

**Rate Options to Address Affordability Concerns
for Consideration by District of Columbia
Water and Sewer Authority**

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Background

The District of Columbia Water and Sewer Authority (WASA) has prepared a draft Long Term Control Plan (LTCP) for addressing problems associated with combined sewer overflows (CSOs). The LTCP is currently under review by the United States Environmental Protection Agency (EPA), environmental and citizen groups, and other interested parties. Costs to implement the LTCP will likely exceed \$1 billion and could rise significantly depending upon decisions related to the appropriate type/nature of CSO controls to meet water quality standards.

Despite the high costs associated with implementing the LTCP and expected increases in wastewater user charges needed to pay for the CSO control measures, EPA estimates that LTCP implementation in the District of Columbia meets the national CSO affordability guidance.^{1,2} The national CSO affordability guidance calls for a calculation of the increased user rates as a percentage of median household income (MHI) on a *system-wide* basis. Rates are deemed to be affordable if the rates are less than 2% of MHI. EPA's analysis estimated that with the needed rate adjustment, WASA's rates would represent a "medium" burden (less than 2 % of MHI, within the target range). EPA has not adopted affordability guidance relating to the potential impact of rates on individual households.

In its draft LTCP, WASA officials note that lower income residents will be disproportionately impacted by increasing rates necessary to pay for the CSO control measures. EPA acknowledges that water and wastewater rates may be an affordability issue for residents at lower income levels. For residents with MHI of less than \$15,000 today WASA's current wastewater rates already are near or exceed the 2% of MHI affordability threshold. Even with an inflation adjustment for income over a twenty year period, residents in the lowest income group would face growing affordability problems with steadily increasing wastewater rates. Households with somewhat higher incomes (currently \$20-30,000) would likely exceed the affordability mark midway through a series of rate increases over a 20 year period.

EPA's October 31, 2002 letter suggested that WASA consider differential wastewater rates or other assistance to lower income residents of the District of Columbia in order to reduce the impact of rising rates. This paper provides information about water utility affordability programs in use around the United States and factors which WASA may wish to consider in adopting one or more measures for use to reduce the potential burden of wastewater rates.

EPA is aware that WASA has already initiated two programs to assist households with special needs in paying their utility bills. “Serving People by Lending a Supporting Hand” (SPLASH) provides grants on an emergency basis to assist with bill payment. SPLASH is funded through corporate and customer donations and is administered by the Salvation Army in cooperation with WASA. WASA also provides eligible customers an annual rate discount of \$84 on their water bill. The discount program is coordinated with similar programs related to gas, electric, and telephone service. Eligibility for the utility rate discounts is reviewed by the District of Columbia Energy Office.

Overview of Affordability Programs

Concern for the ability of residents to pay for utility bills is not new. The issue is the *ability* to pay – not the *willingness* to pay higher water rates. Because paying for utility services represents a much higher burden on lower income residents than for other residents, water rates are highly regressive by nature. It is not unusual for the MHI affordability indicator to be well under the 2% threshold for a system as a whole, but for lower income residents, the financial impact of the rates may range from 4-8% of MHI. As a result, lower income residents may face difficult financial choices (e.g., late or nonpayment of bills, reduced service levels) in meeting basic service needs. Affordability problems may be evident through increasing arrearages, late payments, disconnect notices, service terminations, and uncollectible accounts. Reduced revenue collections could endanger the utility’s financial stability and bond rating as well as create public relations problems. Often lower income residents occupy substandard housing with inadequate and leaking plumbing fixtures which contribute to costly wasted water.

Because of economies of scale, water and wastewater rates have usually been far lower in large cities. As a result, affordability issues have more typically been associated with small and very small towns. Moreover, affordability concerns have been more common for small water systems rather than wastewater systems. As more stringent environmental requirements are adopted, affordability problems become heightened. It has become evident that larger utility systems may face affordability concerns as well where there are large income disparities among its residents.

Over the past 15 years in particular, many initiatives have been established to assist lower income residents maintain necessary public services. This paper will focus on the experience in establishing affordability programs for water and wastewater services. Affordability concerns have long been associated with other utilities such as gas and electric service, waste disposal, and telephone service. Water affordability programs often built on the experiences of initiatives in the energy and telephone sectors and, therefore, there are many similarities in approaches.

Congress recognized urgent public needs and established a Federal role with respect to providing affordable service to all residents for telephone and energy services. A similar role with respect to water and wastewater services, however, is unlikely. As a result, this paper will not discuss the Federal mandates and funding programs related to energy and telephone service.

Beyond providing a portion of the funding necessary to implement environmental infrastructure, there has been a limited Federal role in other aspects of water and wastewater management, notably establishing user rates. The Construction Grants program included provisions related to establishment of a user charge system (40 CFR 35.929). The rule stipulated that costs of services be equitably distributed (proportional share) among classes of users (e.g., residences, industry, commerce, institutions). The Clean Water Act (CWA) was amended in 1987 to specifically allow municipalities to adopt user charge systems with differential rates for low income residents: “A system of user charges which imposes a lower charge for low-income residential users (as defined by the Administrator) shall be deemed to be a user charge system meeting the requirements of clause (A) of this paragraph if the Administrator determines that such system was adopted after public notice and hearing.” Public Law 100-4, Title II, section 204(b)(1). EPA has not prepared any guidance or rules relating to this provision of the CWA. EPA has released informational materials relating to alternative rate structures related to small drinking water system affordability and water conservation.^{3,4}

Affordability Program Approaches

In developing an affordability program for water and/or wastewater rates, a utility will need to consider a number of aspects of the program: (1) identification of groups are the intended beneficiary of subsidies, (2) establishment of criteria and methods for assessing eligibility for participation in the program, (3) the objectives of the assistance program, (4) the particular nature and extent of subsidies, and (5) the source of funds to pay for the subsidies. The utility most likely will prepare several options for its affordability program. The utility, in consultation with various stakeholder groups, will evaluate the options in view of various criteria and other implementation considerations.

Target Group (Who Receive Subsidy?)

Utilities may identify one or more groups which will receive financial assistance under their affordability program. These groups could include one or more of the following groups:

- Elderly (specified age, typically 65 and over, but current programs vary from 60-70);
- Disabled (usually require a doctor’s certification);
- Low income (criteria vary widely; see below);
- Unemployed;
- Households facing temporary financial emergencies (criteria vary widely);
- Combination (e.g., low income AND elderly, low income AND disabled); and
- Owners/tenants – Programs are commonly limited to owner-occupants of single family residences or tenants of single family residences; some utilities also provide limited discounts to owners/tenants in multifamily dwellings (often limited to smaller buildings, e.g., under 10 units).

Income Eligibility (How Qualify?)

Most affordability programs have established specific income criteria. The particular caps vary widely and often provide ranges based on family size. Customers usually must apply for assistance or acceptance into the rate reduction program annually and provide documentation of income (including participation in various public assistance programs). Some systems require residents to also qualify for homeowner tax rebate/homestead exemption programs.

- Below set percentage of median household income (e.g., < 50% of MHI for the District);
- Below Federal poverty level (e.g., < 150% of Federal poverty level); note that while the Federal poverty level is adjusted annually to reflect changes in the Consumer Price Index, the poverty computation method dates from 1955 and, by itself, is widely discredited as being outmoded; for 2002, the Federal poverty guidelines range from \$8,860 for a single person household to \$30,420 for an 8 person household;
- Below set income cap (e.g., < \$20,000);
- Utilities generally require participants in affordability programs to reapply annually and to include copies of income documentation;
- Participation in other public assistance program may serve as de facto evidence of income limitation (e.g., Aid to Families with Dependent Children, Supplemental Security Income, Veterans benefits, Low Income Home Energy Assistance Program, Medicaid, food stamps). This method of program qualification may increase program participation because it is less burdensome.

Program Purpose (What is Objective?)

In establishing an affordability program, a utility may have one or more objectives in mind. These purposes might include the following:

- On-going reduction in the total bill to an affordable level;
- Assistance to avoid service disconnection (e.g., credit counseling, forgiveness of payment arrearages, payment schedules); and
- Financial incentives to install water use reduction plumbing or to repair leaks (e.g., reduced cost, free); intent is to reduce water bill by reducing water usage. However, some observers note that low income residents are not typically excessive water users so there is less opportunity to influence water use (i.e., inelastic demand). There is extensive literature and experience pertaining to modifications to water rate structures to encourage water conservation.^{5,6} There may be some opportunities to incorporate changes to the rate structure which are focused on achieving water conservation objectives while also endeavoring to make rates more affordable for certain user groups. However, because affordability is usually addressed only indirectly, this paper will not explore the full range of conservation-oriented alternate rate structures.

Financial Mechanism (What Type of Assistance?)

Publicly-owned and privately-owned water and wastewater utilities have tried to address the affordability problem in many ways. The American Water Works Association Research Foundation (AWWARF) published the definitive guide to affordability programs in 1998.⁷ The AWWARF report provides a comprehensive discussion of options and the relative pro's and con's of each approach. This report provides a summary discussion of the topic. For further detail, the reader is encouraged to review the AWWARF publication. That report, however, provides relatively few specific examples of actual affordability programs. For this paper, EPA conducted a literature review and, more effectively, an internet search. The results of that effort are summarized in the attachment "Summary and Comparison of Water/Wastewater Affordability Programs". Note that there are likely many other utilities which have established affordability programs, but which do not have web-based available information. Note also that the attachment includes only water and wastewater utilities, not electrical, gas, telephone, or solid waste examples.

In identifying the type and level of assistance, the utility must determine how much of a subsidy is needed to bring rates within the affordable range. Ideally the utility might establish a sliding scale based on need; such an approach, however, may not be practicable. Nonetheless, some utilities consider household size in conjunction with income (i.e., once a household met the income requirement, its level of assistance would vary depending upon size of the family. Utilities typically have different rate "tiers", with varying rates based on usage. Rate structures may vary in the number of rate tiers and the variability of rates across the tiers.

Alternative Rate Structures	
Lifeline rate	Determine minimum required usage level (i.e., "essential service"); for that service level (i.e., "first tier"), establish free or reduced cost rate. Service in excess of the specified minimum level could be charged either at the standard rate or some appropriate discount.
Credits and discounts	Qualified users receive a specified dollar reduction on their bill or a percentage discount on the total bill or usage portion of bill (may vary by household size).
Waiver fixed cost portion of bill	Exemption from paying fixed cost (e.g., meter charge) portion of bill; pay only for actual water use (either at full cost or at discount).
Billing frequency	Monthly billing would reduce difficulty in paying. (WASA

	already bills monthly.)
Budget billing	Even monthly billing based on annual expected usage. (Most relevant if users have high seasonal variation, e.g., lawn watering, pool.)
Reduced fixed monthly charge	Rates are typically comprised of both a fixed service cost (often called a “meter charge”) and a variable amount based on actual use. Some systems waive or reduce the amount of the fixed cost, recognizing the limited prospects for most low income users to reduce water usage to save money.
Water conservation incentive rate structures	To encourage reduced water use, many systems have adopted an increasing block tiered rate with higher charges for increased use. Similarly, some systems (particularly in water short areas) may also include seasonal surcharges for peak usage. While laudable to encourage water conservation, these approaches may have limited success in addressing affordability issues for low income users.
Combination	Many systems blend aspects of discount approaches.
Payment Assistance	
Financial emergency grant	In special cases, resident may need a grant to pay all or a portion of the bill. The utility would determine the circumstances that merit such assistance.
Full or partial payment forgiveness; alternate payment schedules	Some users may have fallen behind on payments and have limited prospects for repayment. Rather than disconnect service and contribute to potential public health issues, the system may opt to work out alternate payment arrangements or reduce the amount of payment arrearage in full or in part.
Other	
Full or partial grant or no interest loan	A system may have a comprehensive or targeted program to encourage installation of low water usage plumbing fixtures. Fixtures could be provided free or at reduced cost to all users or those meeting specified income limits.
Water audits	A system may conduct water use audits on a request basis or in a targeted area to identify water leaks and other opportunities for reduced water use. Qualified residents may receive

	reduced cost or free repairs. Programs may also include water conservation education.
Financial counseling	Some systems have found that certain residents benefit from counseling on money management and debt reduction strategies.
Reassess fee structure	Some systems have adopted punitive fees (e.g., late payment, nonpayment, returned checks, disconnection/reconnection). Often such fees contribute to users financial difficulties. Some systems have considered waivers or fee reductions in certain circumstances for lower income users.

Funding Source (How Pay For?)

If subsidies are provided to certain user groups, revenues must be obtained from other sources to pay for the cost of service. There are several options which are considered in establishing an affordability program:

- The rate structure is adjusted so that the subsidies are borne by other users;
- The utility obtains public revenues from the municipality (e.g., general tax revenues, property taxes);
- The utility solicits donations from all users (e.g., contribution with payment);
- The utility designates late fees, penalties, and other special revenues;
- A third party charity (e.g., Salvation Army) provides funding and is responsible for fundraising;
- The utility receives a grant from a foundation or other governmental unit.

Criteria for Consideration of Alternatives

Once the utility has developed a number of options for affordable programs, it will need to weigh the relative advantages and disadvantages of each approach. Below are some commonly used evaluation considerations. The utility should involve various stakeholder groups in the development and review of alternative approaches for addressing the affordability issue.

- **Equity** – degree of need; nature and extent of assistance; impact of cost shifting on other residential/non-residential users
- **Efficiency and effectiveness** – impact on relative affordability; expected level of participation (e.g., relative complexity of application process, willingness to ask for assistance), effect on water use
- **Public/political acceptance** (clear goals, understandable approach, identified need, minimal cost shifting, involvement in program design, range of options considered, relative controversy)
- **Implementability** (relative complexity, workload in reviewing eligibility, coordination with other programs to reduce or shift administrative burden)
- **Implementation costs** – the system should determine the additional administrative costs in setting up and running the program. To some extent, additional administrative costs may be offset by reduced billing and administrative costs related to late payments, disconnect notices, service terminations, and service reconnections.
- **Revenue stability** – the utility should determine the cost of the new program in terms of reduced revenue collection. In addition, if applicable, the utility should estimate the extent of potential revenue variability if users respond by reducing water usage.

Implementation Issues

In addition to the suggested evaluation factors identified above, the utility may also want to consider the following potential issues in implementing its affordability program. These issues may be considerations in both the selection of the affordability approach as well as the detailed design of the selected approach and development of an implementation strategy.

- **Administrative complexity** – There is a tradeoff between tailoring assistance to precisely the amount needed to bring water rates within affordability range and keeping the program simple for users to understand and apply and for the utility to administer. Some systems provide varying amounts of assistance depending upon household size, but it is unusual for the level of assistance to vary depending upon income (e.g., if meet the income criteria, a household with income of \$12,500 would receive the same type and level of assistance as a household with income of \$20,000). There may be some opportunities for reducing administrative complexity or costs by coordinating with other utilities with similar programs or sharing eligibility data with social services agencies.
- **Single family vs. multifamily** – Many affordability programs are limited to single family residences (in some cases, must be owner-occupied) and resident must be responsible for

paying the bill. Some systems, however, include small apartment buildings with rate reductions to the landlord based on the number of tenants which meet eligibility criteria; landlord must demonstrate that the cost savings are passed on. In other cases, systems provide rate credits directly to tenants (e.g., water voucher, credit on electric bill, income tax credit; the latter approach is likely to be relatively ineffective because many lower income households do not file tax returns and, therefore, would not benefit from a tax credit or deduction). Utilities often provide incentives to landlords to repair leaking fixtures. Some water systems are installing meters (or sub-meters) in small multi-family buildings. The 2000 US Census reports that about 60% of all occupied residential units in the District of Columbia are occupied by tenants.

- **Social service orientation** – Many utilities are reluctant to establish and manage programs which may be perceived as social service oriented. To address this concern, some utilities coordinate their efforts with other public or private social service or charitable organizations which may be responsible for accepting and processing assistance applications, determining eligibility, soliciting contributions, distributing assistance, and coordinating with other social (e.g., education, counseling) and financial assistance programs.
- **Barriers to participation** – Some residents may be reluctant to request assistance for various reasons. To overcome barriers to participation, systems have streamlined application forms/procedures, implemented accommodations for semi-literate and non-English speaking residents, conducted public outreach (such as the District’s recent Joint Utility Discount Day), and coordinated with various consumer advocate groups and other social service agencies.
- **Adoption of new rate structure** – involve ratepayers, consumer advocate groups, political leaders

Conclusion

EPA recognizes that WASA may face increasing issues related to affordability of water and sewer rates as the LTCP recommendations are implemented. On a system-wide basis, EPA has determined that rates are affordable even with full implementation of the LTCP. To assure that rates are affordable for all segments of the population of the District, WASA may need to consider various approaches for modifying its rate structure or providing other means of financial assistance to financially impacted households. EPA hopes that this report will assist WASA in considering potential means to address the affordability issue.

Footnotes

- ¹ Letter from Jon Capacasa to Jerry Johnson, WASA General Manager, dated October 31, 2002 regarding the implementation schedule for the LTCP
- ² *Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development*, USEPA, Publication 832-B-97-004, February, 1997, available for download at <http://cfpub.epa.gov/npdes/cso/guidedocs.cfm>
- ³ *Information for States on Developing Affordability Criteria for Drinking Water*, USEPA, Publication 816-R-98-002, February 1998, available for download at www.epa.gov/safewater/smallsys/afforddh.html
- ⁴ *Conservation Pricing of Water and Wastewater*, USEPA, April 2000, available for download at <http://www.epa.gov/OW-OWM.html/cwfinance/cwsrf/consrvprice.pdf>
- ⁵ Cuthbert, Richard W. and Pamela R. Lemoine, “Conservation-Oriented Water Rates”, *AWWA Journal*, November 1996, pages 68-78
- ⁶ Jordan, Jeffrey L. and Rick Albani, “Using Conservation Rate Structures”, *AWWA Journal*, August 1999, pages 66-73
- ⁷ *Water Affordability Programs*, AWWA Research Foundation, Publication 90732, 1998

Other References

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- Beecher, Janice A. and Peter E. Shanaghan, “Water Affordability and the DWSRF”, *AWWA Journal*, May 1998, pages 68-75
- City of Santa Rosa (California), “Conservation Pricing and Santa Rosa’s Water Rates”, 2001, available for download at www.ci.santa-rosa.ca.us/wc/rate_study.asp
- Raftelis, George A., *Comprehensive Guide to Water and Wastewater Finance and Pricing*, second edition, Scranton Gillette Publishers, 1993 (<http://sgcbookstore.safeshopper.com/>)
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Developing Water System Financial Capacity, handout from USEPA Drinking Water Academy workshop, January 2002, available for download at <http://www.epa.gov/safewater/dwa/electronic/fincapacity.ppt>

“Evaluating Municipal Wastewater User Charge Systems: What You Need to Know”, USEPA, Publication EPA-832-R-93-010, 1993

Financing and Charges for Wastewater Systems, Water Environment Federation, Publication 00MSP3, 1984

A Guidebook of Financial Tools: Paying for Sustainable Environmental Systems, USEPA Environmental Financial Advisory Board, April 1999, available for download at www.epa.gov/efinpage/guidebook/guidebooktp.htm (see discussion on “Differential Pricing”)

Meeting Water Utility Revenue Requirements, National Regulatory Research Institute, Columbus Ohio, 1993

Poverty in the District of Columbia – Then and Now, prepared by the Center on Nonprofits and Philanthropy and The Urban Institute for The United Planning Organization, 2000

Other Resources

National Consumer Law Center, Boston/Washington, <http://www.consumerlaw.org/>

National Association of Utility Regulatory Commissioners, Washington, <http://www.naruc.org/>

National Regulatory Research Institute, Columbus Ohio, <http://www.nrri.ohio-state.edu/>

Consumer Utility Board, Washington, <http://www.opc-dc.gov/cub.htm>

Public Service Commission, Washington, www.dcpssc.org

DC Energy Office, Washington, <http://www.dcenergy.org/>

United Planning Organization, Washington, <http://www.upo.org/>