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Why Markets Can't Price the Priceless

It takes government planning to promote the rational conservation and use of water.

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Water sources for many Southwestern cities such as Las Vegas and Phoenix are drying up. Meanwhile, most Eastern cities have ample supplies but decaying infrastructure that can't handle the more frequent and severe flooding brought on by climate change. The Cato Institute and Reason Foundation are part of a libertarian movement arguing that market pricing of water could solve both problems. But water, as a public good, can't just be left to private markets, or we will have billionaires watering lush lawns while other citizens have dry taps. Privatizers are also notorious for underinvesting in the infrastructure needed both to supply fresh water and to provide adequate sewers and protection from storm surges.

The price mechanism, nonetheless, is a very powerful influence on behavior. When prices rise, people consume less of a good. Pricing can and should be utilized as part of an overall strategy for conserving water, preventing its wasteful use, and funding necessary investments in infrastructure. Paradoxically, the pricing of water—the libertarian panacea—works only as part of a comprehensive public planning strategy.

Water has long been an underpriced asset in the United States. As a result, we overuse it. Historically, cheap water has failed to price in the need to invest in infrastructure. However, that is changing under pressure from collapsing systems, EPA mandates, and threats of heavier rain and storm surges.

Annual local government spending on public water infrastructure has been increasing dramatically during the past decade, reaching a high of $111.4 billion in 2010, a 60 percent increase from 2001. But there is still a gap. The EPA estimates that $384 billion will be needed through 2030 to maintain the nation's drinking water infrastructure. Adding stormwater infrastructure takes the price up to $632 billion between 2007 and 2027. The American Water Works Association suggests that this amount doesn't include pipe replacement and estimates the

figure at closer to $1 trillion. The U.S. Conference of Mayors adds capital, operations, and maintenance costs, arriving at an estimate of $2.8 trillion to $4.8 trillion.

Water needs to be funded as a public good

To pay for infrastructure, water rates over the past two decades have been increasing yearly at 4 percent to 6 percent above the consumer price index. But water prices can rise only so far before real affordability limits are reached—and that's one limitation of relying just on pricing. Water needs to be funded as a public good. Yet federal funding for water systems has declined dramatically. After enactment of the 1972 Clean Water Act, the federal government provided 75 percent of the funding for water systems through the 1970s and 1980s, but provides only about 10 percent today.

Given the pressure to provide clean water, meet federal pollution standards, and maintain infrastructure while keeping rates affordable—all with less federal funding and limited ability to use debt financing—many strapped cities have handed systems over to the private sector. But, as noted, privatizers are notorious for underinvesting in assets that don't yield a short-term return, and for cutting corners in other ways.

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When it comes to water privatization, Atlanta is an emblematic failure. Eighteen months after the city signed a contract with United Water (a subsidiary of French water giant Suez) in January 1999, problems emerged, including system breakdowns, five water-boiling alerts, work backorders, and uncollected bills. It turned out that United Water could only cut costs by half of what was expected and didn't have funds to keep up with maintenance. Atlanta canceled its contract in 2003. Food and Water Watch reports that Milwaukee; Camden and New Brunswick, New Jersey; Gary, Indiana; Houston and other cities also canceled early or did not renew United Water contracts for various combinations of poor maintenance, waste dumping, and increased rates.

Because water provision is a monopoly and the quality of the product is defined by regulatory standards, there is limited opportunity for private entrepreneurs to improve efficiencies. There is thus not much of a windfall that can be redirected to infrastructure upgrades, especially since privatizers also expect profits.

But this experience should not lead us to conclude that water can't be priced. Public authorities can use prices in the context of a planning process that sets goals the market is incompetent to set. Here, there is some good news: Because water has been so underpriced, there is plenty of room for smart public policies that combine pricing and regulatory measures to produce more sensible usage patterns.

Smart pricing, policy, and programs in the public sector work

In The Big Thirst, Charles Fishman tells the story of former Las Vegas water czar Patricia Mulroy's multi-pronged strategy of pricing and regulating to dramatically reduce water usage in this desert city. She started by raising water rates and switching from a fixed charge to one that increases rates as volume used increases. She convinced hotel developers to use wells on their properties or recycled wastewater to supply their water fountains rather than using drinking water. She persuaded Mission Industries, a laundry service that washed 3.5 million pounds of hotel sheets and towels a week, using a million gallons of water a day, to install a water recycling system. The system reduced daily water usage to 760,000 gallons, saving $2,000 a day. An unanticipated benefit was that the heat of the rinse water also reduced drying time, resulting in savings on natural gas bills as well. Las Vegas golf courses have dramatically reduced water use by changing from grass to more climate-appropriate plantings, and one course has gone off the water grid completely. The same transition is being made in residential yards through the "cash for grass" program that has been replicated in other water-strapped cities. New Las Vegas homes are no longer allowed to have grass front lawns. And more than 90 percent of water used indoors is recycled. Smart pricing, policy, and programs in the public sector work. Simply allowing markets to set prices would not have accomplished all this.

Pricing by public authorities can be used to address stormwater management problems, too. When big storms hit, runoff enters sewer systems, and in the worst cases, unsanitary and disgusting overflows combine raw sewage with rainwater. This happened to many East coast cities in the aftermath of Hurricane Sandy. The cure involves both upgrading sewer systems and transitioning to what is called green infrastructure, which increases the ability of land to absorb rainwater rather than relying on piping it away. One of several approaches to green infrastructure is creating more permeable surfaces that can absorb water and reduce runoff. Both regulatory and pricing disciplines can help achieve these goals.

Like many cities, Philadelphia is required by the Environmental Protection Agency under the Clean Water Act to reduce sewer overflows and sewage entering waterways. It must meet state requirements as well. In response, the Philadelphia Water Department is implementing a program called "Green City, Clean Waters," a 25-year, $2 billion plan that aims to control runoff from 10,000 acres of land and reduce sewer overflows by 85 percent by replacing impervious surfaces with permeable pavement, expanding parks and green spaces, and using various green infrastructure techniques.

As part of the program, the water department instituted a property-based billing system that charges customers for stormwater based on amount of impervious cover and parcel size. The stormwater fee added nearly 48,000 new billing accounts. For example, under the old system, a parking lot wouldn't be billed because it didn't use water. Under the new system, the parking lot owner pays based on the impervious cover and the imputed runoff costs. Nonresidential customers who used to pay for stormwater service based on the size of their water meter started paying a fee based on land characteristics and impervious surfaces. This re-allocation of charges

caused some nonresidential customers' bills to increase, while others saw a decrease or hardly any change at all.

A new system of credits enabled some property owners to reduce their stormwater charges significantly

The new system significantly raised many bills, but it wasn't all "sticks." The department created several carrots to motivate commercial and industrial property owners to undertake measures to manage stormwater on their properties. A new system of credits enabled some property owners to reduce their stormwater charges significantly (up to 80 percent). These credits reduce the future billing amount to the extent that property owners install green infrastructure. The credit is based on what percentage of the impervious area has infrastructure capable of absorbing the first inch of rainfall. Further, the water department has created the Stormwater Management Incentives Program in partnership with the Philadelphia Industrial Development Corporation, providing grants and low-interest financing for the installation of systems that reduce a parcel's stormwater runoff into the sewer system. Another program, the Greened Acre Retrofit Program, provides grants to companies or project aggregators capable of developing a stormwater management plan on properties exceeding 10 acres exclusively within Philadelphia's combined sewer service area.

The remedy for both overuse of scarce potable water and for overwhelmed sewer systems combines planning, pricing, subsidies, regulations, public investment, and public leadership. In other words, an effective water policy requires government. Markets alone, despite the power of pricing, could never achieve efficient outcomes.