UIC GOVERNMENT FINANCE RESEARCH CENTER

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Water Rate Setting for Disadvantaged Communities in Northwestern, Central, & Southern Illinois

Policy Bite

The Illinois General Assembly commissioned the Government Finance Research Center to conduct a "Water Rate Setting Study." This brief is based on the second report from the study, which focuses on Northwestern, Central, and Southern Illinois (NCSI). Disadvantaged communities across the United States face greater insecurity in access to safe and affordable drinking water, specifically low-income, Black, and Indigenous populations, as they experience higher rates of water shut-offs, among other disparities.

- Regression analysis of 595 NCSI municipalities suggests there is no statistically significant association between median household income (MHI) and monthly water bills.
- Analysis of 365 municipal ordinances across NCSI reveals that a one percentage point increase in a municipality's poverty rate is associated with an additional $1.60 deposit required to initiate water service. A ten-percentage point increase in the share of residents with elderly status is associated with a 2-day shorter bill payment window.
- Small and rural municipalities face substantial challenges due to fewer economies of scale, limited administrative and technical capacity, and less opportunity for intergovernmental cooperation. In some municipalities, the physical landscape limits expansion and restricts their ability to add customers to offset system costs.

Research Brief

Disadvantaged community (DAC) definitions determining access to financial assistance are critical to addressing many municipal water systems' challenges. The U.S. and Illinois Environmental Protection Agencies (EPA and IEPA) utilize various definitions of DACs to efficiently target loans and grants related to public water provision. One additional definition is the Department of Housing and Urban Development's (HUD) designation as a qualified census tract (QCT). QCTs are areas where at least 50% of households have incomes below 60% of the Area Median Gross Income (AMGI) or have a poverty rate of 25% or higher. Using the QCT designation to define DAC, among the 595 municipalities for which the GFRC researchers collected water rates, there is no statistically significant association between MHI and monthly bills, even when examining DAC and non-DAC municipalities separately. Similarly, a municipality's base charge and the volume of water included within the base charge do not vary across DACs.

Illinois has the greatest number of local governments among all U.S. states, exacerbating challenges for DACs that must independently generate sufficient revenue to fund water operations. While public utilities operate on a not-for-profit basis, setting water rates sufficiently high to cover system costs is critical to water system governance. This is driven by the need to fully cover the system's operations and maintenance, capital needs, and environmental costs. Ongoing debate questions whether system costs should be funded through water bills amid decreasing water demand and increasing infrastructure replacement needs.

The full cost recovery mandate disproportionately poses challenges for smaller systems and DACs. Smaller, rural communities, which are overrepresented in NCSI, face a range of challenges, including longer-deferred investment in infrastructure, lack of economies of scale in service provision, urbanization leading to shrinking customer bases, and customers with lower incomes. However, a shortage of research on infrastructure quality across small DACs limits understanding of infrastructure needs and how it impacts water rate setting. Nonetheless, there are indications that rural systems struggle disproportionately to keep up with infrastructure maintenance and replacement costs. For example, water systems that provide household water services to rural, low-income communities have consistently higher health-based violations than larger, more professionalized systems. DACs also tend to face barriers in acquiring water-saving technologies, such as water conservation equipment, which is estimated to roughly double customers' water bills.

The U.S. Department of Agriculture (USDA)'s Water & Waste Disposal Loan & Grant Program utilizes a state revolving fund (SRF) program to help DACs in Illinois. Similarly, the IEPA offers low-interest loans for water infrastructure projects across Illinois. Almost half of the IEPA's SRF funding distributed from 2012 to 2022 was received by DAC communities, defined as containing one or more QCTs. This is likely due to IEPA's emphasis on providing loans, principal forgiveness, and subsidized interest rates to municipalities based on meeting criteria for hardship or small communities. The USDA rural development grants and loans are less targeted towards DAC communities, with only 15.43% of funds distributed to NCSI municipalities containing QCTs (see Figure 1).

Water shut-off rates have also been used as a proxy for the inability to pay for household water services, subsequently identifying DACs. Regression analyses of 365 municipal ordinances across NCSI indicate some population characteristics are associated with water payment and penalty policies. Specifically, a higher percentage of a municipality's households considered in poverty is associated with a higher deposit value. A higher percentage of municipal residents with elderly status is associated with fewer days to make payments before being considered delinquent.

In evaluating water policy, it is important to note that the autonomy afforded to local water providers suggests that decisions regarding rates, penalties, and assistance programs can vary widely, affecting the uniformity and fairness of enforcing policies and procedures outlined in ordinances. Evidence shows low-income households are as much as five times as likely as non-low-income households to experience disconnection of utility services for non-payment. These patterns are likely to exist in water access and affordability as well.

Interviews conducted with representatives of NCSI municipal water systems reveal:

- Across the NCSI regions, small and rural communities encounter significant challenges stemming from community characteristics and socioeconomic patterns, lack of administrative and technical capacity, fewer economies of scale in service provision, and less opportunity for intergovernmental cooperation.
- Some communities face limitations, like geography or tax base, which limit their options to engage with other communities in ways that could provide economies of scale.
- For some communities, the landscape limits expansion and the ability to add customers to support costs.

Read the full report HERE.

The **Government Finance Research Center** at the University of Illinois Chicago shapes and informs public policy and scholarly discourse on government and public finance by identifying, planning, and executing research, providing reports and informed analyses, delivering educational opportunities and technical training, and offering inclusive venues to convene national and local discussion on fiscal and governance issues.

Figure 1. IEPA SRF Funds & USDA Rural Development Grants & Loans 2012-2022