL ENTITIES POTENTIALLY
AFFECTED BY NATIONAL PRIMARY DRINKING WATER
REGULATIONS FOR LEAD AND COPPER**

TECHNICAL MEMORANDUM

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The Office of Advocacy, an independent office within the U.S. Small Business Administration, has primary responsibility for government-wide oversight of the Regulatory Flexibility Act of 1980 (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA). The principal goal of the RFA is to identify, and, if possible, lessen the burdens Federal regulations place on small entities. The Office of Advocacy sponsored this report under contract SBAHQ-03C0020. This report was developed under a contract with the Small Business Administration, Office of Advocacy, and contains information and analysis that was reviewed and edited by officials of the Office of Advocacy. However, the final conclusions of the report do not necessarily reflect the views of the Office of Advocacy.

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I. INTRODUCTION AND PURPOSE

The U.S. Environmental Protection Agency (EPA) is proposing targeted regulatory changes to the National Primary Drinking Water Regulations (NPDWR) for lead and copper. The EPA states that the proposal will strengthen the implementation of the Lead and Copper Rule (LCR) in the following areas: monitoring, treatment processes, customer awareness, and lead service line replacement. The EPA expects these changes to provide more effective protection of public health by reducing exposure to lead in drinking water. The proposed changes do not affect the basic requirements of the LCR, the lead or copper maximum contaminant level goals, or action levels.

The U.S. Small Business Administration's Office of Advocacy (Advocacy) requested that Pechan evaluate the analysis used to support EPA's "no significant impact" regulatory flexibility act (RFA) certification for the proposed LCR revisions. In particular, Advocacy directed Pechan to assist in reviewing the basis for EPA's small water system revenue estimates used in the RFA certification. Specifically, Advocacy notes that EPA uses one size category for small water systems serving 10,000 users or less without subcategorizing small water systems into smaller subcategories. This is contrary to Advocacy guidance, and contrary to EPA practice in performing other economic regulatory analyses. The following summarizes the revenue information EPA used in the RFA certification for the proposed LCR, and describes the revenue estimates that EPA should use in performing the RFA analysis for this and potential future drinking water regulations.

II. REVIEW OF PAST SMALL DRINKING WATER SYSTEM REVENUE ESTIMATES

In supporting its certification of "no significant impact" for the proposed LCR, EPA used an estimated small drinking water system revenue estimate of \$2.981 million. According to EPA, the derivation for this estimate was provided in the economic analysis for the Stage II Disinfection Byproducts Rule (EPA, 2005a). As indicated by Table 1, this value was derived as the weighted average of individual small entity revenue estimates for small government entities, small businesses, and small organizations.

Table 1. Stage II DBPR Small Entity Revenue Estimates

Type of Entity	Number of Small Systems	Percent of Small Systems	Average Annual System Revenues (\$)
Small Governments	1,827	43%	\$2,649,186
Small Businesses	1,584	37%	\$2,555,888
Small Organizations	838	20%	\$4,750,838
All Small Entities	4,250	100%	\$2,981,331

Source: Exhibit 8-1 of EPA, 2005a.

The economic analysis for the Stage II Disinfection Byproducts Rule (DBPR) provides limited information on how EPA developed each of the Table 1 individual small entity revenue

estimates. Because of the lack of information, Pechan was unable to understand how EPA derived the small business and small organization estimates.

The EPA clearly identifies the use of two data sources in developing their small government revenue estimate: Bureau of the Census' *1992 Census of Governments* and the Bureau of Economic Analysis 1992-2003 price index for government consumption expenditures and gross investment (DOC, 1997 and DOC, 2006). Pechan compiled these data in an attempt to replicate EPA's \$2.65 million revenue estimate. From these data, Pechan calculated a small government entity revenue estimate of \$1.89 million (\$1.404 million estimated from *1992 Census of Governments* data multiplied by 1992-2003 BEA price index of 1.349).¹ Because EPA did not provide Advocacy with the actual data/calculations that were used to derive the \$2.65 million estimate, Pechan is unable to identify the reason for the discrepancy.²

The EPA had considered developing small water system revenue estimates from data developed in the 2000 Community Water System Survey (CWSS). After review of the available data, however, EPA concluded that the CWSS data were an inappropriate measure of small system revenues for the following three reasons:

- 1) Publicly owned systems have other sources of revenue that are not included in the survey (e.g., have access to the general fund of their municipality);
- 2) The survey does not capture revenues available to non-community water systems; and
- 3) A substantial proportion of water systems does not charge directly for water and/or did not report water-related revenue in the survey (e.g., 42 percent in the size category serving 25-100 people), and certain CWSS tables include revenue estimates of zero for these systems (Burneson, 2006).

As for the first comment, the CWSS asks that survey respondents include *all* sources of revenue, and specifically includes an entry for general fund revenues (e.g., from municipalities) for question 26C, which is used to develop revenue estimates reported in the 2000 CWSS report (EPA, 2002). EPA's second comment has merit if there is evidence that average revenues for non-community water systems are significantly different from average revenues for community water systems. However, EPA has not yet cited evidence indicating any average revenue distinction between these two system types. Finally, the 2000 CWSS report provides revenue estimates specific to water systems that only report positive revenue and expenses (Table 49). Therefore, Pechan believes that two of the three reasons that EPA has cited for not using the CWSS are without merit. Because non-community systems generally serve smaller populations

¹ The economic analysis for the Stage 2 DBPR does not mention a shortcoming of the *Census of Governments* data. Because this source does not provide North Central region townships revenue data by population size, these entities are not included in the calculation of average municipality/township revenues.

² It is possible that EPA's estimate is an average that includes other small government entity revenues (counties, special districts), but there is no mention of any government revenue data source other than the municipality/township governments volume of the *Census of Governments*.

than community systems,³ and systems serving smaller populations report lower revenues, the third reason EPA provided for not using the CWSS implies that the initial estimate may tend to overstate small system revenues.

III. PECHAN EVALUATION OF SMALL DRINKING WATER SYSTEM REVENUES

The following describes Pechan's evaluation of two related issues: (1) are total *small drinking water system* revenues (the CWSS-based revenue estimates) or total *small government entity* revenues (the *Census of Governments*-based revenue estimates) the more appropriate value to use in performing small entity impact analyses of drinking water regulations; and (2) what specific revenue estimates should be used in the LCR small entity impact analysis?

A. ALTERNATIVE REVENUE MEASURES FOR SMALL GOVERNMENT IMPACT ANALYSES

There is an ongoing interagency discussion about whether impact analyses of drinking water system regulations should be performed using total government entity revenues or total government revenues accruing to water systems. Ultimately, it is a matter of government policy to decide which revenue estimates are the more appropriate values to use in estimating small government entity impacts such as those performed in support of the RFA. The following describes Pechan's consideration of this issue.

Since its enactment in 1980, the RFA has required Federal agencies to prepare regulatory flexibility analyses unless the agency certifies that the rule "will not, if promulgated, have a significant economic impact on a substantial number of small entities." Because the term "significant" is not defined in the RFA, agencies have some discretion in determining what to consider significant. For regulations affecting small businesses, EPA has developed non-binding guidance to determine the presence of a significant impact (EPA, 1999). This guidance suggests that any of the following annual compliance cost-to-sales results can be presumed to not have a significant economic impact on a substantial number of small entities:

- All affected entities have cost-to-sales ratios of less than 1 percent;
- Fewer than 100 small entities have cost-to-sales ratios of 1 percent or greater;
- 100 to 999 entities representing less than 20 percent of all affected small entities have cost-to-sales ratios of 1 percent or greater;
- fewer than 100 small entities have cost-to-sales ratios of 3 percent or greater.

The EPA guidance is silent on the specific sales data to use as the denominator in the calculations. Advocacy suggests that sales should represent the sales specific to the activity that would be regulated:

³ The latest year data indicate that 61 percent of small *community* water systems serve 500 people or less, while 85 percent of small *non-transient non-community* water systems serve 500 people or less (EPA, 2005b). (Note that the LCR does not apply to *transient non-community* water systems.)

For purposes of analyzing the impact of a regulation on a regulated entity, it is most appropriate to focus on the costs and revenues associated with that particular activity. In this case, one wants to measure the costs and revenues associated with water use. Otherwise, you cannot properly evaluate the true affect on the activity, because the entity can cross-subsidize the activity with revenues from other activities. For example, if a business has two separate lines of businesses and costs are imposed on the second line of business such that the profits from that line of business would be eliminated, that line of business would close. If you look only at the total revenues of that business, this impact would be lost. Stated in a different way, one needs to look at the costs and revenues of each business line separately to analyze how to manage the business...” (Bromberg, 2006).

In practice, however, it is clear that past EPA RFA analyses have utilized total revenues in calculating cost-to-sales ratios. If data are available to support a “business line” level analysis, then Pechan supports Advocacy’s viewpoint that the RFA analyst should use these data to evaluate the possibility that business line impacts will be significant (e.g., business line closures are likely). Unless the affected business line is an extremely small proportion of total business activity, Pechan asserts that significant business line impacts are indicative of RFA “significant impacts.” However, it is important to note that, because small businesses often consist of a single line of business, there may be no need to separately consider business line level impacts for many regulations. However, this is not likely to be the case when considering regulations that affect small government entities.

To evaluate the significance of government entity impacts, EPA’s RFA guidance suggests the use of analogous sales-to-revenue ratio analyses. Small government entities provide many diverse services besides providing water. User fees, which are used as a funding source by all small public water systems, serve to both control water consumption and to recover a municipality’s costs for providing water. These user fees also serve to avoid the need for additional tax revenue to cross-subsidize the water service. Data from the 2000 CWSS indicate that such cross-subsidization is relatively rare – less than 7 percent of small public water systems utilize general fund revenues to support their activities (actual values range from 1 percent of systems serving 100 people or less to 7.2 percent of systems serving 501 to 3,300 people).⁴ The CWSS revenue data already reflect the extent to which general fund revenues are currently used to support water services. Pechan asserts that total water system revenues should be used in performing small government impact analyses of drinking water regulations because the significance of these regulations is likely to be measured by municipalities, not based on their total revenues, but rather based on their revenues currently allocated to provide that service. Therefore, Pechan recommends that EPA perform cost-to-revenue analyses of potential drinking water regulations using total water system revenues rather than total government revenues.

It should also be noted that EPA’s own documentation for the CWSS suggests that one of the purposes of the CWSS is to provide revenue data to support RFA analyses:

⁴ General tax revenue is more generally used to fund other municipal functions (e.g., police protection).

The Regulatory Flexibility Act (RFA) and the newly authorized Small Business Regulatory Enforcement Fairness Act (SBREFA) require the Agency to demonstrate that SDWA regulations do not impose an unreasonable economic and financial burden on small businesses or governments. The analyses required by the RFA and SBREFA can be supported by many of the same CWS Survey data elements as the RIA and ICR analyses. The table on the opposite page compares RFA data requirements and CWS Survey data elements. The financial section of the CWS Survey database provides a number of critical data elements for input into EPA's small business impact analyses (EPA, 1997, at page 32).⁵

Not only do the EPA's stated reasons for replacing CWSS-based revenue estimates with *Census of Government* based estimates appear not to support making this switch, EPA has acknowledged that the CWSS was designed in part to develop data to support RFA analyses. Pechan suggests that either EPA should provide a more valid rationale for the switch to total government entity revenues or else return to the use of CWSS-based revenue estimates. If such a rationale exists, then Pechan recommends that Advocacy request that EPA provide further detail on the derivation of their small entity revenue estimates. As noted earlier, the information provided is not sufficient to understand the data sources/methods that were used to develop the small business and small organization revenue estimates. In addition, Pechan's calculation of small government revenues indicates average revenues of \$1.89 million, while EPA's estimate is \$2.65 million. Given this large discrepancy, EPA should provide further detail on the calculations used to develop their higher estimate. Furthermore, if EPA continues to believe that the CWSS does not provide an accurate picture of revenues accruing to small water systems, then EPA should revise the CWSS to ensure that it provides valid data to support RFA analyses.

Until such time as EPA provides a more compelling rationale for replacing CWSS revenue data with *Census of Governments* revenue data, Pechan believes that the CWSS data are appropriate for the small entity impacts analysis of the LCR. In addition, the CWSS provides complete detail on revenues for individual subcategories within the overall small entity classification (systems serving 10,000 people or less) for which the Census data are incomplete. SBA guidance recommends performing RFA analyses for such subcategories because average small entity impact estimates can mask significant impacts for the smallest affected entities.⁶ It should be noted that EPA already conducts similar affordability analyses for subcategories of small water systems (e.g., the Stage 2 DBPR includes an affordability analysis for systems serving 500 or fewer people, systems serving 501 to 3,300 people, and systems serving 3,301 to 10,000 people). Interestingly, EPA appears to acknowledge the desirability of performing small entity

⁵ The table that is referred to in this paragraph identifies revenue questions from the CWSS as supporting RFA analyses.

⁶ Recent SBA guidance on complying with the RFA/SBREFA recommends that government agencies divide the affected total small entity population into smaller size categories: "to meet the basic Small Business Regulatory Enforcement Fairness Act (SBREFA) goal, analysts will routinely want to economically segment industrial sectors into several appropriate size categories smaller than the Small Business Act section 3 definition. Only by so doing will the analyst accurately identify and analyze those entities covered by the RFA... Agencies should identify and examine various economically similar small regulated entities so that they will have a baseline from which to determine whether a significant regulatory cost will have an impact on a substantial number of small entities." ("A Guide for Government Agencies, How to Comply with the Regulatory Flexibility Act, Implementing the President's Small Business Agenda and Executive Order 13272," May 2003, at pg. 15.)

impact analyses for such subcategories because the small entity impacts section of the economic analysis for the Stage II DBPR states that “data were not available to differentiate revenue for small entities by system sizes...” (EPA, 2005a, at page 8-5).⁷

B. RECOMMENDATIONS FOR REVENUE ESTIMATES FOR LCR SMALL ENTITY IMPACT ANALYSES

For the reasons noted in the previous section, Pechan computed revenue estimates for the LCR small entity impact analysis using CWSS data. For the 2000 CWSS, data are reported for small public and small private water systems that serve:

- 100 people or less;
- 101 to 500 people;
- 501 to 3,000 people; and
- 3,001 to 10,000 people.

Table 2 reports the mean and median small entity *public* water system revenues by population served; similar data are reported in Table 3 for small entity *private* water system revenues.⁸ Note that the overall small entity average revenues are much lower for private water systems than public water systems because a significantly greater proportion of small private water systems are classified in the smallest size categories. Also note the large difference between Pechan’s total small government revenue estimate, which is based on the *Census of Governments* data (\$1.89 million) and Pechan’s small public water system revenue estimate, which is based on the CWSS (\$259,000).

Table 2. 2000 CWSS Revenue Estimates for Small *Public* Water Systems

Population Served	Number of Water Systems	Mean (\$000s)	Median (\$000s)
Less than 100	734	18	10
101 to 500	5,752	35	26
501 to 3,000	11,282	191	134
3,001 to 10,000	4,314	778	653
10,000 or less*	22,082	259	203

*weighted by proportion of number of public systems in each size category

⁷ While this statement is partially correct with respect to the *Census of Governments* revenue data, it is not true for the 2000 CWSS data. For the *Census of Governments*, while municipal data are not reported by subcategory, separate revenue data are reported for Northeast Townships serving populations of: (1) less than 2,500 people; (2) between 2,500 and 4,999 people; and (3) 5,000 to 9,999 people. These data indicate, for example, that Northeast Townships serving 2,500 people have average total revenues that are about 35 percent of the average total revenues of all townships serving less than 10,000 people.

⁸ In response to EPA’s concern that the RFA analysis should reflect average revenues that exclude revenues for water systems that don’t charge users for water service, the estimates in these tables only reflect systems reporting positive revenues.

Table 3. 2000 CWSS Revenue Estimates for Small *Private* Water Systems⁹

Population Served	Number of Water Systems	Mean (\$000s)	Median (\$000s)
Less than 100	11,924	10	2
101 to 500	10,709	37	17
501 to 3,000	2,735	191	194
3,001 to 10,000	738	850	633
<i>10,000 or less*</i>	26,106	64	46

*weighted by proportion of number of private systems in each size category

Pechan suggests that the most accurate assessment of whether the LCR will have significant economic impacts on a substantial number of small entities would involve comparisons of each subcategory's revenue estimate with each subcategory's LCR compliance cost estimate. Although it is not clear from the limited LCR cost information provided to Pechan, it appears that the cost estimates used in the small entity impact analyses are meant to reflect average (mean) costs. If this is the case, then Pechan recommends that the mean revenue estimates be used in performing the small entity impact analyses. If separate small water system cost estimates can not be developed by individual size category, or for public versus private water systems, then Pechan recommends that EPA use the overall small water system mean revenue estimate (\$153,000) displayed in the last row of Table 4 (note that it may be necessary to adjust this estimate to reflect prices in the year represented by the cost data).¹⁰

Table 4. 2000 CWSS Revenue Estimates for All Small Water Systems

Population Served	Number of Water Systems	Mean (\$000s)	Median (\$000s)
Less than 100	12,658	10	2
101 to 500	16,461	36	20
501 to 3,000	14,017	191	144
3,001 to 10,000	5,052	786	648
<i>10,000 or less*</i>	48,188	153	117

*weighted by proportion of number of systems in each size category

⁹ The 2000 CWSS does not break out private systems into for-profit businesses and non-profit organizations.

¹⁰ It is not clear from the information provided to Pechan, but it appears that the LCR costs may reflect an average annual cost over the 2006-2008 period.

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