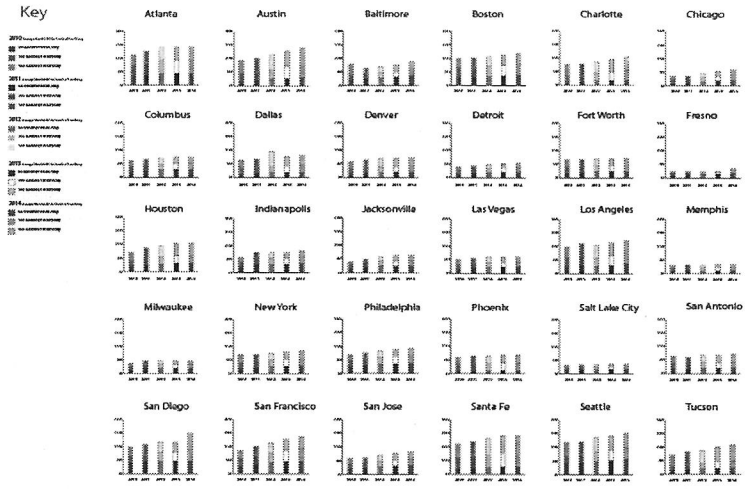
Price of Water 2014: Up 6 Percent in 30 Major U.S. Cities; 33 Percent Rise Since 2010

WEDNESDAY, 07 MAY 2014 06:00

Water scarcity and successful conservation programs force utilities to adapt their business plans.



Graphic © Codi Kozacek / Circle of Blue

Residential water prices for 30 major U.S. cities for three consumption levels from 2010 to 2014. *Click for a high-resolution file.*

By Brett Walton
Circle of Blue

The price of water rose again in 2014, though less steeply than in previous years, according to Circle of Blue's annual survey of single-family residential water rates in 30 major U.S. cities.

The average price for a family of four using 100 gallons per person per day increased 6.2 percent, the smallest year-to-year change in the five-year history of the survey. The median increase was 5.2 percent.

For families using 150 gallons and 50 gallons per person per day, average prices rose 6.6 percent and 6.1 percent, respectively.

The pricing survey reveals parallel trends in the municipal water business.

On one hand, utilities are raising rates to keep pace with rising costs for new pipes, treatment facilities, and, in certain cases, for water itself.

Range of Use

Circle of Blue calculated monthly water bills for a family of four at three consumption levels:

Low: 190 liters (50 gallons) per person daily

Medium: 378 liters (100 gallons) per person daily

High: 568 liters (150 gallons) per person daily

But water providers are also changing the structure of their rates; that is, how much residents are charged each month for access to the municipal system versus how much they pay for a gallon of water. Fussing with the latter – by charging high-volume users more – can encourage conservation. Altering both the monthly fee and the volume fee can help a utility adapt to conservation's ill effect: a drop in revenue.

Annual rate increases quickly build over time. Since 2010, average prices rose 33 percent for the index, the equivalent of adding $US 15 per month to a $US 45 water bill.

Residents in some areas are paying even more. Prices in five cities – Austin, Charlotte, Chicago, San Francisco, and Tucson – ballooned more than 50 percent over five years. Chicago's increase, for instance, is part of a municipal water investment plan, initiated in 2011, to double rates over four years, primarily to replace dilapidated pipes, some a century old.

These examples are striking, but they are increasingly common, as the cost of water outpaces the cost of other staple household goods, reckons Bill Stannard, president of Raftelis, a rates consultancy.

"What we're seeing now, for the foreseeable future, is that the annual increase in revenue will exceed the Consumer Price Index by double on average," Stannard told Circle of Blue. "That's how much revenue will be needed to fund utilities."

Raftelis collaborates with the American Water Works Association, an industry group, on a biannual rate survey, which included data from 290 water utilities in 2012. Between 1996 and 2012, rates increased an average of 4.9 percent annually for water, Stannard said.

Shaking the Money Tree

These are strange days for water utilities.

Unlike many businesses, they are encouraging customers to buy less of their product. Some of the decrease in demand is incidental: new plumbing codes, low-flow toilets, and showerheads that spritz instead of splash have reduced the amount of water flowing into the home. The economic recession starting in 2008 forced families to cut back in every way possible, including water consumption.

But conservation is also an explicit policy. Utilities in dry regions pay homeowners to rip out lawns. Fuzzy civic mascots visit schoolrooms to preach the virtues of a short shower. And over the last three decades, price signals became popular. The more water a household used, the more expensive each gallon became. Some cities, Santa Fe most notably, approved charges so high that price acted as a stop sign.

Circle of Blue's 2014 Water Pricing Survey

City							
Phoenix	1600	11.55	0.0%	38.75	0.0%	68.45	0.0%
Fresno	122	18.88	30.2%	28.26	43.1%	97.14	10.9%
Memphis	583	12.04	2.1%	24.08	2.1%	36.17	2.1%
Chicago	N/A	19.86	14.9%	39.22	14.9%	59.58	24.9%
New York	8360	28.64	5.6%	57.26	5.5%	85.92	7.5%
Indianapolis	800	33.01	5.2%	57.32	8.1%	81.62	10.2%
San Antonio	1000	22.65	5.2%	43.66	6.0%	74.25	6.0%
Salt Lake City	380	17.22	4.0%	27.19	4.1%	37.79	4.1%
Los Angeles	4000	36.53	19.0%	75.98	14.5%	122.41	8.6%
Seattle	630	55.25	8.1%	98.77	9.3%	153.22	8.1%
Santa Fe	78	54.78	0.0%	153.78	0.0%	284.19	0.0%
Denver	1300	22.66	3.6%	41.42	3.6%	73.58	3.5%
Tucson	775	24.40	12.0%	51.65	11.2%	111.01	9.4%
Dallas	1306	19.39	4.4%	44.87	5.3%	81.74	5.6%
Jacksonville	614	23.11	0.0%	43.39	0.0%	63.49	0.0%
Las Vegas	2000	25.68	3.8%	42.27	2.8%	62.90	2.2%
Charlotte	774	19.33	7.7%	53.73	10.9%	107.81	12.2%
Fort Worth	625	24.76	6.4%	47.16	5.3%	72.56	2.5%
San Jose	107	32.20	8.0%	56.43	8.0%	83.49	8.0%
Columbus	1115	28.91	0.0%	52.60	0.0%	75.08	0.0%
Houston	2060	30.62	1.2%	58.04	1.1%	105.62	1.1%
Austin	796	29.74	14.3%	79.64	10.3%	140.24	8.5%
Boston	659	37.81	4.8%	77.23	4.8%	118.40	4.8%
San Francisco	2400	48.50	6.4%	92.50	6.1%	136.50	6.0%
San Diego	1300	48.77	2.6%	89.37	10.6%	150.15	29.4%
Atlanta	1250	42.64	0.0%	91.92	0.0%	141.20	0.0%
Milwaukee	661	20.81	3.0%	34.65	3.0%	48.49	3.0%
Detroit	740	22.08	4.4%	39.65	4.4%	55.21	4.4%
Baltimore	1800	36.77	15.0%	58.83	15.0%	88.25	15.0%
Philadelphia	1672	38.14	5.0%	65.83	5.0%	92.76	5.1%

circle of blue

Graphic © Codi Kozacek / Circle of Blue
Water pricing for 30 major U.S. cities in 2014 and the percent change from 2013.
Click to see a larger version.

These measures are causing per capita demand in most cities to fall, and in some cases plummet. Water consumption in Tucson, for example, fell 8 percent between 2010 and 2013. Households in Fort Worth, Texas, did even better, chopping demand by 18 percent between 2006 and 2013, and the fast-growing city expects more savings from new rules adopted in April that permanently restrict lawn-watering to twice per week.

The drop in demand had clear benefits, said Mary Gugliuzza, water department spokeswoman. Fort Worth put off pricy expansions of existing treatment plants and construction of a new plant, not needing for now the added capacity. Delaying those investments is saving the city $US 20 million per year in borrowing costs. If the three projects had been built according to the plan set forth in 2005, residential water rates today would be 10 percent higher.

But for many utilities, conservation success exposed a financial vulnerability. Because most of their revenue – 80 percent or more, on average – came from water sales, a sudden drop caused the balance sheet to tilt dangerously toward the red. Less water sold is less money earned. Relying so heavily on an income stream that is at odds with the zeitgeist and varies with the weather required a rebalancing act.

To stabilize revenues, several utilities in Circle of Blue's survey are putting more of their rate increases into fixed monthly charges – fees paid regardless of how much water is used. Austin, Fort Worth, and Tucson are three examples. This increase in fixed fees means that even those who use water sparingly are paying more.

As fits a conservative industry, utilities are making these shifts slowly. Fort Worth is in the middle of a five-year plan to increase the share of its revenue that comes from fixed fees, from 17 percent to 25 percent.

Divergent Pressures

In Focus: Fresno, California

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Though a handful of utilities are changing the balance between fixed and variable revenue, many are not, said Shadi Eskaf, a researcher at the University of North Carolina's Environmental Finance Center. It is difficult to generalize about a country with many thousands of utilities with different financial pressures in diverse climate zones, he told Circle of Blue.

"The trends are divergent," Eskaf explained. "There are a small number of utilities that catch on to the need to increase fixed revenue. But actually more are increasing the variable portion of the bill."

The decision about which course to take depends on local circumstances. If water scarcity is the greater concern, then a utility might use rate increases to clamp down on demand.

The largest city in the San Joaquin Valley is transforming its water system, at a significant cost.

Fresno, a farm hub of 505,000 people, is moving from a system reliant on groundwater to a river-fed supply. Doing so requires a $US 1.1 billion investment over 10 years, said Martin Querin, water division manager.

After five years without an increase, the Fresno city council voted 5 to 2 last August to double rates by 2017. The revenue will provide the capital for a new water treatment plant, an expansion of an existing plant, and new large-diameter water mains to replumb the grid.

The transition is necessary, Querin said, because the old system was failing.

"Groundwater beneath the city lowered 80 feet over the last 100 years," Querin told Circle of Blue. "That caused our energy costs to skyrocket and we were having to constantly construct new wells, which became more difficult as the city filled in. We're actually now having to buy homes and demolish homes to construct new well sites."

As recently as 2005, Fresno sourced 100 percent of its water from aquifers. Once built, the new facilities will use water from the Kings River and from the federal Central Valley Project canals for 80 percent of the city's demand in a wet or average year, giving the aquifer a chance to revive.

That is the case in San Diego, which both raised rates and changed its rate structure last year. The entire rate increase was necessary to pay for rising wholesale water costs in Southern California. And to encourage water thrift, the department decreased its fixed fee while approving higher charges for high-volume users.

"We added a price tier at the high end to help people understand that if you use a lot of water [you will pay more]," Kurt Kidman, department spokesman, told Circle of Blue. "We live in a desert, and it would be good to conserve."

Scarcity is the driving factor now, but as household faucets flow with less force, San Diego, like its dry-climate brethren in Arizona and Texas, may find itself in need of a rate makeover. And that would signal a conservation success story.

Circle of Blue gathered water rate information from the web site of each city's water utility or from phone calls or emails to the utilities. Prices are based on single-family residential rates and are current as of April 1, 2014. Rates include fixed fees, volumetric fees, and surcharges. Average monthly prices for cities with seasonal rates were calculated using seasonal weighting. The fixed fees cited in the article are for 5/8 inch meters, the most common size for residential connections.

Brett Walton *is a Seattle-based reporter for Circle of Blue. He writes our Federal Water Tap, a weekly breakdown of U.S. policy. Interests: Southwest, Pacific Northwest, Pricing, Infrastructure.*

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TAGS: Fort Worth, Tucson, Water infrastructure, Water pricing, Water Rates

This entry was posted on Wednesday, May 7th, 2014 at 6:00 am and is filed under Business, Economics, Feature Stories, U.S. Pricing, U.S. Water, Water News, Water Pricing. You can follow any responses to this entry through the RSS 2.0 feed. You can leave a response, or trackback from your own site.

19 Comments

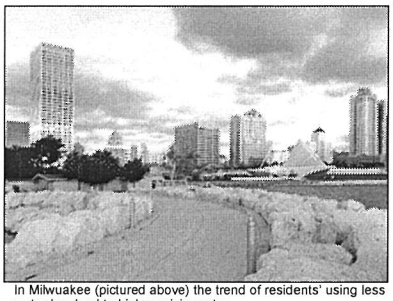
Christina Herman May 8, 2014 at 10:19 am

Thanks – this is interesting information. Have you looked at whether there is a difference in how public utilities and private water companies are structuring their pricing?

The Price of Water: A Comparison of Water Rates, Usage in 30 U.S. Cities

MONDAY, 26 APRIL 2010 19:22

Across the country there is wide variation in use and price for water consumption in major urban areas, with residential rates being lowest in the Great Lakes region, according to a Circle of Blue survey.



In Milwuakee (pictured above) the trend of residents' using less water has lead to higher pricing rates.

By Brett Walton
Circle of Blue

A first of its kind survey of residential water use and prices in 30 metropolitan regions in the United States has found that some cities in rain-scarce regions have the lowest residential water rates and the highest level of water use. A family of four using 100 gallons per person each day will pay on average $34.29 a month in Phoenix compared to $65.47 for the same amount in Boston.

The survey, conducted by Circle of Blue over the last several months, also found that average daily residential water use ranged from a low of 41 gallons per person in Boston to a high of 211 gallons per person in Fresno, Calif.

The Circle of Blue survey includes data on water rates and water usage from the 20 largest U.S. cities, according to the 2000 Census, and ten regionally representative cities to gain a broad view of urban water pricing. The survey comes as municipal water departments and their customers across the country contend with the ironic and unintended consequence of the economic recession and water conservation. In most major cities water use is declining while rates charged to residential customers are rising.

The effect of the crossing trends is less severe in Chicago, Detroit and Milwaukee, where municipal water is supplied by the lakes and prices range from $24.12 to $28.36.

UPDATE: 2014 Water Prices

Water Prices Increase 6 Percent in 30 Major U.S. Cities; 33 Percent Rise Since 2010

"The reason why rates are so low in the Great Lakes region is proximity to abundant water," said Nick Schroeck, executive director of the Great Lakes Environmental Law Center in Detroit. "Moving water takes an extraordinary amount of energy. Energy costs are higher in arid regions where water has to be brought from far away. For us, you look at the larger cities, and they are right on one of the lakes. It's easy to get water to the population centers."

Even though prices are comparatively low, rates in the Great Lakes region have increased in recent years because of declining consumption. Most of that decrease is attributed to the loss of industrial activity, though shrinking urban populations and personal frugality are also factors.

Falling demand is a concern for Carrie Lewis, the superintendent of Milwaukee Water Works, because the utility's revenue comes from water sales, so less use means higher rates. In an interview, Lewis described a downward-sloping graph showing the decrease in water sales over the last three decades. Sales in Milwaukee dropped 41 percent from 1976 to 2008, primarily because water-intensive breweries and tanneries went out of business or left town.

"For more than 20 years industry has been moving south looking for cheaper labor. I'm hoping that now they'll start coming back looking for cheaper water."

-Richard Meeusen, WAVE Founder

California Drought Tweets

LiveLoveKarmin RT @karminmusic: The Farm got a @TurfTerminators makeover. It's a drought friendly oasis over here!! #turfsup #CAdrought
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lisavalles RT @SFGate: See dramatic before-and-after photos of California's historic 3-year drought. http://t.co/ntTsXCfhs1 #CADrought http://t.co/2oc...
18m • reply • retweet • favorite

ESPP RT @ddimick: Emergency water released to Klamath, Trinity Rivers after deadly fish parasite detected http://t.co/DD6AsSLVBH (via @eurekaTS)...
23m • reply • retweet • favorite

Adelheid16 RT @Weather_West: Models strongly suggesting a rather extreme, statewide heatwave in 7-10 days.#cawx #cafire #cadrought #cawater http://t.c...
1h • reply • retweet • favorite

ddimick Emergency water released to Klamath, Trinity Rivers after deadly fish parasite detected http://t.co/DD6AsSLVBH (via @eurekaTS) #cadrought
2h • reply • retweet • favorite

StacyDVanDeveer RT @ddimick: California Governor signs #groundwater legislation http://t.co/aiOkZTYNqA via @sacbee #aquifers #cawater #cadrought
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ddimick California Governor signs #groundwater legislation http://t.co/aiOkZTYNqA via @sacbee #aquifers #cawater #cadrought
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yesi79 RT @SFGate: See dramatic before-and-after photos of California's historic 3-year drought. http://t.co/ntTsXCfhs1 #CADrought http://t.co/2oc...
3h • reply • retweet • favorite

briannajegan I picked at parts that focus on California to highlight the severity the #CAdrought poses with our terrain & our water usage.
5h • reply • retweet • favorite

oceanshaman Mt @wallacejnichols:City of Modesto, CA bears a very #BlueMind motto: "Water, Wealth, Contentment, Health" http://t.co/Cni7ip3YkX #CAdrought

"That's a frightening graph if you make money selling water," Lewis said.

As a result, water conservation is not a big part of Milwaukee's agenda. Milwaukee Water Works (MWW) rejected a suggestion from the state public service commission to institute a block tariff rate structure, which would have raised prices for high-volume users to encourage using less water. The city is actually looking to increase water use because of its spare infrastructure capacity and ample supply.

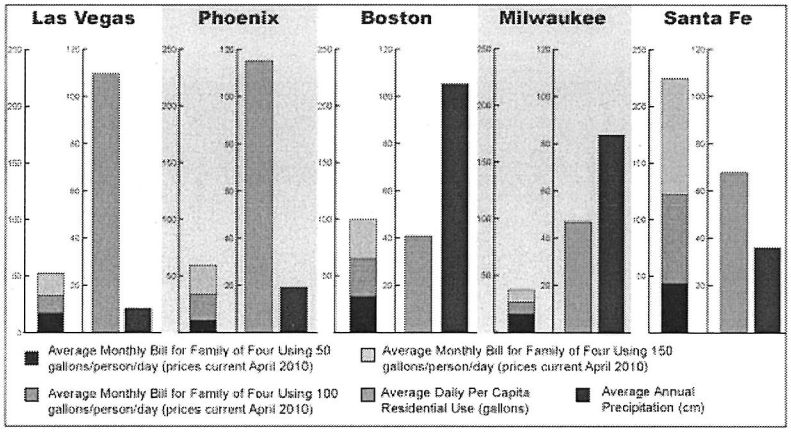
"MWW could double its customer base without having to build new facilities," Lewis said. "There's no capital cost to avoid by increasing water use."

To that end, some Milwaukee businesses want the city to fish for industry with the lure of cheap water, according to an article from the American Water Works Association. Business owner Richard Meeusen started the group Water Attracting Valued Employers (WAVE) to lobby for a discounted industrial water rate.

"For more than 20 years industry has been moving south looking for cheaper labor, I'm hoping that now they'll start coming back looking for cheaper water," Meeusen told the AWWA.

Water demand in Milwaukee is similar to urban areas across the United States. Per capita water use is dropping in nearly every city surveyed, and total water use has fallen or remains steady in some cities despite population bulges.

Infographic: Water Use Comparison of 5 U.S. Cities



Graphic by Trevor Seela

This comparison shows that due to utility pricing structures certain urban areas, such as Boston, which has high rainfall and low consumption, can have pay higher water rates than in cities like Phoenix, where rainfall is low and consumption is high.

Water in the Southwest

Declines in demand are especially notable in arid cities of the Southwest and southern California. These regions binged in the 20th century on relatively abundant supplies brought from afar, using water to leverage growth. But as populations have disproportionately grown in comparison to the available supply, cities are cutting back to avoid building costly desalination plants, investing in diversion schemes or buying expensive water through market exchanges.

Per capita use in Santa Fe has dropped 42 percent since 1995 and total use is down nearly 30 percent, while Phoenix consumes the same amount of water now as it did 10 years ago despite adding roughly 400,000 residents. Figures released two weeks ago from the Los Angeles Department of Water and Power show that it supplied less water in February than any time in the last three decades, according to the Los Angeles Times.

Las Vegas has significantly cut outdoor water use by prohibiting front lawns for new houses since 2003. As a result, water deliveries from the Southern Nevada Water Authority, which supplies Las Vegas, dropped by 20 billion gallons from 2002 to 2003–enough water to cover the annual residential needs of a city of 150,000.

People living in the Southwest are often excoriated for their water use, but critics neglect the necessity for water, argues Stephanie Duer, water conservation program coordinator for Salt Lake City Public Utilities.

"I never hear people complain about Alaska or Connecticut using too much heating oil," Duer said in an interview. "It seems to me that since we're in a dry region we will be using more water."

Water use needs to be weighed against the other benefits it provides, Duer added. "I hear people say 'Why don't you plant native species' Well, We don't have a single shade tree that

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would grow at this elevation. Do you want to live in a city without trees? We want to keep the urban forest for quality of life and keeping shade helps to reduce energy use in the summer. We're working hard to find that balance in water use."

> *"Water use is generally not publicized much outside of droughts. Water sort of has a technical side that often doesn't get communicated well to the public."*
>
> *-Drew Beckwith*

Though water supplies are precious in these places, the price of water for residential customers is relatively cheap. A family of four using 100 gallons per person each day will pay on average $32.93 a month in Las Vegas compared to $72.95 for the same amount in Atlanta, which has more than ten times the amount of average annual rainfall as Las Vegas, according to National Weather Service statistics. While many factors contribute to water pricing, such as the energy used to pump water, the price of chemicals for treatment costs, recent infrastructure projects and operations efficiency–the difference in several Western cities can partly be explained by government subsidy.

"In the West there was massive federal investment in major water infrastructure," said Heather Cooley, a researcher for the Pacific Institute's water program. "Those states and cities didn't have to pay the capital cost. California's Central Valley Project is an example of that. The capital cost not including interest still hasn't been paid, and that was built over 50 years ago. The subsidies create an artificial price."

Water delivered via the Central Valley Project, a federal initiative led by the Bureau of Reclamation, is primarily directed toward agriculture. The same federal support helped build the Central Arizona Project, a canal that connects water from the Colorado River to Phoenix, Tucson and other cities in three Arizona counties.

Residents of those cities who benefit from this lifeline channeled through the Sonoran Desert are paying only 45 percent of the project's $3.6 billion cost. The difference is a national burden.

The Central Arizona Project, Hoover Dam, California's State Water Project, Colorado's Big Thompson Project are all water supply diversions paid for in part by federal or state tax funds. But when new supply projects are financed by customers directly, higher water rates are the consequence.

Take Santa Fe, for example.

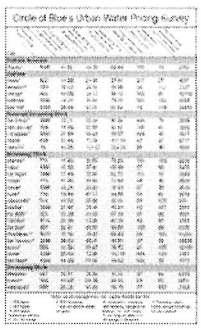
The city has the highest overall rates in the survey and the highest rates for high-volume users. Because water is scarce and current groundwater use is unsustainable, the city is building the $217 million Buckman Direct Diversion to tap water from the San Juan-Chama diversion. It is a non-federal project, and the $187 million after-grant cost is being jointly paid by the city and the county.

While Santa Fe's supply project meets current needs, high-growth areas typically levy a one-time connection fee on new development to place the burden on newcomers for acquiring anticipated supplies or building treatment. In Las Vegas, for example, residents buying new houses would pay $1,440 to the Las Vegas Valley Water District and $4,870 to the regional supplier, the Southern Nevada Water Authority.

"Most of the infrastructure is paid for by new customers," said Doug Bennett, SNWA's conservation manager. "There's not a lot of infrastructure dollars in the water rate."

Growth in Las Vegas has slowed in the last few years because of the economic crisis and the housing bubble implosion. Water utilities are not getting many connection fees—down to 1,139 in 2008 from a high of just over 24,000 in 2005. Slower expansion means the city does not have to worry about meeting constantly rising demand.

Full Survey Graphics



View the full survey data: SurveyData (JPG image), SurveyData (Adobe PDF)

"Instead of worrying about meeting next year's capacity, now there's plenty," said Matt Thorley, principal financial manager for LVVWD.

The Future of Water Prices

In many cities, residents lean on infrastructure investments made in the years following World War II. The strain shows. According to the Environmental Protection Agency, 240,000 water main breaks occur each year. Leaky pipes lose billions of dollars of treated water annually, and sewer overflows cause outbreaks of disease.

Last year the EPA estimated that $335 billion would be needed to fix the country's aging water supply system in the next few decades, according to the New York Times. But where that money will come from is unknown.

According to Jack Moss, an advisor to Aquafed, the international water industry association, cities have to decide whether to make improvements through taxes or tariffs. The problem is that neither government spending nor higher water bills gather much voting support.

Despite the hand wringing over prices, water in the U.S. remains cheap. In most cities surveyed by Circle of Blue a family of four can buy enough water for its indoor needs–50 gallons per person per day for washing, drinking, cooking and flushing–for less than $25 per month, which is a relatively small portion of a family budget.

"Water is very reasonably priced," said Doug Bennett, conservation manager for the Southern Nevada Water Authority. "[As a result], it's not a major expense on people's radar screen."

Meanwhile when prices come up for discussion there are always social justice concerns about access for the poor. However, with a few exceptions such as Detroit, most cities have adequate financial assistance programs to ensure in-home access for all.

One barrier to better water management is communication between utilities and customers–a common chorus amongst water rate researchers interviewed for this article.

"Water use is generally not publicized much outside of droughts," said Drew Beckwith, a water specialist with Western Resource Advocates. "Water sort of has a technical side that often doesn't get communicated well to the public."

Another problem may be habit. Water has generally been so cheap for so long, that people have become anchored to the past price, not realizing that sustainability costs money to achieve.

Prices will undoubtedly rise in the near future. But the question of whether the increase comes via higher taxes or tariffs remains because bearing the price of doing nothing would be much worse.

Note: Water rate information was gathered from the website of each city's water utility and based on single-family residential rates. It is current as of April 1. Average prices for cities with seasonal rates were calculated using seasonal weighting. For water use information, Circle of Blue asked water departments directly the daily per capita usage for single- and multi-family residential customers.

Brett Walton is a reporter for Circle of Blue. This is the second part of his investigation on U.S. urban water rates–read the first installment here as well as a profile on water pricing issues in Detroit here. Reach Walton at brett@circleofblue.org. All graphics were created by Trevor Seela. Reach Seela at trevor@circleofblue.org.

TAGS: Brett Walton Circle, Burlington Northern Santa Fe Corporation, California, Carrie Lewis, Desalination, Detroit, Energy, Environment, Great Lakes, Las Vegas, Las Vegas Valley Water District, Milwaukee, peak water, Phoenix, Richard Meeusen, southern nevada water authority, Stephanie Duer, Tap Water, United States, USD, visualizations, water, Water Supply, Water supply and sanitation in the United States

This entry was posted on Monday, April 26th, 2010 at 7:22 pm and is filed under Agriculture, Business, California Drought, Cooperation, Economics, Environment, Feature Stories, North America, Policy + Politics, Reports & Studies, Research + Reports, Solutions, U.S. Infrastructure, U.S. Pricing, U.S. Water, Water News, Water Policy, Water Pricing. You can follow any responses to this entry through the RSS 2.0 feed. You can leave a response, or trackback from your own site.

43 Comments

david zetland April 28, 2010 at 7:09 pm

Great post Bret! I am not sure if you put enough emphasis on connection between price and cost of service NOT scarcity. "Though water supplies are precious in these places, the price of water for residential customers is relatively cheap." is because infrastructure is

Circle of Blue's Urban Water Pricing Survey

City	Service Area Population (1000s)	Average Monthly Bill for Family of Four Using 50 gallons/person/day	Average Monthly Bill for Family of Four Using 100 gallons/person/day	Average Monthly Bill for Family of Four Using 150 gallons/person/day	Average Daily Per Capita Residential Use (gallons)	Average Annual Precipitation (cm) data from U of Utah	Population Density (persons/square mile); data from 2000 census
Uniform Seasonal							
Phoenix[5]	1600	11.02	34.29	59.84	115	19	2782
Uniform							
Fresno[1]	122	15.99	21.95	27.91	211	27	4097
Memphis[2, 8]	583	16.02	26.50	36.98	96	132	2327
Chicago[4]	N/A	16.08	24.12	36.18	N/A	91	12750
Baltimore[4]	1800	19.25	39.50	79.00	N/A	104	8058
New York[2]	8360	20.88	41.76	62.64	78	120	26402
Seasonal Increasing Block							
San Antonio[7]	1000	12.21	19.64	32.94	N/A	79	2808
Salt Lake City[2]	380	14.48	22.89	32.67	180	41	1666
Los Angeles[7]	4000	27.18	58.49	99.07	N/A	30	7877
Seattle[2]	630	42.15	72.78	117.33	52	97	6717
Santa Fe[2]	78	43.28	121.42	224.26	68	36	1666
Increasing Block							
Charlotte[10]	774	14.16	35.68	78.24	N/A	109	2232
Dallas[1]	1306	16.16	37.81	65.30	57	86	3470
Las Vegas[2]	2000	17.18	32.93	52.72	110	10	2849
Tucson[2]	775	17.46	33.04	72.64	98	30	2500
Denver[5]	1300	18.24	33.01	58.33	87	39	3616
Austin[1]	796	19.18	47.17	94.30	94	81	2610
Jacksonville[1]	614	19.54	30.04	40.55	84	130	970
Houston[3]	2060	21.97	39.49	71.17	72	117	3371
Fort Worth[1]	625	22.20	43.48	67.24	81	86	1827
Columbus[1]	1115	23.95	43.06	62.18	53	97	3383
San Jose[2]	107	24.51	40.93	59.09	107	48	5118
Philadelphia[1, 8]	1672	27.34	49.03	68.82	84	105	11234
San Francisco[1]	2400	30.63	58.47	86.31	57	50	16636
Boston[1]	609	31.84	65.47	99.72	41	105	12165
Atlanta[7]	1200	33.83	72.95	112.07	N/A	129	3161
San Diego[9]	1300	44.05	70.95	99.52	N/A	25	3772
Decreasing Block							
Milwaukee[1]	661	16.11	26.83	37.55	47	84	6214
Detroit[1, 8]	900	16.22	28.36	40.55	63	83	6855
Indianapolis[1]	800	25.24	41.26	56.79	77	102	2163

Notes about Average Daily Per Capita Residential Use

Typical monthly water and wastewater bills for residential customers at 7,500 gallons billable water usage for the 50 largest U.S. cities.
Related: See an interactive map comparing Phoenix and Arizona to other metro areas and states.

Search by city: Miami

Records 1 through 1 of 1 are shown

City	Water	Rank for water	Sewage	Rank for sewage	Combined	Combined rank
Miami	17.03	3	32.59	15	49.62	8

City

Figure1

Figure1

Figure1

Figure1

Figure1

Figure1

Figure1

Ranked 8 out of 50 Good-

Close

Source: Black & Veatch 2012/2013 Report

Notes

(a) Water charge includes a fixed based Strategy Implementation fee and commodity based Sustainable Water Supply Program and State Water Conservation fees.
(b) Water rates for commercial and industrial uses weighted average of peak and off-peak rates.
(c) Water and sewer minimum metered charge includes a usage allowance based on meter size.
(d) Sewer charge is based on 89% of water bill.
(e) Water rates for commercial and industrial uses weighted seasonal rates.
(f) Sewer charge includes a fixed Clean River Fund fee.
(g) Water rates for commercial and industrial uses weighted winter and summer rates.
(h) Sewer commercial and industrial charge includes industrial waste control charge.
(i) Water and sewer minimum monthly charge includes a usage allowance a set CCF regardless of meter size. Water charge includes a fixed Water Supply Replacement Charge.
(j) Sewer residential charge capped at 15 CCF per month.
(k) Water residential charge based on metered accounts rates. Traditionally rate was based on square footage. Water commercial rate based on medium strength and industrial rate based on low strength.
(l) Water and sewer minimum residential metered charge includes a usage allowance based on meter size.
(m) Water and sewer charge includes commodity based Environmental Charge.
(n) Water charge includes commodity based SNWA Volume Charge, fixed based SNWA Infrastructure Charge and SNWA Reliability Surcharge. Sewer charge based on equivalent residential units. Rate includes CWC rebate.
(o) Sewer charge includes Los Angeles County Sanitation District treatment charge.
(p) Water rates are based on location, lot size, and temparture. Rates adjusted quartely.