



Project Summary

Effect of Fees on Water Service Cutoffs and Payment Delinquencies

Frank A. Brimelow and Sneh B. Veena

A study was conducted to determine whether increased water and sewer user fees have generated increases in payment delinquencies and service cutoff rates and whether they have created other problems such as increased health hazards. Another objective was to examine the varied user-charge structures, billing procedures, and methods of debt collection in small utilities to identify procedures and policies that might minimize any negative impact of sudden fee increases on low-income customers. These data will be used to assess the impact of any rate increases that may occur as a result of small utilities raising rates to pay for new technology mandated under the Safe Drinking Water Act.

Three separate studies were undertaken. The first was a survey of management procedures and policies in 30 utilities. Ten of these utilities were rural, 10 had service area populations between 10,000 and 50,000, and 10 were large metropolitan utilities. The second study consisted of a survey of selected low-income customers in these utility service areas to evaluate customer awareness and attitudes toward billing and debt collection techniques, to assess any possible health hazards connected with service cutoffs, and to prepare a socioeconomic profile of families likely to be adversely affected by sudden fee increases. Finally, monthly aggregate data from three utilities that had experienced fee increases were used to test the hypothesis that fee increases generate increased delinquency and cutoff rates. A similar technique was used on individual account

data for a given metropolitan utility to estimate price elasticities for three groupings of census tracts within the service area. Water supply was concluded to be very price inelastic and no relationship was demonstrated between rate increases and customer cutoffs.

This Project Summary was developed by EPA's Water Engineering Research Laboratory, Cincinnati, OH, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

Introduction

During the last decade, many small water and wastewater utilities in the southeastern United States have implemented large increases in water and sewer user fees to raise revenues for the installation of adequate control technology. In some instances, the monthly, bi-monthly, or quarterly bills of the average residential customer have doubled or even tripled in a relatively short period of 2 or 3 years. Concern has been expressed that the Safe Drinking Water Act will require small communities in particular to install relatively expensive technology to meet more stringent drinking water standards. To pay for this technology, many small utilities may have to raise rates substantially. The general concern is that sudden rate increases will make marginal customers unable to pay their bills and will subject them to cutoffs in service.

The principle thrust of this study is therefore to determine whether these

historical increases have caused increased delinquency rates and cutoffs that may in turn have produced significant public health and other problems for communities so affected. The study also examines the degree of hardship placed on certain classes of users—for example on senior citizens and others on fixed incomes, and on low-income families in general.

To operate effectively, every utility must, of course, recover adequate service-charge revenues. Yet wide variations exist in user charge structures, billing procedures, and debt collection policies, etc.—even between utilities that have approximately the same number of customers and similar service areas. The persons most directly concerned in practice with billing and collection have been public utility officials, whose orientation has naturally tended to be almost exclusively one of cost-effectiveness. However, some procedures and techniques are more likely to be cost-effective, to ensure adequate revenues, to place the least burden on low-income families, and to be advantageous from a public health and community standpoint. An important object of this study is therefore to examine the social and economic impacts of various types of user-charge structures, of billing and debt collection procedures, and of large increases in service charges.

This object has been met through three studies: A survey of utility personnel, a survey of utility customers, and a study of the impact of large user-charge increases on delinquency rates and water consumption in specific utilities. Each study is described in the following sections.

Survey of Utility Officials

After a preliminary survey of billing managers, utility engineering staff-members, and other utility personnel, a questionnaire was drawn up as a basis for interviewing utility officials. This instrument was further modified and refined through extended interviews with officials from utilities of widely differing operational methods and services areas.

Next, a package was mailed to the chief executive officer of each utility selected for study. This package contained:

1. A letter of transmittal,
2. A memorandum headed "Letter to the Director of Public Works" that

explained the purpose of the interview and asked for cooperation,

3. A copy of the questionnaire, and
4. A three-page "Guidesheet to Key Questions," which defined some of the terms used in the questionnaire.

Later an interview was set up with either the chief executive officer or with a designated representative. Often it was advantageous to interview two persons for shorter periods rather than to have a single long interview with one official. This was particularly true of the larger utilities. Several weeks later there usually followed a second, shorter interview to clear up obscure points or ambiguities. This second interview was often done through a telephone call.

The utilities were selected from a four-state area—South Carolina, North Carolina, Georgia, and Florida. In selecting the 30, a balance was maintained between urban and rural utilities:

1. Ten were metropolitan utilities serving areas with an estimated population above 50,000.
2. Ten were nonmetropolitan utilities serving areas with an estimated population of 10,000 to 50,000.
3. Ten were essentially rural.

Other criteria were also used in selecting utilities. For example, some were chosen because they were considered to be typical. Others were chosen because they were believed to possess special characteristics (e.g., they had developed innovations in billing or collection methods or their user charge structure was atypical).

The sampling technique was, as indicated, purposive. The utilities chosen did not represent a statistical cross-section of utilities in the four-state region, but they did exhibit an extensive range of institutional practices that made possible an in-depth, analytical study of utility operations and of how utility officials perceive the social impacts of their procedures. Much of this collected information was, of course, anecdotal.

Survey of Low-Income Families

Selected low-income families were studied in the service areas of the 30 utilities studied. The main object of the investigation was to consider the impact of utility charge structures, billing procedures, and debt collection techniques on low-income families and to prepare a socioeconomic profile of families likely to be adversely affected by fee increases.

The interview method of data collection was used. In an interview study, any of three interacting variables can affect the outcome of the study: The respondent, the interviewer, or the interview schedule. Hence this study dealt with these variables carefully.

During the first portions of the study, an interview schedule was developed. A literature search indicated that no suitable instrument was available for this study. The initial schedule included questions pertaining to the demographic characteristics of the family, their knowledge about various aspects of billing procedures, and their opinion on water quality and services provided by the utility company.

After pilot interviews were conducted in the Denmark, Columbia, and Barnwell areas of South Carolina, the sequence of the questions was revised. Demographic and personal questions were asked first, as they helped establish rapport with the respondents. Questions pertaining to knowledge and opinion were asked later.

Relationship Between User Charges And Cutoffs

The object of the third phase of the study was to provide empirical evidence on the relationship between increases in user charges for water/sewer services, delinquency rates, and cutoffs. Special emphasis was placed on low-income consumers. Correlations between fee increases and delinquencies or cutoffs were studied for three separate utility areas. Next, monthly data on individual accounts in one utility area were studied to provide a more intensive investigation of the above relationships and some evidence on the differential impacts of price changes on low-income consumers. The burden that rate increases placed on low-income consumers was also examined. A methodology for measuring this burden is outlined, and some empirical estimates are made by using the individual account data.

Conclusions

A few observations can be made based on the data presented. Nonmetropolitan utilities with service populations of 10,000 to 50,000 operate the strictest, most cost-conscious revenue collection systems. This description is supported by a comparison of delinquency rates, disconnection rates, and initial deposit charges. A comparison of pricing data, on the other hand, indi-

cates that rural utilities have the highest minimum periodic charges and minimum to average cost (M/A) ratios. These values appear to be sufficiently high to affect both cutoff rates and delinquency rates in rural utilities. In metropolitan utilities, there appears to be only a slight relationship between cutoff rates and M/A rates.

Almost all utilities require some minimum periodic charge to meet their need for recovering the fixed costs. A fixed monthly base charge per account that recovers only a portion of fixed costs (such as administration costs) appears to be more equitable than a minimum periodic charge per gallon. The fixed monthly base charge also offers an incentive to conserve water. Utilities using base charges per gallon may wish to review the advantages of fixed monthly administrative charges when opportunities arise to modify their user-charge structures. Variable tailored price structures (which are used in a few metropolitan utilities) may have wider applications, though they involve significant transfers in the incidence of the burden or payment of utility costs.

With regard to billing methods, the following observations and recommendations can be made:

1. Responses of low-income heads of households demonstrate that low-income customers have very little knowledge of discounts for prompt payment. Such billing techniques therefore have little impact on the payment behavior of low-income customers.
2. Erratic enforcement of cutoffs, especially when combined with long grace periods, probably diminishes incentives to pay utility bills in a timely fashion.
3. Some evidence suggests that quarterly billing has many advantages. One is that it lowers administrative costs, which ultimately makes possible the reduction of minimum charges (base charges). Yet it does not appear to increase delinquency rates, cutoff rates, and uncollectable debt. Quarterly billing may be the preferred method in service areas with a stable population, especially in metropolitan utilities with large meter-reading staffs.
4. The objection to quarterly billing is the magnitude of the bills. There is much less opposition to prorating bills than is often supposed. The

system of prorating quarterly bills by thirds has much to recommend it.

5. Liens are ineffective as a means of recovering utility debts. Collection agencies, however, are increasingly used and tend to be extremely effective. However, many important arguments have been made against their use by a quasi-public authority to collect small debts. Their use is not recommended.

All the 30 utilities in this study enforced payment of bills through disconnection as a last resort. The negative public health consequences of cutoffs have been examined and are most apparent in rural and metropolitan service areas. Though some health hazards result from cutoffs, no evidence points to grave or widespread public health dangers. Utility officials at all levels are insensitive to the public health aspects of disconnection. Utilities should increase the public health awareness of staff members through short workshops that use the expertise of local public health professionals. Notification of public health hazards should be placed on a more regular, formal basis in many utilities.

The policy of enforcement by cutoff needs to be reconsidered. Costs of disconnection and reconnection (i.e., in labor and materials and in lost user-charge revenues) are almost always higher than the reconnection fee the utility receives for re-establishing water service. So both the customer and the utility suffer an economic loss.

Evidence indicates that delinquency rates, and in some cases cutoff rates, apparently increase following a substantial increase in user charge. The evidence is clearest in the Sumter, Augusta, and Columbia data. The Columbia data also imply that fee increases result in more delinquencies among low-income customers.

The burden of higher user charges is closely related to the capacity of customers to adjust their consumption to the higher charges. Accordingly, the price elasticities for consumers in three different groupings of census tracts have been calculated as follows:

Tracts with 15% or more below the poverty line	-0.232
Tracts with 5% to 15% below the poverty line	-0.103
Tracts with less than 5% below the poverty line	-0.277
For all census tracts	-0.204

The differential price elasticities at different average income levels have implications for policy-making, but they need further study. The methodology presented in the full report for examining the burden of user-fee increases on low-income consumers can serve as a prototype for other utilities.

The most serious drawbacks to large fee increases are deterioration of the environment and the attendant public health risks. At least as serious, however, is the effect the large increases have on potential customers who are discouraged from tapping into existing water and sewer systems. One of the most striking observations made in this study was the large number of families using well water and septic tanks in semiurbanized areas close to established water and sewer systems. In the last decade, large capital expenditures on new treatment facilities have forced many utilities to increase the cost of tap-ins and service charges so much that there is little motivation to hookup. Utilities facing such problems may wish to consider the various tap-in fee payment options discussed in the full report.

The full report was submitted in fulfillment of Contract No. CI-81-0221 by Voorhees College under the sponsorship of the U.S. Environmental Protection Agency.

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The complete report, entitled "Effect of Fees on Water Service Cutoffs and Payment Delinquencies," (Order No. PB 86-201 357/AS; Cost: \$16.95, subject to change) will be available only from:

*National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650*

The EPA Project Officer can be contacted at:

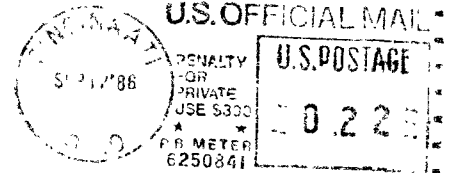
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