

**THE FEDERAL ROLE IN KEEPING WATER AND
WASTEWATER INFRASTRUCTURE AFFORDABLE**

HEARING
BEFORE THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED FOURTEENTH CONGRESS
SECOND SESSION

APRIL 7, 2016

Printed for the use of the Committee on Environment and Public Works



Available via the World Wide Web: <http://www.gpo.gov/fdsys>

U.S. GOVERNMENT PUBLISHING OFFICE

20-943 PDF

WASHINGTON : 2016

For sale by the Superintendent of Documents, U.S. Government Publishing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512-1800; DC area (202) 512-1800
Fax: (202) 512-2104 Mail: Stop IDCC, Washington, DC 20402-0001

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ONE HUNDRED FOURTEENTH CONGRESS
SECOND SESSION

JAMES M. INHOFE, Oklahoma, *Chairman*

DAVID VITTER, Louisiana	BARBARA BOXER, California
JOHN BARRASSO, Wyoming	THOMAS R. CARPER, Delaware
SHELLEY MOORE CAPITO, West Virginia	BENJAMIN L. CARDIN, Maryland
MIKE CRAPO, Idaho	BERNARD SANDERS, Vermont
JOHN BOOZMAN, Arkansas	SHELDON WHITEHOUSE, Rhode Island
JEFF SESSIONS, Alabama	JEFF MERKLEY, Oregon
ROGER WICKER, Mississippi	KIRSTEN GILLIBRAND, New York
DEB FISCHER, Nebraska	CORY A. BOOKER, New Jersey
MIKE ROUNDS, South Dakota	EDWARD J. MARKEY, Massachusetts
DAN SULLIVAN, Alaska	

RYAN JACKSON, *Majority Staff Director*
BETTINA POIRIER, *Democratic Staff Director*

C O N T E N T S

	Page
APRIL 7, 2016	
OPENING STATEMENTS	
Inhofe, Hon. James M., U.S. Senator from the State of Oklahoma	1
Boxer, Hon. Barbara, U.S. Senator from the State of California	4
WITNESSES	
Berger, David, Mayor, Lima, Ohio, on behalf of the U.S. Conference of Mayors	6
Prepared statement	8
Chow, Rudolph S., P.E., Director, Department of Public Works, Baltimore, Maryland, on behalf of the Water Environment Federation	85
Prepared statement	87
Moore, Robert, General Manager, Marshall County Water Corporation, Madill, Oklahoma, on behalf of the National Rural Water Association	105
Prepared statement	107
Arndt, Aurel, former Executive Officer, Lehigh County Authority, Pennsylvania, on behalf of the American Water Works Association	136
Prepared statement	139
Gysel, Joe, President, Epcor Water (USA), Inc., Phoenix, Arizona, on behalf of the National Association of Water Companies	145
Prepared statement	147
Olson, Erik, Director, Health Program, Natural Resources Defense Council	159
Prepared statement	161
ADDITIONAL MATERIAL	
Statement of the Associated General Contractors of America	198
Letter to Senators Inhofe and Boxer from the Association of Metropolitan Water Agencies, April 7, 2016	203
Statement of the National Association of Clean Water Agencies	207
Testimony of Commissioner Todd Portune, Board of County Commissioners, Hamilton County, Ohio, on behalf of the "Perfect Storm" Communities Coalition	211
Statement by the Unitarian Universalist Service Committee	217

THE FEDERAL ROLE IN KEEPING WATER AND WASTEWATER INFRASTRUCTURE AFFORD- ABLE

THURSDAY, APRIL 7, 2016

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 10:01 a.m. in room 406, Dirksen Senate Office Building, Hon. James M. Inhofe (chairman of the committee) presiding.

Present: Senators Inhofe, Boxer, Barrasso, Capito, Crapo, Boozman, Wicker, Fischer, Sullivan, Carper, Cardin, Whitehouse, Gillibrand, Booker, and Markey.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. Well, the EPA has identified \$384 billion in drinking water needs and \$271 billion in wastewater needs over the next 20 years based on capital improvement plans developed by local utilities. According to the U.S. Conference of Mayors, which I really enjoyed visiting with the U.S. Conference of Mayors, and I am glad to have you here to represent them. That was, what, 3 weeks ago or so. Anyway, it is your meeting. It is nice to see some of the people are still in the U.S. Conference of Mayors that were there when I was a Mayor, a long time ago.

But according to the U.S. Conference of Mayors, through 2013, local governments have invested over \$2 trillion in water and sewer infrastructure and continue to spend \$17 billion a year. Now, these local expenditures represent over 98 percent, 98 percent of the cost of providing services and investing in infrastructure. These costs are paid by you and by me and by our ratepayers, and as a general rule this is an appropriate thing to have users pay.

But water and wastewater is funded by the taxpayers who receive these services. That is fine. Unfortunately, however, we are no longer just paying for services; we are also paying for unfunded Federal mandates, as I mentioned. And as Federal mandates pile up, the bills paid by individual homeowners get bigger and are becoming unaffordable for many Americans.

Federal mandates also force local communities to change their priorities. In the water and sewer world, this pushes basic repair and replacement to the bottom of the list. When we force communities to chase mandates that may have very small incremental health and environmental benefits, we risk losing both basic public

health protections and the economic foundations of our communities.

There is a Federal interest in maintaining these health protections and economic benefits, and there are a variety of ways we can help. I want to list four here.

First, we have to continue to support the clean water and drinking water State revolving funds that provide low cost loans for infrastructure improvements. The President's fiscal year 2017 budget proposed cutting the clean water fund by \$414 million and providing a \$197 million increase in the drinking water fund. Now, this is robbing Peter to pay Paul, so it really doesn't make that difference; the net is a loss.

Second, we have to find new ways to increase investment in infrastructure. In 2014, we took action by adding the Water Infrastructure Financing and Innovation Act, WIFIA, to the WRDA bill. EPA is finally requesting funding to startup the WIFIA program, although they are only requesting \$15 million. In our proposal to help Flint and other communities around the country, we are planning to provide around \$70 million, not \$15 million, but \$70 million to capitalize WIFIA.

Third, we need to look for ways to encourage even more private investment in water and wastewater infrastructure. WIFIA loans provide only 49 percent of the project costs, so where does the funding for the other 51 percent? So it is a 50-50 thing. If we can't be raised through municipal bonds, where is it going to come from?

Fourth, we need to increase support for small rural communities who simply can't afford the investment that EPA wants them to make and need technical support to keep up with all the Federal mandates. Mr. Robert Moore of Madill, Oklahoma, will offer testimony on this.

Finally, we have to make sure that Federal mandates don't force communities to spend hundreds of millions of dollars for projects that may have little impact on water quality while delaying other critical programs. The U.S. Conference of Mayors has spent a lot of time trying to work with the EPA on this issue. Despite the EPA's rhetoric on integrated planning and flexibility, communities are still being threatened with penalties even as they are trying to negotiate with the EPA.

I strongly believe that investment in infrastructure expands our economy. The U.S. Conference of Mayors reports that each public dollar invested in water infrastructure increases private long-term gross domestic product by \$6.35. To date, the Joint Tax Committee has not been persuaded by these numbers. The Joint Tax Committee assumes that these programs increase the use of tax-exempt bonds, creating a loss to the Treasury that we need to offset.

This is exactly a barrier to increasing funding authority for the State revolving funds and loan programs, and WIFIA also. The Water Environment Federation, represented here today, has conducted a new study to measure the increases in personal and corporate income taxes paid into the U.S. Treasury attributable to water infrastructure investment. In other words, more money is coming into the Treasury as a result of this type of investment.

This hearing is laying the foundation for legislation on water and wastewater infrastructure, and I hope to be ready to move it at the

same time our Water Resources Development Act, or WRDA, is taking place.

Senator Boxer.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE,
U.S. SENATOR FROM THE STATE OF OKLAHOMA

EPA has identified \$384 billion in drinking water needs and \$271 billion in wastewater needs over the next 20 years based on capital improvement plans developed by local utilities. According to the U.S. Conference of Mayors, through 2013 local governments have invested over \$2 trillion in water and sewer infrastructure, including \$117 billion in 2013 alone.

These local expenditures represent over 98 percent of the cost of providing services and investing in infrastructure. These costs are paid by you, me and our neighbors when we pay our water and sewer bills.

As a general rule, this is appropriate. Water and wastewater are funded by the ratepayers who receive these services. Unfortunately, however, we are no longer just paying for services. We also are paying for unfunded Federal mandates. And as Federal mandates pile up the bills paid by individual homeowners get bigger and are becoming unaffordable for many Americans.

Federal mandates also force local communities to change their priorities. In the water and sewer world, this pushes basic repair and replacement to the bottom of the list. When we force communities to chase mandates that may have very small incremental health or environmental benefits, we risk losing both basic public health protections and the economic foundation of our communities.

There is a Federal interest in maintaining these health protections and economic benefits, and there are a variety of ways we can help.

First, we have to continue to support the clean water and drinking water State revolving loan funds that provide low cost loans for infrastructure improvements. The President's fiscal year 2017 budget proposed cutting the clean water fund by \$414 million and provided a \$197 million increase in the drinking water fund.

Second, we have to find new ways to increase investment in infrastructure. In 2014 we took action by adding the Water Infrastructure Financing and Innovation Act to the WRDA bill. EPA is finally requesting funding to start up the WIFIA program, although they are only requesting \$15 million. In our proposal to help Flint and other communities around the country, we are planning to provide \$70 million to capitalize WIFIA.

Third, we need to look for ways to encourage even more private investment in water and wastewater infrastructure. WIFIA loans provide only 49 percent of project costs, so where does the funding come from if the remaining 51 percent cannot be raised through municipal bonds?

Fourth, we need increased support for small rural communities who simply can't afford the investments that EPA wants them to make and need technical support to keep up with all the Federal mandates. Mr. Robert Moore of Madill, Oklahoma, will offer testimony on this.

Finally, we have to make sure that Federal mandates don't force communities to spend hundreds of millions of dollars for projects that may have little impact on water quality, while delaying other critical programs. The U.S. Conference of Mayors has spent a lot of time trying to work with EPA on this last issue. Despite EPA's rhetoric on integrated planning and flexibility, communities are still being threatened with penalties even as they are trying to negotiate with EPA.

I strongly believe that investment in infrastructure expands our economy. The U.S. Conference of Mayors reports that each public dollar invested in water infrastructure increases private long-term gross domestic product output by \$6.35. To date, the Joint Tax Committee has not been persuaded by these numbers. The Joint Tax Committee assumes that these programs increase the use of tax exempt bonds, creating a loss to the Treasury that we need to offset. This is actually a barrier to increasing funding authority for the SRF loan programs and WIFIA. So the Water Environment Federation has conducted a new study to measure the increases in personal and corporate income taxes paid into the U.S. Treasury attributable to water infrastructure investment.

This hearing is laying the foundation for legislation on water and wastewater infrastructure, which I hope to be ready to move at the same time as we move our Water Resources Development Act legislation later this month.

**OPENING STATEMENT OF HON. BARBARA BOXER,
U.S. SENATOR FROM THE STATE OF CALIFORNIA**

Senator BOXER. Thank you so much.

I am very pleased that we are having this hearing, and I think it is important to look at this issue of mandates, where the parties do have some significant differences.

To me, useless mandates are ridiculous. They make zero sense. But common sense mandates based on science are critical. For example, yesterday we had a hearing on nuclear power plants. We could say, let's not spend any money worrying about the safety, but then we would have more problems, like we had at Three Mile Island or God forbid, Fukushima. Well, we are not going to have that because we have a law that says we are going to set standards and regulate these power plants.

Now, Senator Inhofe and I may have a disagreement on how far that should go. That is fair. But the fact is we do something important for the American people, it is called protecting them, and that is critical. So as we discuss the Federal role in supporting our water infrastructure, safety should be prominent in our minds. Aging drinking water pipes and waste treatment systems are a nationwide problem, and the Society of Civil Engineers—and they are not Republicans or Democrats, they are everything—they give us a D, a D for our drinking water and wastewater infrastructure. It is unacceptable.

Now, it doesn't mean that throwing a ton of money at it is going to change it. We have to be very smart the way we do it, but we have to do it, and I believe it is a national problem. I don't think it is fair that in one city in the country, you know, our kids are getting poisoned water, and we have that, examples of that all over, including in my State, because we have had some disposal of dangerous lead. We have it in Mississippi in a certain part; we have it in Flint, Michigan; we have it in Ohio. It is not fair that the child born there, just by circumstances of their birth, has less of a right to clean water. So the American people have a right.

Now, these minimum standards also extend to, of course, our water infrastructure. I was so proud to join with my colleague, Senator Inhofe, in a rare moment of comity on the environment where we said there is too much lead in faucets and those facilities that deliver our water, and we changed that lead requirement based on science.

Now, millions of homes across America receive water from pipes that date to an era before scientists and public health officials understood the harm caused by lead exposure. I am so happy to see Eric Olson, who used to be on my staff, Senator. I don't know if you recall, but Eric is an expert in protecting kids from dangerous toxins, and we worked on these. And we know now, from the American Water Works Association, that 7 percent of homes, this is a new study, 7 percent of homes, that is 15 million to 22 million Americans, have lead service lines. Now, it doesn't mean that that lead is leaching, but some of it could be, and a lot of it could be in the future.

As parents in Flint know, there is no safe level of lead in children. It affects their brains, their nervous systems in the fetuses.

The children poisoned in Flint will be dealing with these harmful consequences all their lives. So we have a long way to go.

We also have cities across the U.S. with sewer systems that discharge raw, untreated sewage to waterways where our children swim. Despite enormous successes since the passage of the Clean Water Act, there is much more to do. So we know the tragedy in Flint was due in part to the decision to switch to the polluted and highly corrosive Flint River as a source of drinking water, but the Flint River is not alone. Just last month EPA released a report showing nearly half of U.S. waterways are in poor condition, and one in four have levels of bacteria that fail to meet human health standards.

Now, I know some testifying today have expressed concerns about the affordability of meeting the standards for protecting their own people. I understand the concerns. I was a county supervisor. Like many of us, I started there, and I dealt with those mandates.

But what we have to do is hear you. If you think something is totally useless and won't have a benefit, tell us. But if it is going to have a benefit, we have to work together and make it easier for you to protect your people. You want to do that as much as any one of us.

So we need increased investment. It is very, very clear. We should fund existing financing programs such as the State Revolving Fund. And I think there is broad agreement on that one, at least there used to be. We should update these programs to target those investments where it is needed most, which you will help us with. When we invest in water infrastructure, we support jobs and the economy. The Clean Water Council estimates that \$1 billion invested in water and wastewater infrastructure can create up to 27,000 jobs, and jobs are important to all of us.

Mr. Chairman, I will finish in 15 seconds.

So I believe there is broad bipartisan support for the need for Federal investment in water infrastructure, and the next WRDA, which I am very excited about working with my colleagues on both sides, we have an opportunity to address our aging drinking water infrastructure and our wastewater infrastructure. The health and safety of our children and families depend on a modern infrastructure that provides safe drinking water and assures clean rivers and streams.

I certainly looking forward to our panel.

And Mr. Chairman, can I put my full statement in the record? Senator INHOFE. Sure. Without objection.

[The prepared statement of Senator Boxer was not received at time of print.]

Senator INHOFE. Thank you, Senator Boxer.

Now, what we are going to do, we normally don't have this many people on a panel, so we are going to be trying to keep within the 5-minute limit that we have. We will start with David Berger, who is the Mayor of the city of Lima, Ohio.

Mr. Berger.

**STATEMENT OF DAVID BERGER, MAYOR, LIMA, OHIO,
ON BEHALF OF THE U.S. CONFERENCE OF MAYORS**

Mr. BERGER. Well, good morning, Chairman Inhofe and Ranking Member Boxer and members of the committee. Thank you for the invitation to give mine and the Conference of Mayors' perspective on the Nation's water and wastewater issues.

My name is David Berger, and I am in my 27th year as the Mayor of Lima, Ohio. I spent nearly 20 years in negotiations with Ohio EPA and U.S. EPA over long-term control plans and also participated in over 5 years of discussions with EPA concerning integrated planning, green infrastructure, and affordability. This, I believe, makes me a reluctant expert in the field.

Local government, not the Federal Government, is where the job of providing water and wastewater services gets done and is paid for. Local government has invested over \$2 trillion in water and sewer infrastructure and services since the early 1970s, and \$117 billion in 2013 alone.

At the Conference we have unanimously adopted policies dealing with this issue. One is a simple message to the Congress and the Administration: give us money or give us relief. The Mayors of this Nation would be happy to implement any rule or regulation you or EPA comes up with, but you have to provide at least half the resources. And I am talking real money, not authorization levels that never get funded. I am talking about grants, not loans that must be paid back.

The cost for unfunded Federal mandates are ultimately paid for by our customers, our citizens, many of whom are residential households. And the cumulative costs of these mandates have now reached or exceeded thresholds of clear economic burden on low- and fixed-income households. Let me give you a few examples.

In Lima, more than a third of my residents live under the poverty threshold. EPA demanded that I spend \$150 million to fix combined sewer overflows for a community which has only 38,000 residents. The projected average annual sewer bill will be over \$870 a year. This means that 46 percent of Lima households will be spending more than 4 percent of their household incomes on just their sewer bills, with nearly 14 percent of my residents spending nearly 9 percent of their household income on their sewer bill.

In the Conference of Mayors study of just 33 California cities, 24 cities report that more than 10 percent of their households are now paying more than 4.5 percent of their income on water, sewer, and flood control costs, with 10 of those cities having more than 20 percent of their households spending 4.5 percent.

Please keep in mind that many of these cities have not yet factored in the cost for TMDLs, which now are estimated to put just the cities in Los Angeles County up to \$140 billion. One county—\$140 billion.

How did we get here? When the Clean Water Act and the Safe Drinking Water Act were first established, Congress set lofty aspirational goals. Congress put skin in the game and provided grants to local communities, and that investment fostered a reasonable attitude about how to accomplish those goals together.

That is not the case now. Congress retreated from the grant program primarily because of the high costs. But the implementation

of the water policies by successive administrations did not retreat with Congress's retreat from funding. Quite the contrary, the administrations transformed the aspirational goals into unfunded mandates involving hundreds of billions of dollars of costs imposed on local communities. Let me give you some examples.

In CSO consent decrees, cities are held by EPA policy to an arbitrary number of no more than four overflows per year. However, there is no science substantiating the need for that. So in some cases cities are allowed 14, while in other cases zero overflows. Engineering a system that could handle any type of storm event with zero overflows is almost impossible, needlessly expensive, and wasteful of local resources.

In my own city, I have a river that is labeled as fishable and swimmable. That river dries up in the summer to only 4-inch-deep pools of stagnant water. I can safely say that no one is ever going to swim in that river. Yet, we are held to that standard of compliance.

Bottom line, EPA is dictating our priorities and where our taxpayer money is spent. I do not want to give any impression that Mayors do not care about clean water. We do. We care passionately, and our actions and investments speak loudly. But we need Federal and State government to once again be our partners. We fundamentally believe that change must take place, and we are asking Congress to act on the following: codify integrated planning, define affordability, develop reasonable and sustainable goals, allow for additional time, and establish a review process to appeal decisions made at the regional level.

I thank you for the opportunity to speak here today.

[The prepared statement of Mr. Berger follows:]



**Testimony of Mayor David Berger
City of Lima, Ohio
On Behalf of The U.S. Conference of Mayors**

**Senate Environment and
Public Works Committee**

April 7, 2016

Written Testimony of Mayor Dave Berger
Senate Environment and Public Works Committee

Introductions

Good morning Chairman Inhofe, Ranking Member Boxer, and members of the Committee. I wish to thank you for this invitation to give mine and the Conference of Mayors' perspective on water and wastewater issues in the United States.

I also want to thank this committee for its bipartisan work on trying to provide some relief to Flint, Michigan. The Conference of Mayors sent you a bipartisan letter, signed by over 170 Mayors, asking Congress and the Administration to provide aid to the City of Flint. On behalf of myself and my fellow Mayors, I hope you can succeed in this important and critical endeavor.

My name is David Berger and I am in my 27th year serving as the Mayor of Lima, Ohio. I also spent nearly 20 years in negotiations with Ohio EPA and USEPA over Long Term Control Plans to solve combined and sanitary sewer overflow problems. As Vice-Chair for Water and as a member of the Conference's Water Council, I have participated in over 5 years of discussions with EPA Headquarters on the issues of Integrated Planning, green infrastructure and affordability. So a significant portion of my professional and elected life over the past quarter century has been spent on this and related matters. I would guess this makes me a reluctant expert in this field.

And my message to you is this – we are on a dangerously unsustainable path when it comes to providing water and wastewater services in an affordable manner.

- Local governments are stuck on an unsustainable financial treadmill when it comes to providing water and wastewater services; decisions made by Congress and the Administration to eliminate or reduce financial assistance without restricting costly mandates has placed a severe financial burden on our nation's cities and our citizens.
- The combination of federal water policy mandates that force aggressive, and in many cases unachievable, goals, coupled with the high cost of building, maintaining and operating the necessary infrastructure to provide core city services that comply with water laws is now beyond the means of half the populations of our cities. This is an artifact of federal policy that forces the lower half of the income strata to afford the same rates as the upper half of household incomes.
- The net effect of mandates and infrastructure investment (both capital and operations) puts cities in increasingly higher long term debt with accompanying rate hikes that has the effect of raising basic service rates to levels that are unaffordable to a growing percent of the 80% of Americans served by these systems.

USCM Policy – Give Us Money or Give Us Relief

Local government -- not the federal government -- is where the job of providing water and wastewater services gets done and is paid for. But here's the conundrum: Congress eliminated the CWA construction grants program in the late 1980s by stating that water and sewer are local concerns. The EPA, however, continued to issue an unending number of new and revised mandates for which cities were responsible. Illustrative of this attitude, in 2009 the then EPA Administrator told a meeting of mayors in Washington, DC that EPA staff advised that cities don't want to spend the money on improving water quality. But contrary to this it should be known that local government has invested over \$2 trillion in water and sewer infrastructure and services since the early 1970s. In 2013 Bureau of Census data report local government spent \$117 billion a year to provide services to 80% or more of American households. With this investment, local governments have substantially improved drinking water and water quality: reducing acute microbial infections by 90% or more; and, vastly increasing monitoring and treatment of metals and organic contaminants that are associated with long-term chronic diseases.

But, public water infrastructure and services are ultimately paid for by customers, many of which are residential households. The cumulative costs of unfunded federal mandates on public water infrastructure and services that are paid by customers have reached or exceeded thresholds of clear economic burden on low and fixed income households.

I put this question to the Chairman and Committee Members, all whom are elected and accountable like Mayors for how federal agencies interact with our local constituents -- how much of a community's resources should be dedicated to sustaining the health and environmental benefits we have achieved versus how much more should be directed by EPA to achieve national water goals if the federal government provides negligible financial assistance or regulatory flexibility?

At the Conference of Mayors, we have unanimously passed a number of policies dealing with this issue. One is a simple message to the Congress and the Administration, "Give us money, or give us relief." The Mayors of this nation would be happy to implement any rule or regulation you or EPA comes up with but you have to provide at least half of the money. And I'm talking real money, not authorization levels that never get funded. And ideally, I'm also talking about grants and not loans that need to eventually be paid back and only add to our debt burden.

For too long, local governments have had to deal with the heavy hand of EPA; and our residents, particularly our poorest residents, have been left to pay a disproportionate burden of the costs.

Let me give you a few examples of what I mean.

Lima

Lima is a proud community of modest financial means. We have shrunk from roughly 52,000 to 38,000, as more affluent households have moved to the suburbs. Our annual median household income is \$26,943 with nearly 1/3 living under the poverty threshold.

The City had a \$60 million agreement with Ohio to fix our combined sewer overflow problem. However, the federal EPA intervened, effectively halting any progress and contravening the control plan agreed to by the state regulators. I spent over 10 years and \$10 million on engineers and lawyers which did nothing to improve water quality. EPA demanded that I spend \$150 million and pay a civil penalty. Remember, my community only has 38,000 residents. In order to implement EPA's Long Term Control Plan, the projected average sewer bill will be \$871.62. This means that 47% of my households would be spending more than 4% of their household income on just their sewer bills with nearly 17% of my residents spending nearly 9% of their income.

Despite being one of the first communities in this country to have an approved Integrated Plan as the basis of our consent decree, it still is a frustrating process that is costly, drawn out and requiring special interventions by Headquarters. In this regard, we have talked with other communities about their experiences, and we have found that they are dealing with similar challenges. EPA staff stipulates deadlines to turn around information and then does not respond in similar timely ways. While Headquarters prioritizes Integrated Planning, the Regional Offices actively resist proposals that incorporate flexibility, longer implementation timetables, and priority setting, and focus instead on high cost approaches, fixed deadlines, and penalties. While Headquarters acknowledges that cities and their citizens have financial constraints, the Regional Offices minimize the arguments about burdensome costs and unrealistic time tables. While Headquarters embraces the idea that cities have shared stewardship roles for improving the environment, the regional EPA offices along with DOJ staff sometimes use bullying tactics and threats of near term federal court actions. And without help and intervention from EPA headquarters, I'm not sure if we would have gotten an approved Integrated Plan from the Regional Office.

The Lima experience is not unique. Cities around the nation are finding that little or no change has occurred in the regional offices in dealing with the challenges of the Clean Water Act. While we applaud the continuing engagement and good faith efforts of EPA headquarters, we must report that the message is not getting through to the regional offices.

Other Communities

Mayors have lost elections or faced recalls because they raised their water and sewer rates to pay for these mandates. This includes in Chicopee, Massachusetts where water and sewer rates were raised by 134%; Omaha, Nebraska which faced a \$1.5 billion consent decree; Akron, Ohio whose costs went from a \$350 million fix to a still not agreed upon figure of \$1.4 billion; and Chattanooga, Tennessee which faced a costly consent decree while the surrounding communities did not share in the cost even though they contributed to the problem.

In California, cities must comply with Total Maximum Daily Loads (TMDLs) which are estimated to cost cities in the Los Angeles County alone upwards of \$140 billion to comply. In USCM's study of current cost per household for water, sewer and flood control, of just 33 California cities that were studied, 24 cities reported that more than 10% of their households were paying more than 4.5% of their income on water, sewer and flood control costs with 10 of those cities having more than 20% of their households spending 4.5%. Please keep in mind that for many of these cities, they have not yet factored in the cost for TMDL controls.

Reality vs. Affordability

How did we get here? When the Clean Water and Safe Drinking Water Acts (CWA/SDWA) were first established, Congress set lofty, aspirational goals. A practical intergovernmental partnership with local, state, and federal governments was established, each playing a significant role. Congress provided CWA construction grants to local government, and that investment, that skin in the game on the part of the federal government, created a reasonable attitude about how we could accomplish those goals together.

That is not the case now. Congress retreated from the grants program primarily because of the anticipated high cost to the Treasury; but the implementation of the water policies by successive Administrations did not move in concert with Congress' decline in financial assistance. Quite the contrary, the Administration advanced then-goals to compliance status as permit requirements in the CWA, and drinking water standards under the SDWA. Now, local governments with state water permits are being punished by being held accountable to pay for reducing pollution from other non-urban sources, or for design limitations that make controlling natural forces (stormwaters) difficult to manage.

Let me give you a few examples –

- In a typical CSO consent decree, cities are held to an arbitrary number of no more than 4 overflows per year. However, there is no science that substantiates that as a magic number for all receiving water bodies. So, in some cases, cities are allowed 14 while in another case, 0 overflows. I'm sorry, but to try to engineer anything that could handle any and all types of storm with zero overflows is almost impossible and needlessly expensive. Attached is a sample list of communities and the number of overflows that are allowed.(1)
- In Iowa, fertilizer runoff from farms upstream has caused nitrate levels to exceed EPA's Drinking Water standards for the City of Des Moines. The city was forced to build a special facility 20 years ago to extract the pollutant. In 2013, the city spent \$900,000 just on nitrate removal and Des Moines' customers are facing a 10% rate hike. This facility will need to be replaced at a cost over \$100 million.
- In my own city, I have a river that is labeled as "fishable and swimmable". That particular river dries up in the summer time with water pooling and stagnating in only 4 inch depths. I can safely say that no one is ever going to swim in it and yet, I'm held to that standard of compliance.

As a result, EPA is dictating our priorities and where our taxpayer money is being spent. And, in many Mayors' opinions, they are diverting money that could be spent on not only our fundamental responsibilities of providing safe drinking water and proper handling of wastewater, but other core services as well such as education, safety services, and economic development.

Solutions

I do not want to give you the impression that Mayors do not care about clean water. We do. We care passionately about it and our actions and investments speak loudly. Local governments are the primary water quality steward of the nation, investing \$117 billion a year, employing nearly 300,000 people to provide the services; and, in the 30 years since Congress retreated from providing meaningful financial assistance we are the only level of government that actually provides water and sanitation services. It is no little irony that in dealing with EPA mandates we are offered loans to pay back with interest and promises from Congressional authorizers that fail to produce appropriations!

If federal policy continues to isolate local government as the remaining, and single-most, important player in this field, and our households and businesses are to shoulder the cost burden by themselves, then local government should have a greater voice in setting and achieving goals.

- The Mayors believe that future investments should be prioritized to first ensure the sustainability of existing public water infrastructure and associated public health, economic and environmental benefits.
- Additional improvements that will achieve additional benefits should be prioritized second.
- Investments that do not have commensurate public health, economic and environmental benefits do not belong on the priority list.

As I mentioned in the beginning, we need the federal and state government to be our partners, not our prosecutors. We either need real money or we need regulatory relief. And when we talk about regulatory relief, we are not talking about "turning the Clean Water or Safe Drinking Water acts on their ear" but we must ask for the following:

- Codify Integrated Planning to allow cities to develop comprehensive plans for their water, sewer, and stormwater needs;
- Define Affordability and stop the use of Median Household Income (MHI) as the critical metric for determining investment level. It puts 50% of households on an unfair and burdensome financial impact;
- Develop Reasonable and Sustainable Goals. Whether that means relooking at use attainability or allowing variances until a goal can be reasonably reached;
- Allow for Substantial Additional Time to reach these goals. I know we all want all of our lakes and streams to be perfect overnight but we can't get there if that means bankrupting our most vulnerable citizens;

- Eliminate civil penalties for local governments who develop an integrated plan and put good faith efforts into improving their water. We are not x-Chemical company where penalties impact our profit margin - Civil penalties only hurt the citizens, the customers of our communities; and
- Establish a review process to appeal decisions made at the regional level and allow for more transparency.

Conclusion

Cities are stewards of the public trust, a responsibility that we share with the state and federal governments and should be accorded the respect of a shared stewardship of our environment.

We need Congress to provide relief. We need Congress to provide oversight and to remember that EPA has its authority because of the way the Clean Water Act was written and enacted by the Congress. We need Congress to act.

Thank you again for this opportunity to address you.

(1) List of Local Governments with consent decrees, administrative orders, or in process. The number of annual overflows specified in long term control plans.

Akron OH – 0	Anderson IN – 8
Elkhart IN – 9	Evansville IN – 4
Fitchburg MA – 0	Ft. Wayne IN – 4
Henderson KY – 85% capture	Hammond Sanitary District IN – 0
Indianapolis IN – 4/2	Kansas City MO – 12
Lima OH – 5	Mishawaka IN – 0
Nashua NH – 0	New Bedford MA – 0
Newport RI – 0	Northeast Ohio Regional Sewer District OH – 4
Omaha NE – 4	Oswego NY – 0
Philadelphia PA – 80% capture	South Bend IN – 4
St. Louis MO – 4 for non Miss. River; no restriction on Miss. River discharges (target 10% volume reduction)	
Terre Haute IN – 7	

{Below are excerpts from Mayor Berger's testimony from July 25, 2012 before the House Transportation and Infrastructure Committee's Water and Environment Subcommittee describing the Conference's legislative proposal.}

The Water Quality Improvement Act

The Conference of Mayors developed the Water Quality Improvement Act for which we are seeking Congressional support and sponsors. This draft legislation builds on and reflects experience with EPA's Integrated Planning Framework and addresses the need for a federal-state-local government partnership to ensure affordability and flexibility. The principles embodied in the legislation were unanimously adopted by The U.S. Conference of Mayors at our 81st Annual Meeting (see attached).

Restoring Federal-Local Government Partnership

In the past, the federal government funded about 75% of the infrastructure that brought most cities into compliance with secondary treatment standards. This federal cost share made the federal government a partner in upgrading treatment plants and improving water quality. And, because the federal government was spending its own money as well as city money, the federal government paid close attention to ensuring that improvements were cost effective.

Currently, the federal government provides about \$2.35 billion a year in capitalization grants for both the drinking water state funds and the wastewater state funds. These funds give loans to cities which are paid back by the revenue raised from ratepayers and thus add to the costs borne by the ratepayers. This funding is a very small fraction of the over \$117 billion that cities spend each year on water and wastewater.

Originally, our draft legislation included a proposed authorization of \$3 billion in grants per year for 5 years for sewer overflow control, treatment plant upgrades, stormwater controls, and to retire related debt and thus provide real relief to local communities and families. However, while we have made the case for decades that additional investments are needed, Congress has not made a grant available to us for the past 30 years. We have been more than patient waiting for money that never gets appropriated. Therefore, we are now asking instead for regulatory flexibility and relief.

Currently EPA seeks penalties from cities even when they step up and agree to invest hundreds of millions in environmental protection. Cities are treated like criminals instead of partners. The draft legislation would bar EPA from extracting monetary penalties from cities for past violations if they agree to take action to address CWA mandates. This is a problem that is caused by a policy, not the law. If EPA changes its policy, then we can drop this provision from the draft legislation.

Ensuring Affordability

To make sure that projects are affordable, the legislation requires EPA to determine that water quality standards are attainable and that control measures are economically achievable and sustainable. To achieve these objectives, EPA can provide local governments with more time to

implement projects. If that is not sufficient, EPA can work with states to change water quality requirements so that meeting those requirements will not impose a “substantial and widespread economic and social impact” on communities.

“Substantial and widespread economic and social impact” is the current standard in EPA’s regulations for a “use attainability analysis” that justifies a change in water quality standards. So, this is a tool that is available under current law to help make wastewater infrastructure improvements more affordable for communities. However, EPA does little to support those analyses and, in fact, discourages States from using this tool. In addition, EPA regulations do not define what is considered “substantial” or “widespread.”

Under the draft legislation, water quality standards or wastewater control measures are unaffordable if meeting them would impose costs of more than 2% of actual household income on more than 20% of the households in the service area. Thus, “substantial” is defined as 2% of household income, and “widespread” is defined as 20% of the community.

This is similar to the approach that Congress adopted with your changes to title VI of the Clean Water Act, adopted as title V of WRRDA. These changes include language that identifies which communities would face a significant hardship meeting Clean Water Act mandates and therefore are eligible for grant assistance. This language endorses the use of the definition of “economically distressed” under the Public Works and Economic Development Act. Under that Act, a community is economically distressed when the community *or an area within a larger political boundary* has per capita income at 80% or less than national average, or unemployment 1% or more greater than national average, or actual or threatened severe unemployment or economic adjustment. The draft legislation similarly evaluates affordability based on differential impacts on low income households within a larger political boundary.

In addition, under the Public Works and Economic Development Act, the information on affordability that is provided by the community must be accepted by the Agency unless the Secretary determines it is inaccurate. The draft legislation does not include such a provision, but it would be welcome. Too often, EPA redoes a city’s financial analysis using assumptions intended to make it look as if a city can spend more than is truly affordable.

Ensuring Flexibility

The draft legislation also includes additional areas of flexibility. For example, it would allow cities to meet water quality standards over time (longer than a permit term) or using adaptive management approaches, if a city is meeting multiple mandates with an integrated plan. It would also allow cities to implement sewer control measures under their permits, rather than a consent decree or administrative order.

The legislation also would allow 10 year permits. It would allow EPA or a state to issue a permit for unavoidable sanitary sewer overflows. Finally, it would allow blending and peak flow treatment facilities as long as water quality standards are met. This last provision codifies an 8th Circuit opinion that EPA is refusing to apply nationwide.

In summary, we are looking for legislation that can benefit all cities and that does not leave relief for local governments subject to the discretion of the EPA. EPA discretion is what we have right now – and we are not seeing EPA use its discretion in ways that recognize that environmental improvements must be affordable.

DRAFT

[DISCUSSION DRAFT]

SECTION 1. SHORT TITLE.

This Act may be cited as the “Water Quality Improvement Act of 2016”.

SEC. 2. INTEGRATED PLANNING PROCESS.

Section 402 of the Federal Water Pollution Control Act (33 U.S.C. 1342) is amended by adding at the end the following:

“(s) Integrated Planning Permits.—

(1) **Integrated Planning Process.—** In this subsection, “integrated planning” means a systematic planning and decisionmaking process through which the feasibility and affordability of alternative actions are evaluated to address regulatory requirements, coordinate competing and sometimes conflicting actions and regulatory requirements, prioritize those actions and regulatory requirements that will provide the greatest environmental and public health benefits for the resources expended, and evaluate progress and the need for further actions to meet attainable water quality requirements through adaptive management processes.

(2) **Issuance of an Integrated Planning Permit.—**

(A) **In General.—** Upon the request of an applicant, the Administrator (or a State, in the case of a permit program approved under subsection (b)) shall issue a permit for municipal discharges that incorporates the results of an integrated planning process.

(B) **Integration of Actions to Address Regulatory Requirements.—** A permit issued under this subsection shall integrate actions to be taken to address at least two, or at the request of the applicant, more, regulatory requirements under this Act to which the applicant is subject.

(C) **Scope of Regulatory Requirements that May Be Addressed.—** A permit issued under this subsection may address pollution control requirements for—

- (i) combined sewer overflows;
- (ii) sanitary sewer overflows;
- (iii) municipal stormwater discharges;
- (iv) municipal wastewater discharges; and

DRAFT

(v) allocations in a total maximum daily load.

(3) Conditions in an Integrated Planning Permit.— In an integrated planning permit issued under this subsection—

(A) effluent limitations and other control measures necessary to meet applicable water quality requirements established pursuant to this Act shall—

(i) be based on attainable water quality standards; and

(ii) be economically achievable and sustainable.

(B) permit requirements may be made subject to a schedule of compliance, under which actions taken to meet those requirements may be implemented over more than one permit term.

(i) Reasonable Progress Necessary.— A schedule of compliance must provide for reasonable progress to be made towards meeting the permit requirements subject to such schedule.

(C) the permit term may, at the discretion of the Administrator (or a State, in the case of a permit program approved under subsection (b)), be longer than five years, but not more than ten years.

(4) Attainable Water Quality Requirements.— Attainable water quality requirements under paragraph (3) are requirements that the Administrator (or a State, in the case of a permit program approved under subsection (b)) has reviewed and found to be technically achievable and economically affordable.

(A) Determination of Technical Achievability.— A determination of technical achievability shall consider—

(i) naturally occurring pollutant concentrations;

(ii) natural, ephemeral, intermittent or low flow conditions or water levels;

(iii) human caused conditions or sources of pollution that cannot be remedied or would cause more environmental damage to correct than to leave in place;

(iv) dams, diversions, or other types of hydrologic modifications where it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of water quality standards; and

DRAFT

(v) physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, that may preclude attainment of water quality standards.

(B) Determination of Economic Affordability.—

(i) In General.— A determination of economic affordability shall consider whether meeting applicable water quality standards would result in substantial and widespread economic and social impact in the service area of the applicant.

(ii) Basis of Determination.— A determination of economic affordability shall be based on income and unemployment data, population trends, and other information determined relevant by the Administrator (or a State, in the case of a permit program approved under subsection (b)), including whether the applicant is located in an economically distressed area, as described in section 301 of the Public Works and Development Act of 1965 (42 U.S.C. 3161).

(iii) Substantial Impact.— The economic and social impact on a person in the service area of the applicant is substantial if the cumulative costs paid by such person to any entity for provision of water and wastewater-related services exceeds, or is projected to exceed, 2 percent of the person's annual household income.

(iv) Cumulative Costs.— Cumulative costs to be considered under clause (iii) shall include the cost paid by a person that will provide funding for the applicant's cost of—

(I) compliance with Federal and State regulatory requirements;

(II) operation and maintenance of water and wastewater systems;

(III) asset management; and

(IV) servicing any debt incurred or to be incurred to finance the other costs referred to in this clause.

(v) Widespread Impact.— An economic and social impact is widespread if 20 percent or more of persons in the service area of the applicant face the substantial impact described in clause (iii).

(C) Determining Impacts.— In determining whether the economic and social impacts of existing and potential future costs, including debt service, on persons living within the service area of the applicant are substantial and widespread, the Administrator (or a State, in the case of a permit program approved under subsection (b)) also shall consider:

(i) impacts on low income households in the service area and the ability of such households to pay basic shelter costs;

DRAFT

(ii) whether there is a failing local industry or, if a local industry might fail if higher taxes or fees are imposed on it;

(iii) the population trends in the service area of the applicant;

(iv) the applicant's capital improvement plan and whether the applicant would, in order to finance improvements to comply with existing water quality standards, have to divert resources that would otherwise be used for investment in essential capital projects that provide core public services to the community;

(v) the ability of the applicant to incur more debt, including its ability to issue and find a market for additional municipal bonds;

(vi) whether the debt incurred to implement effluent limitations and other control measures has or will result in a lowering of the applicant's bond rating;

(vii) whether the applicant has limited legal authority to pass increased costs through to ratepayers and increased costs of water quality programs must be paid from its general fund; and

(viii) any other financial factor brought to the attention of the Administrator (or a State, in the case of a permit program approved under subsection (b)) by the applicant.

(D) Additional Requirements.—

(i) A determination of economic affordability shall not—

(I) be based on median household income; and

(II) establish a minimum level of expenditure by a municipality.

(ii) A determination of economic affordability shall be based on the legally adopted rate structure in effect at the time that the determination of economic affordability is made.

(5) Economically Achievable Control Measures.— Effluent limitations and other control measures under paragraph (3) are economically achievable if—

(A) the effluent limitations and other control measures will not result in substantial and widespread social and economic impact in the service area of the applicant, as determined under paragraph (3)(B); or

(B) in any case in which an applicant is a municipality or other subdivision of a State organized for the purpose of providing services to the public, the annual cost to

DRAFT

implement such effluent limitations and other control measures, including debt service on bonds issued to fund such implementation, will not exceed 50 percent of the annual operating budget of the entity that provides water-related services, unless—

(i) the Administrator provides the applicant with a grant covering at least 75 percent of the total capital cost of the control measures; or

(ii) the permit allows at least 40 years for the implementation of effluent limitations and other control measures, and, if requested by the applicant, the permit relies on sustainable control measures involving green infrastructure.

(6) Sustainable Control Measures and Green Infrastructure.—

(A) Sustainable Control Measures.— Effluent limitations and other control measures under paragraph (3) are sustainable if they have fewer adverse environmental impacts associated with implementation of the measures, in either the short term or over the life of such controls, than alternative control measures to meet the same requirements.

(B) Green infrastructure Presumed Sustainable.— The Administrator (or a State, in the case of a permit program approved under subsection (b)) shall—

(i) presume that green infrastructure control measures are sustainable;

(ii) allow an applicant maximum flexibility to implement green infrastructure control measures; and

(iii) take into account the non-water quality benefits of green infrastructure control measures in addition to the expected levels of pollutant reduction.

(C) Green Infrastructure Defined.— In this paragraph, the term “green infrastructure” means the range of stormwater control measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or native landscaping to store, infiltrate, or evapotranspire stormwater and reduce flows to sewer systems or to surface waters.

(7) Schedules of Compliance for Making Reasonable Progress.— The Administrator (or a State, in the case of a permit program approved under subsection (b)) shall determine whether an applicant can make reasonable progress towards meeting attainable water quality requirements by implementing economically affordable and sustainable effluent limitations and other control measures under paragraph (3) based on—

(A) the availability and effectiveness of control measures;

(B) the cost of controls and the impact of such costs on ratepayers; and

(C) all environmental impacts of the control measures.

DRAFT

(8) Permit Renewal.—

(A) If Requirements Are Not Being Met.— If attainable water quality requirements are not being met, a permit described in paragraph (2), may be renewed—

(i) to continue implementation of affordable and sustainable effluent limitations and other control measures identified in the permit that are expected to result in the attainment of water quality requirements in the future;

(ii) to replace the effluent limitations and other control measures identified in the permit with alternative affordable and sustainable measures designed to meet attainable water quality requirements based on information developed by the discharger; or

(iii) to require the implementation of additional affordable and sustainable effluent limitations and other control measures, if measures identified in the permit are fully implemented but water quality requirements are not yet met.

(B) If Requirements Are Being Met.— If attainable water quality requirements are being met, no additional controls on the discharge shall be required under this section to meet water quality standards applicable at the time of permit renewal.

(C) If Control Measures Are No Longer Affordable and Sustainable.— If the effluent limitations and other control measures identified in the permit are no longer affordable and sustainable, the permit may be modified to replace the controls identified in the permit with alternative affordable and sustainable controls.

(9) Adaptive Management for the Attainment of Water Quality Standards.—

(A) In General.— At the time of renewal of a permit described in paragraph (2), the Administrator (or a State, in the case of a permit program approved under subsection (b)) shall review the requirements included in the existing permit to determine whether the requirements should be continued or modified.

(B) Review Considerations.— The permit review shall assess whether—

(i) attainable water quality requirements are being met or are expected to be met through the controls implemented during the permit term; and

(ii) the control measures continue to be affordable and sustainable.

(C) Continuation of Permit Requirements in Renewed Permit.— The permit requirements in the existing permit (including any schedule of compliance issued pursuant to paragraph (3)(B)), shall be incorporated into the renewed permit, unless the Administrator (or a

DRAFT

State, in the case of a permit program approved under subsection (b)) determines that a requirement should be modified or removed.

(10) **Prioritization and Sequencing of Control Measures.—**

(A) **Prioritization.—** A permit issued under in this subsection shall allow a permittee to identify priority control measures that will achieve cost-effective water quality benefits and implement and assess the effectiveness of such control measures before requiring implementation of other regulatory control measures.

(B) **Controls Identified in the Permit.—** If a permit provides for prioritization and sequencing of control measures, any sequenced regulatory obligations that will be addressed subsequent to the term of the current permit shall be identified in the permit fact sheet and any applicable schedule of compliance but will not be binding requirements of the current permit.

(11) **Transparency of Decisionmaking.—**

(A) **Permit Decisions.—** Prior to issuing a permit or denying a request from an applicant for a permit under this subsection, the Administrator (or a State, in the case of a permit program approved under subsection (b)) shall—

- (i) prepare a report explaining the rationale for its proposed decision; and
- (ii) make the report publicly available for review and comment by the applicant and other interested parties.

(B) **Administrator Review of State Permitting Decisions.—** When the Administrator provides his or her views to an authorized State concerning a proposed permit that is to be issued by the authorized State under this subsection, the Administrator shall make those views available in a written document that is publicly available for review and comment by the applicant and other interested parties.

“(t) Unavoidable Discharges.—

(1) **In General.—** A discharge from a sanitary sewer system may be authorized in a permit issued under this section (including a permit issued under subsection (s)), if such discharge is unavoidable.

(2) **Unavoidable.—**A discharge from a sanitary sewer system is unavoidable if it is—

- (A) necessary to prevent loss of life, personal injury, or severe property damage; or
- (B) a discharge that is a temporary, exceptional incident that could not be prevented by proper operation and maintenance of the system, such as exceptional acts of nature, wet

DRAFT

weather conditions beyond the capacity of the system, and unforeseen sudden structural, mechanical, or electrical failure that is beyond the control of the operator.

(3) Controls on Unavoidable Discharges to Protect Water Quality.— The Administrator (or a State, in the case of a permit program approved under subsection (b)) may require control measures to prevent the violation of water quality standards from unavoidable discharges from sanitary sewers.”

SEC. 3. MUNICIPAL STORMWATER CONTROLS.

Section 402(p)(3)(B)(iii) of the Federal Water Pollution Control Act (33 U.S.C. 1342) is amended to read as follows:

“(iii) shall require technically achievable and economically affordable controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices; control techniques; system, design and engineering methods; and other achievable and affordable controls on such discharges.”

SEC 4. ENFORCEMENT.

(a) Inapplicability of Administrative and Civil Penalties.— Section 309 of the Federal Water Pollution Control Act (33 U.S.C. 1319) is amended—

(1) In subsection (d)—

(A) by striking “Any person” and inserting “(1) In General— Any person”; and

(B) by inserting at the end the following:

“(2) Compliance Plans.—Notwithstanding paragraph (1), no municipality shall be subject to a civil penalty for past violations of the sections of the Act referred to in paragraph (1) in any case in which the municipality adopts and is implementing a plan to come into compliance with such sections, pursuant to a permit under section 402, an administrative order under subsection (a), or a civil action under subsection (b).”

(b) In subsection (g) by adding at the end the following:

“(12) Compliance Plans.— Notwithstanding paragraph (1), no municipality shall be subject to an administrative penalty for past violations of the sections of the Act referred to in paragraph (1) in any case in which the municipality adopts and is implementing a plan to come into compliance with such sections, pursuant to a permit under section 402, an administrative order under subsection (a), or a civil action under subsection (b).”

DRAFT

(c) Implementation of Integrated Plans through Administrative Orders or Consent Decrees.— Section 309 of the Federal Water Pollution Control Act (33 U.S.C. 1319) is amended by adding at the end the following:

“(h) Implementation of Integrated Plans.—

(1) The Administrator shall have no authority to issue an order under subsection (a) or to commence a civil action under subsection (b) against a permittee for municipal discharges unless the Administrator has provided the permittee with the opportunity to come into compliance with this Act through an integrated plan that meets the requirements of a permit issued under subsection (s) of section 402.

(2) At the request of any permittee for municipal discharges that is implementing one or more requirements of this Act under an administrative order or settlement agreement, the Administrator shall modify such administrative order or shall seek the leave of a court with continuing jurisdiction to modify such settlement agreement to allow the permittee to come into compliance with this Act through an integrated plan that meets the requirements of a permit issued under subsection (s) of section 402.

(3) At the request of any permittee for municipal discharges that is implementing an administrative order or settlement agreement that met the requirements of a permit issued under subsection (s) of section 402 when issued, but no longer meets such requirements, the Administrator shall modify such administrative order or shall seek the leave of a court with continuing jurisdiction to modify such settlement agreement to bring the agreement or order back into compliance with such requirements.”

(d) Public Information on Integrated Plans.— The Administrator shall compile a compendium of all proposed and final integrated plans developed under subsection (s) of section 402, administrative orders, settlement agreements, or other authority. The compendium shall be made publicly available on the Administrator’s Web site and shall be periodically updated.

SEC 5. DEFINITIONS

Section 502 of the Federal Water Pollution Control Act (33 U.S.C. 1362) is amended by adding at the end the following:

“(25) **BYPASS.**— The term “bypass” means an intentional diversion of a waste stream from any portion of a treatment system. Treatment of a waste stream in accordance with the design of the treatment system shall not constitute a “bypass” if the treatment system was approved or permitted by the Administrator (or a State, in the case of a permit program approved under section 402(b)), or if the discharge achieves applicable technology and water quality based effluent limitations at the point of discharge.

DRAFT

(26) MUNICIPAL DISCHARGE.— The term “municipal discharge” means a discharge from a treatment works as defined in section 212(2) or a discharge from a municipal storm sewer under section 402(p). This term includes a discharge of wastewater or storm water collected from multiple municipalities if such discharge is covered by the same permit issued under section 402.”



RESOLUTION TO REINSTATE A FEDERAL, STATE AND LOCAL GOVERNMENT PARTNERSHIP FOR ACHIEVABLE AND AFFORDABLE WATER QUALITY IMPROVEMENTS

WHEREAS, the capital costs that cities bear to address combined sewer overflows (CSOs), sanitary sewer overflows (SSOs), treatment plant upgrades, and stormwater controls are unfunded federal mandates and are among the most costly burdens faced by local governments; and

WHEREAS, upon the passage of the Clean Water Act, Congress authorized and funded over \$60 billion in grants that created partnerships between municipalities, states and the federal government to share the costs of upgrading publicly owned treatment works around the country to meet the Clean Water Act mandates relating to secondary treatment; and

WHEREAS, in 1987, Congress determined that large capital grants for municipal wastewater treatment were no longer necessary, and phased out grants to local governments in lieu of a loan program to be managed by the states; and

WHEREAS, since then many unanticipated and extremely costly new Clean Water Act and Safe Drinking Water Act mandates have been imposed on local governments and indeed more are to be imposed on local governments in coming months and years, but federal grant money is no longer provided to help meet these mandates; and

WHEREAS, today municipalities expend billions of dollars every year (\$111.4 billion in 2010) to provide essential water services and meet state and federal water and wastewater mandates, an annual amount that is nearly double the total of all the grants that the federal government provided over nearly 20 years; and

WHEREAS, the many mandates imposed by the Clean Water Act and the Safe Drinking Water Act have created cumulative financial burdens that cannot be borne by municipalities, their low and moderate income families, and their business enterprises, forcing municipalities to forego investment in competing municipal priorities; and

WHEREAS, in explicit recognition of the burden of these costs USEPA has recently developed a policy allowing local governments to create Integrated Plans through which a local government can coordinate competing and sometimes conflicting actions, prioritize actions that will provide the greatest environmental benefits for the funds expended, and evaluate progress and the need for further actions to meet water quality standards through adaptive management processes; and

WHEREAS, because USEPA currently interprets the Clean Water Act to require immediate compliance with any pre-1977 water quality standards, it relies on aggressive enforcement tools such as consent decrees and orders as its principal method of interacting with municipalities, resulting in overly costly and overly prescriptive mandates that often yield negligible public benefits, and precluding opportunities for flexibility by preempting the use of permits and adaptive management processes to comply with Clean Water Act obligations, and

WHEREAS, in tandem with these decrees and orders, USEPA and DOJ have adopted policies on penalties and fines that treat local governments as polluters, rather than as partners and stewards in improving our environment,

NOW THEREFORE, BE IT RESOLVED, that The U.S. Conference of Mayors urges the United States Congress to determine that large capital grants to cities are necessary to meet mandates imposed under the Clean Water Act; to re-establish a joint environmental stewardship with cities; and, to assure that the costs of sustaining the infrastructure and operations of water and wastewater systems of cities do not unjustly burden low and moderate income households nor create burdensome costs for business enterprises; and

BE IT FURTHER RESOLVED, that The U.S. Conference of Mayors urges the United States Congress to authorize and appropriate sufficient funding for capital grants to cities facing mandates levied by the Clean Water Act, that these grants be prioritized for financially distressed cities and be for no less than 75 per cent of the costs of projects to be undertaken by cities, and that these grants may be used to retire debt to which cities have obligated themselves to comply with Clean Water Act, if those debts have imposed costs on customers that are beyond the affordability limits discussed below; and

BE IT FURTHER RESOLVED that The U.S. Conference of Mayors urges the United States Congress to enact amendments to the Clean Water Act to address concerns related to unfunded federal mandates, such as the following:

a) Without regard to the actual availability of federal grants or loans for addressing Clean Water Act and Safe Drinking Water Act mandates, increased flexibility must be allowed to municipalities seeking to comply with the mandates and that this be achieved through permits based upon integrated plans developed by municipalities to prioritize actions providing the greatest environmental benefits for the funds expended, and to allow municipalities to evaluate their progress and any need for further actions to meet water quality standards through adaptive management processes; and

b) Remove regulatory barriers to the use of adaptive management and permits to implement integrated plans by specifically determining that a municipality implementing an integrated plan will be in compliance with its permit as long as it is making reasonable progress towards achieving Clean Water Act goals; and

c) Authorize USEPA discretion to determine what constitutes "reasonable progress", but do so within certain limits. Specifically, Congress should direct that a municipality will not be out of compliance with its permit for failing to make reasonable progress if:

* the applicable water quality standard is not achievable based on a use attainability analysis in accordance with current EPA regulations (where substantial impact is defined as 2% of a household income and a widespread impact is defined at 20% of the service area); and

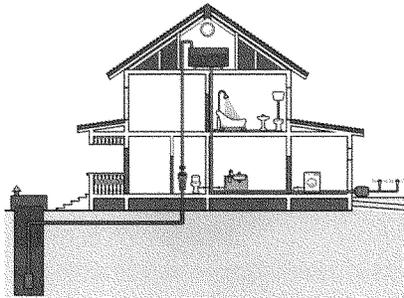
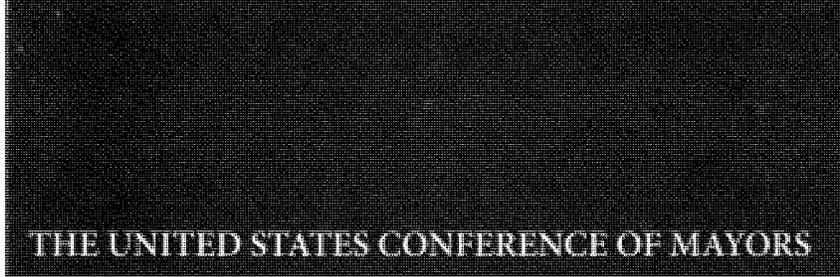
* the control measures are not economically affordable because they would result in rates that exceed 2% of the household income of at least 20% of the families in a service area; and

4/4/2016

81st Annual Meeting Adopted Resolutions

- * or the control measures are not economically affordable because the annual implementation costs, including debt service, will exceed half the annual operating budget of the municipal utility and the municipality does not receive a grant covering at least 75% of the costs or the permit does not allow at least 40 years for implementation of controls.
- d) Provide the same flexibility for integrated plans implemented through consent decrees or administrative orders.
 - e) Authorize permits for unavoidable sanitary sewer discharges so that controls on such discharges may be included in an integrated permit (rather than a consent decree).
 - f) Allow regulators to issue permits with 10-year terms.
 - g) Require USEPA to issue or work with States and their Regions to issue at least one integrated permit in each of the 10 EPA Regions within one year and to report to Congress on the implementation of integrated permits within two years.
 - h) Prohibit USEPA from imposing civil or administrative penalties on a municipality for past violations if the municipality agrees to implement a plan to come into compliance with Clean Water Act obligations.
 - i) Define the term "by-pass" to clarify that a system that is designed and permitted to treat excess flows in peak flow treatment systems is not considered a by-pass to address the concern that some EPA regions are now claiming that permitted peak flow treatment systems are somehow an illegal by-pass of a treatment system.
 - j) Amend title 6 of the Clean Water Act to authorize repayment of SRF loans over 30 years instead of 20 years to make the annual costs of financing those loans more affordable for municipalities.
 - k) Require USEPA to update its affordability guidance to provide a more realistic and complete review of the all the financial burdens on municipalities and their ratepayers, including burden imposed by other federal laws and to justify flexible approaches to meeting all federal and state water-related mandates.

RESOLUTION ADOPTED JUNE 2013



**Public Water Cost Per Household:
Assessing Financial Impacts of EPA
Affordability Criteria in California Cities**



NOVEMBER 2014





The United States Conference of Mayors

Kevin Johnson
Mayor of Sacramento
President

Stephanie Rawlings-Blake
Mayor of Baltimore
Vice President

Mick Cornett
Mayor of Oklahoma City
Second Vice President

Tom Cochran
CEO & Executive Director

MAYOR'S BRIEFING

The demand for public water infrastructure investments persists even though local government continues to substantially increase investments nearly every year for the last five decades. Cities are facing dual responsibilities to reinvest in an aging infrastructure to sustain services and public health, and to comply with long term obligations under water mandates. Sometimes these needs compete for scarce resources in a city.

Cities have expressed concern over costly consent agreements regarding sewer overflows and long term control plans, and nutrients impacting water quality that are regulated as total maximum daily loadings (TMDLs) into receiving water bodies. The United States Conference of Mayors (USCM) and its Mayors Water Council (MWC) has urged EPA to exercise greater flexibility when imposing compliance mandates to lessen the financial burdens on customers; and also because sewer overflow and TMDL consent agreements are so costly that they compete with reinvestment in current water infrastructure and other essential public services such as public safety, road repairs and maintenance programs and other local priorities.

Cities in this study exhibit already high levels of cost per household for public water services. Measured by actual household income rather than MHI, this study underscores the fact that many of the communities are experiencing both widespread and substantial (and sustained over time) financial impacts in below median income households.

Growth in regulatory compliance requirements that continue to emerge from EPA in silo fashion ignores the cumulative and distributive costs to households. Household costs are largely irrelevant under the water laws; and especially due to the way EPA assesses affordability at the local level (i.e., indexing the affordability threshold to the more affluent median income household, and then expecting below median income households to bear a disproportionate financial burden in rate setting).

California cities were asked to provide information on the average annual cost per household for water, sewer and flood control. The cost per household involves only the residential customers. Current cost levels represent the cumulative costs over time to the present, but do not reflect future costs, particularly anticipated rate increases required to address emerging TMDL compliance standards.

We compared actual cost per household in over 30 California cities, 28 of them clustered in Los Angeles County, to EPA's affordability criteria under the Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) regulatory programs, both indexed to Median Household Income (MHI) (2.0% MHI under CWA; 2.5% MHI under the SDWA). For the purposes of this research 4.5% MHI is used as a combined affordability measure. These criteria have become our focus because their intended purposes are set to measures against which EPA might find economic burdens that do not relieve cities of their obligations, but could be used to justify greater flexibility over the terms and timeframes for compliance.

When EPA affordability criteria regarding stormwater and sewer overflow costs exceed 2% of MHI in a community, the Agency will consider greater flexibility. Generally speaking, EPA affordability criteria are seldom reached when estimates are based on MHI, a relatively poor measure of burden on below median income households.

There are different levels of financial distress based on where a household is on the income distribution: if a median income household experiences financial distress when water and sewer costs exceed 4.5% of their income, the severity of that distress for a below median income household is substantial and should trigger greater flexibility. Cities in this study exhibit already high levels of cost per household for public water services. Measured by actual household income rather than MHI, this study underscores the fact that many of the communities are experiencing both widespread and substantial (and sustained over time) financial impacts in below median income households.

Major Findings *Public Water Cost per Household in the Surveyed Cities is Already High*

- Total public water cost per household ranges from \$366 to \$2,640/yr, (Table A).
- Median total cost per household is \$1,172/yr.
 - ◊ Annual median water costs at \$902/yr are four times sewer costs.
 - ◊ Sewer cost per household is \$199/yr (median).
 - ◊ Flood Control cost per household is \$41/yr (median).
- Cost per household in 4 cities exceed one standard deviation above average:
 - ◊ La Canada Flintridge \$ 2,640
 - ◊ Sierra Madre \$ 2,040
 - ◊ La Verne \$ 1,936
 - ◊ Escondido \$ 1,730

Substantial Economic Burdens on Below Median Households

- As expected, households with high income spend a lesser percentage of annual income on public water.
- When EPA applies the MHI as the economic burden indicator it masks the distributional cost impacts on below median income households (Table C). The severity of economic burden is found in the lower income decile groups which are virtually hidden by using the MHI indicator.
- The difference between 4.5% of actual income and 4.5% of MHI can be considerable:
 - ◊ Sacramento has a relatively large population coupled with high public water costs and therefore the lower median income households are paying roughly \$29 million/yr over 4.5% of actual income.
- This financial impact is masked by using just MHI as the affordability threshold.
- Over a 10-year period the lower median income households are carrying a \$293 million financial burden.
 - ◊ Escondido has 34% of its households in a 148,738 population city with spending that exceeds 4.5% of actual income:
 - Annually, these households spend a combined \$12.1 million in excess of 4.5% of their actual income.
 - Over a 10-year period the financial burden is \$122 million.
 - ◊ Eleven of the study area communities have 10-year period financial burdens above \$10 million borne by the lowest income households.
- More than half of the cities in the study exhibit excessive public water spending based on actual income, and the dollar amount of excessive spending is substantial, (Table C).

Widespread Economic Burdens on Households

- Comparing Actual Cost per Household to MHI Criteria provides a way to calculate how widespread the substantial economic burden is- measured by the percent of a city's households that carry a substantial economic burden.
- Total public water cost per household ranges from slightly to substantially greater than 4.5% of actual household income across the household income distribution deciles as described below:
 - ◊ Eleven cities report combined water, sewer and flood control costs per household in excess of 4.5% of annual income for 20% or more of households.
 - ◊ Paramount, La Verne and Escondido households exceed the 4.5% of actual income by 39%, 35% and 34%, respectively.
- Thirteen cities exceed spending 4.5% of actual income for 10 to 18% of their households.
- Six cities exceed spending 4.5% of actual income for 4 to 9% of their households.
- Three cities have less than 4% of households not spending in excess of 4.5% of their actual annual income on public water.

Introduction and Statement of Purpose

Lower income households spend a greater percentage of their annual income on public water services than households with median or higher income, and the disparate financial impact is not adequately taken into account by EPA when setting compliance levels and timeframes.

The United States Conference of Mayors (USCM) and its member cities have been engaged with the US Environmental Protection Agency (EPA) concerning the affordability of local public water services and federal/state mandates associated with current water laws. USCM member cities have expressed concern over costly consent agreements regarding sewer overflows and long term control plans, and nutrients impacting water quality that are regulated as total maximum daily loadings (TMDLs) into receiving water bodies. The USCM and its Mayors Water Council (MWC) has urged EPA to exercise greater flexibility when imposing compliance mandates to lessen the financial burdens on customers; and also because sewer overflow and TMDL consent agreements are so costly that they compete with reinvestment in the aging current water infrastructure and other essential public services such as public safety, road repairs and maintenance programs and other local priorities. During the course of these discussions it became clear from focusing on how EPA assesses local affordability that the current cost per household for public water services impacts households differently from a financial perspective based on actual household income. Lower income households spend a greater percentage of their annual income on public water services than households with median or higher income, and the disparate financial impact is not adequately taken into account by EPA when setting compliance levels and timeframes.

EPA developed affordability guidelines for certain regulations under the CWA¹ and SDWA². The guidelines include an algorithm for estimating whether marginal (additional) expenditures necessary to achieve compliance would exact a substantial and widespread economic burden on the community. Regulations under the SDWA are based on national cost estimates, but EPA has stated that a new drinking water regulation can be implemented if the cost to household customers does not exceed 2.5 percent of median household income (MHI)³. Guidelines developed by EPA for use in CWA enforcement efforts regarding stormwater and sewer overflows considers a long term control plan to be affordable if the cost to household customers does not exceed 2.0 percent of MHI. MHI, the one common characteristic of the 2 guidelines, may be intended to stretch national and local efforts to achieve the goals of the CWA and SDWA, but its unintended consequence is a disparate financial burden on below median income households as a regressive tax. Households under the poverty level and under MHI pay a disproportionate share of their annual incomes for public water compared to the

1. U.S. EPA. 1997. Guidance for Financial Capability Assessment and Schedule Development
2. U.S. EPA. 2002. Affordability Criteria for Small Drinking Water Systems: An EPA Science Advisory Board Report. EPA-SAB-EEAC-03-004. U.S. Environmental Protection Agency, Washington, DC.
3. Affordability criteria considered by EPA under the SDWA pertains to setting national drinking water standards on a national basis. Using 2.5% of MHI to assess affordability for small community drinking water systems is intended to determine if a variance is appropriate.

affluent households (median and above median income households) in a community. EPA's insistence on using affordability criteria indexed to MHI creates a class-based environmental injustice. While there are good arguments for wanting and expecting greater levels of water quality and safe drinking water, there are limited resources in below median income households, and limits to overall local government resources. The clearly disproportionate and unfair financial impact on below median income households is a problem that EPA and Congress should be aware of and do something about.

EPA's insistence on using affordability criteria indexed to MHI creates a class-based environmental injustice.

This report has four purposes: first, it is intended to generate information on the current cost per household for public water services (sewer, water, flood control/stormwater). This is accomplished via a multi-community survey that collects and reports the current average annual cost per household in dollars and as a percent of annual household income according to different household income levels. The second purpose of the report is to compare current cost per household to EPA affordability criteria, taking into account the cost per household on all income levels. Third, this information is important to cities because it provides a profile of where current costs are, and how future investments, whether for system renewal or for regulatory compliance, or both, will impact the cost per household. It also makes a compelling argument for greater federal financial support for local governments, which has been reduced in a time where regulatory requirements have been increasing. Fourth, the study provides a framework for permit writers to consider the affordability of permit programs when considering compliance levels and deadlines.

Community Survey Information and Analysis

The data used in this report are gathered from participating communities regarding water costs, and from Census data at census.gov⁴. The USCM's Mayors Water Council collaborated with a number of California and Los Angeles County cities via an on-line survey. We chose Los Angeles County since it is one of the first areas in the nation to be regulated under a federal TMDL Consent Decree for stormwater. Additional California communities participated in the survey from outside of Los Angeles County.

Cities were asked to provide information on the average annual cost per household for water, sewer and flood control. The cost per household involves only the residential customers. Current cost levels represent the cumulative costs over time to the present.

Census information was collected for each participating city, and includes data on population, poverty rate, median household income (MHI), and the number of households per income category. The Census reports income for 10 income level categories (deciles)⁵.

Current public water cost per household information provides the city with an accurate measure of how much households spend across the income distribution. Any additional costs for renewal, expansion or increased compliance requirements can be compared to the 2014 cost as a benchmark. Current costs are not static, and public water rates are rising in many cities around the nation. Cities in the survey are facing substantial new financial responsibilities related to compliance with Total Maximum Daily Loads, and there will likely be additional CWA/SDWA mandates as EPA continues to develop regulations in silo fashion over time.

The key findings are presented in the next section. Appendix A includes information on the distribution of cost per household across the income spectrum for each survey city. Appendix B provides comments on bias, estimation and uncertainty identified and considered in the survey and presentation of data.

4. See Table A

5. The ten categories of household income are: \$10,000 or less; 10,001 to 14,999; 15,000 to 24,999; 25,000 to 34,999; 35,000 to 49,999; 50,000 to 74,999; 75,000 to 99,999; 100,000 to 149,999; 150,000 to 199,999; and, 200,000 plus. For analytical purposes these categories are represented by the mid-point of income, except for the lowest income decile which is set at \$10,000.00, and highest income decile which is set at \$200,000.00.

Results *I: The Current Cost per Household for Public Water Services in the Survey Cities: (See Tables A & B)*

- A. Average Annual Water Cost per Household**
All Water Services (sewer, water and flood control)
- Total public water cost per household ranges from \$366 to \$2,640/yr
 - Median total cost per household is \$1,172/yr
 - ◊ Annual median water costs at \$902/yr are four times sewer costs.
 - ◊ Sewer cost per household is \$199/yr (median).
 - ◊ Flood Control cost per household is \$41/yr (median).
 - Cost per household in 4 cities exceed one standard deviation above average for total public water costs
 - ◊ La Canada Flintridge \$ 2,640
 - ◊ Sierra Madre \$ 2,040
 - ◊ La Verne \$ 1,936
 - ◊ Escondido \$ 1,730
 - There is a wide range of current cost per household for all public water services
 - ◊ San Marino has the lowest at \$366 annual average cost
 - ◊ La Canada Flintridge has the highest at \$2,640/yr
- B. Drinking Water Cost per Household**
- Drinking water cost per households ranges from
 - ◊ Low \$115/yr in San Marino
 - ◊ High of \$2,245/yr in La Canada Flintridge
 - The median Drinking Water cost per household is \$902, and it is four times greater than the median Sewer cost per household at \$199.
- C. Sewer**
- Sewer cost per household ranges from
 - ◊ \$12/yr a year in Monterey Park
 - ◊ \$738/yr in Sierra Madre
 - The median cost per household is \$199/yr
- D. Flood Control**
- Flood control cost per household ranges from
 - ◊ \$0 in Azusa
 - ◊ \$351/yr in South Gate
 - The median cost per household is \$41/yr

II: EPA Affordability Criteria Indexed to MHI Masks Substantial and Widespread Financial Impact (See Table B)

When EPA affordability criteria regarding stormwater and sewer overflow costs exceed 2% of MHI in a community, the Agency will consider greater flexibility. Generally speaking, EPA affordability criteria are seldom reached when estimates are based on MHI, a relatively poor measure of burden on below median income households.

For example, in the study area the median 2% of MHI for the cities is \$1,352, but the median cost for sewer and flood control (CWA) is only \$240. Similarly, the median combined water, sewer and flood control cost per household in the study cities is \$1,171, and does not come close to the median 4.5% of MHI of cities at \$3,042. Consent decrees involving local investment, from this mathematical vantage point, appear affordable with ample unused margin and no perceived substantial or widespread economic burden on the community.

When actual household income levels are considered in the affordability determination it becomes clear that MHI, as the presumptive critical criteria, masks the financial impact on lower income households.

Estimating affordability based on MHI results in financial burdens on below median income households because they pay a disproportionate share of their annual incomes. Drilling down into the cost per household as a percent of actual income reveals the disparate financial impact on below median income households.

City of Sierra Madre

- 2% MHI in the City of Sierra Madre is \$1,806, and average annual sewer costs are \$738, or about 40% of the 2% MHI affordability criteria. The affordability of a project does not appear to be an economic burden when the MHI serves as the critical metric.
- 18% of households are estimated to be paying in excess of 2% of their actual annual income on sewer.
 - The excess sewer payments are felt by households earning up to \$35,000/yr.
- Another 8% of households, 26% in all, exceed 2% of actual income when adding flood control to sewer cost per household.
- Potential affordability obligation of EPA criteria
 - 2% MHI in Sierra Madre is equal to 18% of actual income for households with income of \$10,000/yr.
 - 4.5% MHI (\$4,064) is equal to 40% of actual income in \$10,000/yr households.

If EPA triggers consideration of regulatory flexibility when the median income household experiences a substantial economic burden, then the same trigger should apply when water and sewer costs impose a substantial economic burden on the below median income household.

City of Sacramento

- The MHI in the City of Sacramento is \$19,013, and average annual water costs are \$617, or about 3.3% of the 2% MHI affordability criteria.
- 18% of households pay an excess of 2% of annual income for water.
 - The excess water payments are felt by households earning up to \$35,000/yr.
- Potential affordability obligations of EPA criteria
 - 2% MHI in Sacramento is equal to 10% of actual income for households with income of \$19,013/yr.
 - 4.5% MHI (\$82,009) is equal to 23% of actual income in \$18,000/yr households.

III: Substantial Economic Burdens on Below Median Households

If EPA triggers consideration of regulatory flexibility when the median income household experiences a substantial economic burden, then the same trigger should apply when water and sewer costs impose a substantial economic burden on the below median income household. It is possible to quantify the regressive nature, and amount, of economic burden to determine if it is substantial. This study uses 4.5% of MHI and 4.5% of actual annual income to measure the severity of economic burden (or, excessive spending by households) that results from using MHI as the critical metric.

A spectrum from mild to severe financial distress was found in households in most cities in the study. As expected, households with high income spend a lesser percentage of annual income on public water.

The severity of economic burden depends on where a household is on the income distribution. The study area communities exhibit substantial financial burdens that are sustained over time due to the recurring need for water and sewer services and the growing cost per household.

Estimates are generated of how much money a household spends in excess of 4.5% of actual income to gauge the severity of economic burden. The excess cost per household can then be multiplied by the number of households in each income category to estimate the magnitude of sustained economic burden.

- As expected, as income increases excessive spending decreases. (Table C).
- Lower median income households can experience a substantial financial burden (spending in excess of 4.5% of actual income).

Regulations developed under the separate silos of CWA and SDWA do not adequately consider the economic burden associated with overall public water and wastewater costs. Consideration of total public water costs are a more accurate depiction of the true household and community affordability, and of potential economic burdens and how widespread those burdens are.

- ◊ Sacramento has a relatively large population coupled with high public water costs and therefore the lower median income households are paying an estimated \$29 million/yr over 4.5% of actual income
 - » This financial impact is masked by using just MHI as the affordability threshold.
 - » Over a 10-year period the lower median income households are carrying a \$293 million financial burden when using actual income versus MHI.
- ◊ Escondido has 34% of its households in a 148,738 population city with spending that exceeds 4.5% of actual income.
 - » Annually, these households spend a combined \$12.1 million in excess of their 4.5% of actual income
 - » Over a 10-year period the financial burden is \$122 million
- Seventeen of the study area communities have 10-year period financial burdens above \$10 million
- Two cities (Monterey Park, San Marino) have sewer, water and flood control costs below \$500/year; and do not currently have households paying in excess of 4.5% of their actual annual incomes.

IV: Widespread Economic Burdens on Below Median Households

Water costs are on average four times higher than sewer costs in the survey communities. It is common for communities in arid regions to have this relationship between sewer and water services. Looking at combined water, sewer and flood control costs per household serves to demonstrate that different combinations of water costs and their associated mandates can vary considerably by community. Regulations developed under the separate silos of CWA and SDWA do not adequately consider the economic burden associated with overall public water and wastewater costs. Consideration of total public water costs are a more accurate depiction of the true household and community affordability, and of potential economic burdens and how widespread those burdens are.

- Eleven cities report combined water, sewer and flood control costs greater than 20% of households pay in excess of 4.5% of annual income.

Paramount	39.4%
La Verne	35.3%
Escondido	34.4%
Lomita	29.6%
Santa Barbara	27.9%
South Gate	26.4%
Sierra Madre	26.2%
Sacramento	24.3%
Arcadia	23.8%
Alhambra	22.1%
Claremont	21.1%

- Thirteen cities report combined water, sewer and flood control costs per household exceeding 4.5% of actual income for 10 to 20% of their households.

Downey	14.2%
Rosemead Branch	13.6%
South Pasadena	11.5%
Norwalk	11.1%
La Canada Flintridge	10.7%
Half Candelero	10.5%
La Mirada	10.1%
Glendora	10.0%
Signal Hill	11.0%
Pasadena	11.5%
Baldwin	11.1%
Monterey Park	10.9%
Azusa	10.1%

- Six cities report combined water, sewer and flood control costs per household exceeding 4.5% of actual income for 4 to 8% of their households.

San Gabriel	8.0%
Torrance	8.0%
Diamond Bar	7.9%
San Dimas	7.7%
Lakewood	5.4%
Monrovia	4.4%

- Two cities (Monterey Park and San Marino) did not report any households paying over 4.5% of their annual income on combined water, sewer and flood control services.
- Three cities do not have data available to calculate excess cost per household, (Bradbury, Inglewood and Vernon).

V: EPA Affordability Criteria Exposure for Below Median Income Households (See Table C)

Public water customers (households) may be required to spend more money to address mandates imposed by EPA under the CWA and the SDWA, as well as assume responsibility to cover normal cost of service and any upgrades required to provide service. The affordability index of 2% MHI is used by EPA to assess the appropriateness of CWA requirements, but only some of them. Similarly, the SDWA use of 2.5% of MHI does not address all public drinking water systems, and it is likely that new mandates or new interpretations of what is required under existing mandates puts the rate payer household at a long-term financial disadvantage.

- The median of 2% MHI for the study cities is \$1,352
- The median of 4.5% MHI for the study cities is \$3,042

- Two cities currently have public water costs per household that nearly reach 4.5% of MHI, and experience both substantial and widespread economic burdens

	Combined Water Cost per Household	4.5% MHI	Households Impacted	10-Year Impact
• Paramount	\$1,439	\$1,987	39.4%	\$27 mill
• South Gate	\$1,171	\$1,883	26.4%	\$29.8 mill

- Three cities have statistically high exposure to higher public water costs because they are wealthy communities measured by MHI

	2% MHI	4.5% MHI
• La Canada Flintridge	\$3,099	\$6,972
• Manhattan Beach	\$2,688	\$6,050
• San Marino	\$2,782	\$6,260

Table A: Summary of Public Water Cost By Component

	<i>Average Annual Public Water Cost (1) Per Household (\$)</i>	<i>Sewer Cost (\$)</i>	<i>Water Cost (\$)</i>	<i>Flood Control Cost (\$)</i>
Alhambra	1,323.89	178.26	1,110.00	35.63
Arcadia	1,493.78	354.52	1,089.26	50.00
Azusa	730.18	134.30	595.88	0.00
Bellflower	836.75	197.50	613.00	26.25
Bell Gardens	878.63	150.00	627.28	101.35
Bradbury	1,549.98	155.00	1,145.06	249.92
Claremont	1,498.78	113.23	1,344.00	41.55
Diamond Bar	1,137.38	198.79	902.26	36.33
Downey	1,142.54	216.18	891.72	34.64
Escondido	1,730.00	202.00	1,460.00	50.00
Glendora	1,172.11	152.00	967.50	52.61
Inglewood	1,008.00	90.00	860.00	58.00
La Canada Flintridge	2,640.00	330.00	2,245.00	65.00
La Mirada	1,213.64	189.50	995.75	28.39
La Verne	1,936.08	245.00	1,661.12	29.96
Lakewood	743.46	201.50	491.73	50.23
Lomita	1,295.21	258.20	1,000.56	36.45
Manhattan Beach	1,429.12	284.00	1,126.00	19.12
Monrovia	502.00	60.00	400.00	42.00
Monterey Park	412.00	12.00	360.00	40.00
Norwalk	1,290.48	240.48	1,000.00	50.00
Paramount	1,439.19	197.50	1,218.26	23.43
Pomona	741.80	158.90	580.50	2.40
Redondo Beach	1,474.21	331.00	1,110.66	32.57
Sacramento	1,302.00	617.00	549.00	136.00
San Dimas	896.20	199.50	631.19	65.51
San Gabriel	679.00	267.00	412.00	NA
San Marino	366.91	211.00	115.91	40.00
Santa Barbara	1,480.33	516.00	941.52	22.81
Sierra Madre	2,040.00	738.00	1,189.00	113.00
Signal Hill	796.69	407.70	331.50	57.49
South Gate	1,171.00	210.00	610.00	351.00
South Pasadena	1,384.98	154.98	1,320.00	0.00
Torrance	695.64	52.08	643.56	NA
Vernon	580.00	158.00	422.00	NA

(1) Includes payment for sewer, water and flood control

Table B: Average/Median Cost per Household for Survey Cities

<i>Water Cost Characteristic</i>	<i>Total Water Cost</i>	<i>Sewer Cost</i>	<i>Water Cost</i>	<i>Flood Control</i>
Median	\$1,172.11	\$199.50	\$902.26	\$40.78
Average	\$1,172.80	\$235.29	\$882.03	\$60.68
1 Standard Deviation	\$488.43	\$151.96	\$429.22	\$47.10

Table C: Comparison of Public Water Cost and EPA Affordability Criteria

	Public Water Cost Per Household (1) (\$)	2% of MHI (2) (\$)	4.5% of MHI (3) (\$)	Excess of 4.5% of Actual Income (4) (%)	10-YR Excess Payments (\$ Mill)
Alhambra	1,323.89	1,078	2,426	22.1	40.0
Arcadia	1,493.78	1,546	3,480	23.8	29.3
Azusa	730.18	1,016	2,387	10.1	2.8
Bellflower	836.75	1,015	2,284	11.1	8.5
Bell Gardens	878.63	765	1,722	14.5	5.2
Bradbury	1,549.98	NA	NA	NA	NA
Claremont	1,498.78	1,615	3,663	21.1	15.0
Diamond Bar	1,137.38	1,803	4,058	7.9	5.8
Downey	1,142.54	1,202	2,705	18.2	24.6
Escondido	1,730.00	995	2,240	34.4	121.9
Glendora	1,172.11	1,492	3,357	12.6	10.0
Inglewood	1,008.00	891	2,005	NA	NA
La Canada Flintridge	2,640.00	3,099	6,972	14.7	13.0
La Mirada	1,213.64	1,626	3,659	14.0	9.2
La Verne	1,936.08	1,530	3,443	35.3	25.6
Lakewood	743.46	1,577	3,549	5.4	3.4
Lomita	1,295.21	1,237	2,830	29.6	10.8
Manhattan Beach	1,429.12	2,688	6,050	10.9	7.6
Monrovia	502.00	1,389	3,125	4.4	0.3
Monterey Park	372.00	1,116	2,511	0.0	0.0
Norwalk	1,290.48	1,209	2,721	17.0	27.7
Paramount	1,439.19	883	1,987	39.4	27.0
Pomona	741.80	977	2,198	11.5	10.4
Redondo Beach	1,474.21	1,976	4,446	17.6	29.5
Sacramento	1,302.00	1,013	2,279	24.3	293.7
San Dimas	822.78	1,529	3,440	7.7	3.0
San Gabriel	679.00	1,125	2,531	8.0	1.7
San Marino	366.91	2,782	6,260	0.0	0.0
Santa Barbara	1,480.33	1,275	2,869	27.9	55.0
Sierra Madre	2,040.00	1,806	4,064	26.2	10.0
Signal Hill	796.69	1,315	2,958	11.6	13.6
South Gate	1,171.00	837	1,883	26.4	29.8
South Pasadena	1,384.98	1,683	3,788	17.3	11.3
Torrance	695.64	1,521	3,423	8.0	8.6
Vernon	580.00	NA	NA	NA	NA

(1) Includes spending on sewer, water and flood control.
(2) EPA affordability criteria under the CWA and the 1997 Financial Guidance (2% MHI).
(3) EPA affordability criteria under the SDWA (2.5% MHI).
(4) Comparing the percent of actual income spent to 4.5% MHI (2.5% MHI plus 2.0% MHI from CWA guidelines).

Appendix A Public Water Cost per Household and EPA Affordability Criteria for California Cities

Alhambra, CA

Population: 2010: 84,477

Property Base 2011: 13.4%

Median Household Income (HHSI) 2012: 59,817

EPA Affordability Criteria
 2% of Income: \$1,078.34
 4.5% of Income: \$2,426.27

Current Average Cost per Household:

Water: \$ 178.26
 Sewer: \$1,110.00
 Flood Control: \$ 35.63
 Total: \$1,323.89

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 29,103	Percent of Households	CWA 2% MHI \$1,078.34 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,426.27 as Percent of Actual Income
Less than \$10,000	10,000	1,591	5.5%	10.8	24.26
\$10,000 to \$14,999	12,500	1,688	5.8%	8.6	19.41
\$15,000 to \$24,999	20,000	3,138	10.8%	5.4	12.13
\$25,000 to \$34,999	30,000	3,201	11.0%	3.6	8.09
\$35,000 to \$49,999	42,500	3,978	13.7%	2.5	5.21
\$50,000 to \$74,999	62,500	5,019	17.2%	1.7	3.88
\$75,000 to \$99,999	87,500	4,003	13.8%	1.2	2.77
\$100,000 to \$149,999	125,000	3,759	12.9%	0.9	1.94
\$150,000 to \$199,999	175,000	1,661	5.7%	0.6	1.39
\$200,000 or more	200,000	1,065	3.7%	0.5	1.21

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 29,103	Percent of Households	2% MHI \$1,078.34 Percent of Actual Income	Sewer Bill \$178.26 Percent of Actual Income	Water Bill \$1,110.00 Percent of Actual Income	Flood Control Bill \$35.63 Percent of Actual Income	Sewer & Water Bill \$1,323.89 Percent of Actual Income
Less than \$10,000	10,000	1,591	5.5%	10.8	1.8	11.1	0.36	13.24
\$10,000 to \$14,999	12,500	1,688	5.8%	8.6	1.4	8.9	0.29	10.59
\$15,000 to \$24,999	20,000	3,138	10.8%	5.4	0.9	5.6	0.18	6.62
\$25,000 to \$34,999	30,000	3,201	11.0%	3.6	0.6	3.7	0.12	4.41
\$35,000 to \$49,999	42,500	3,978	13.7%	2.5	0.4	2.6	0.08	3.12
\$50,000 to \$74,999	62,500	5,019	17.2%	1.7	0.3	1.8	0.06	2.12
\$75,000 to \$99,999	87,500	4,003	13.8%	1.2	0.2	1.3	0.04	1.51
\$100,000 to \$149,999	125,000	3,759	12.9%	0.9	0.1	0.9	0.03	1.06
\$150,000 to \$199,999	175,000	1,661	5.7%	0.6	0.1	0.6	0.02	0.76
\$200,000 or more	200,000	1,065	3.7%	0.5	0.1	0.6	0.02	0.66

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 29,103	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,591	13.24	873.89	1,390,359	13,903,590
\$10,000 to \$14,999	12,500	1,688	10.59	761.39	1,285,226	12,852,263
\$15,000 to \$24,999	20,000	3,138	6.62	423.89	1,330,167	13,301,668
\$25,000 to \$34,999	30,000	3,201	4.41			
\$35,000 to \$49,999	42,500	3,978	3.12			
\$50,000 to \$74,999	62,500	5,019	2.12			
\$75,000 to \$99,999	87,500	4,003	1.51			
\$100,000 to \$149,999	125,000	3,759	1.06			
\$150,000 to \$199,999	175,000	1,661	0.76			
\$200,000 or more	200,000	1,065	0.66			

Arcadia, CA

Population 2013: 57,639

Poverty Rate 2012: 9.9%

Median Household Income (MHI), 2012: \$77,342

EPA Affordability Criteria

2% of MHI: \$1,546.84

4.5% of MHI: \$3,480.39

Current Average Cost per Household

Sewer \$ 354.52

Water \$ 1,089.26

Flood Control \$ 50.00

Total \$ 1,493.78

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 19,409	Percent of Households	CWA 2% MHI \$1,546.84 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,480.39 as Percent of Actual Income
Less than \$10,000	10,000	1,248	6.4%	15.6	34.8
\$10,000 to \$14,999	12,500	826	4.3%	12.5	27.8
\$15,000 to \$24,999	20,000	1,167	6.0%	7.8	17.4
\$25,000 to \$34,999	30,000	1,369	7.1%	5.2	11.6
\$35,000 to \$49,999	42,500	1,825	9.4%	3.7	8.2
\$50,000 to \$74,999	62,500	3,084	15.9%	2.5	5.6
\$75,000 to \$99,999	87,500	2,128	11.0%	1.8	4.0
\$100,000 to \$149,999	125,000	3,372	17.4%	1.3	2.8
\$150,000 to \$199,999	175,000	1,857	9.6%	0.9	2.0
\$200,000 or more	200,000	2,533	13.1%	0.8	1.7

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 19,409	Percent of Households	2% MHI \$1,546.84 Percent of Actual Income	Sewer Bill \$354.52 Percent of Actual Income	Water Bill \$1,089.26 Percent of Actual Income	Flood Control Bill \$50.00 Percent of Actual Income	Sewer & Water Bill \$1,493.78 Percent of Actual Income
Less than \$10,000	10,000	1,248	6.4%	15.6	3.55	10.89	0.500	14.94
\$10,000 to \$14,999	12,500	826	4.3%	12.5	2.84	8.71	0.400	11.95
\$15,000 to \$24,999	20,000	1,167	6.0%	7.8	1.77	5.45	0.250	7.47
\$25,000 to \$34,999	30,000	1,369	7.1%	5.2	1.18	3.63	0.167	4.98
\$35,000 to \$49,999	42,500	1,825	9.4%	3.7	0.83	2.56	0.118	3.51
\$50,000 to \$74,999	62,500	3,084	15.9%	2.5	0.57	1.74	0.080	2.39
\$75,000 to \$99,999	87,500	2,128	11.0%	1.8	0.41	1.24	0.057	1.71
\$100,000 to \$149,999	125,000	3,372	17.4%	1.3	0.28	0.87	0.040	1.20
\$150,000 to \$199,999	175,000	1,857	9.6%	0.9	0.20	0.62	0.029	0.85
\$200,000 or more	200,000	2,533	13.1%	0.8	0.18	0.54	0.025	0.75

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 19,409	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,248	14.94	1,043.78	1,302,637	13,026,374
\$10,000 to \$14,999	12,500	826	11.95	931.28	769,237	7,692,373
\$15,000 to \$24,999	20,000	1,167	7.47	593.78	692,941	6,929,413
\$25,000 to \$34,999	30,000	1,369	4.98	143.78	196,835	1,968,35
\$35,000 to \$49,999	42,500	1,825	3.51	-418.72		
\$50,000 to \$74,999	62,500	3,084	2.39	-1,318.72		
\$75,000 to \$99,999	87,500	2,128	1.71	-2,443.72		
\$100,000 to \$149,999	125,000	3,372	1.20	-4,131.22		
\$150,000 to \$199,999	175,000	1,857	0.85	-6,381.22		
\$200,000 or more	200,000	2,533	0.75	-7,506.22		

Azusa, CA
 Population 2013: 47,842
 County State 2012: 19,276
 Median Household Income (MHI), 2012: \$57,267
 EPA Affordability Criteria 2% of MHI: \$1,145.36
 EPA Affordability Criteria 4.5% of MHI: \$2,577.64
 Current Average Cost per Household
 Sewer: \$ 114.94
 Water: \$ 669.88
 Flood Control: \$
 Total: \$ 784.82

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 12,137	Percent of Households	CWA 2% MHI \$1,061.26 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,387.84 as Percent of Actual Income
Less than \$10,000	10,000	650	5.3%	10.6	23.88
\$10,000 to \$14,999	12,500	584	4.8%	8.5	19.10
\$15,000 to \$24,999	20,000	1,466	12.0%	5.3	11.94
\$25,000 to \$34,999	30,000	1,137	9.3%	3.5	7.96
\$35,000 to \$49,999	42,500	1,863	15.3%	2.5	5.62
\$50,000 to \$74,999	62,500	2,475	20.3%	1.7	3.82
\$75,000 to \$99,999	87,500	1,705	14.0%	1.2	2.73
\$100,000 to \$149,999	125,000	1,458	12.0%	0.8	1.91
\$150,000 to \$199,999	175,000	590	4.8%	0.6	1.36
\$200,000 or more	200,000	209	1.7%	0.5	1.19

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 12,137	Percent of Households	2% MHI \$1,061.26 Percent of Actual Income	Sewer Bill \$134.30 Percent of Actual Income	Water Bill \$595.88 Percent of Actual Income	Flood Control Bill Percent of Actual Income	Sewer & Water Bill \$730.18 Percent of Actual Income
Less than \$10,000	10,000	650	5.3%	10.6	1.34	5.96		7.30
\$10,000 to \$14,999	12,500	584	4.8%	8.5	1.07	4.77		5.84
\$15,000 to \$24,999	20,000	1,466	12.0%	5.3	0.67	2.98		3.65
\$25,000 to \$34,999	30,000	1,137	9.3%	3.5	0.45	1.99		2.43
\$35,000 to \$49,999	42,500	1,863	15.3%	2.5	0.32	1.40		1.72
\$50,000 to \$74,999	62,500	2,475	20.3%	1.7	0.21	0.95		1.17
\$75,000 to \$99,999	87,500	1,705	14.0%	1.2	0.15	0.68		0.83
\$100,000 to \$149,999	125,000	1,458	12.0%	0.8	0.11	0.48		0.58
\$150,000 to \$199,999	175,000	590	4.8%	0.6	0.08	0.34		0.42
\$200,000 or more	200,000	209	1.7%	0.5	0.07	0.30		0.37

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 12,137	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	650	7.30	280.18	182,117	1,821,170
\$10,000 to \$14,999	12,500	584	5.84	167.68	97,925	979,251
\$15,000 to \$24,999	20,000	1,466	3.65	-169.82		
\$25,000 to \$34,999	30,000	1,137	2.43	-619.82		
\$35,000 to \$49,999	42,500	1,863	1.72	-1,182.32		
\$50,000 to \$74,999	62,500	2,475	1.17	-2,082.32		
\$75,000 to \$99,999	87,500	1,705	0.83	-3,207.32		
\$100,000 to \$149,999	125,000	1,458	0.58	-4,894.82		
\$150,000 to \$199,999	175,000	590	0.42	-7,144.82		
\$200,000 or more	200,000	209	0.37	-8,269.82		

Bellflower, CA

Population: 77,593
 Poverty Rate, 2012: 15.9%
 Median Household Income (MHI), 2012: \$30,765
 EPA Affordability Criteria
 2% of MHI: \$1,015.30
 4.5% of MHI: \$2,284.43
 Current Average Cost per Household
 Sewer \$ 197.50
 Water \$ 613.00
 Flood Control \$ 26.25
 Total \$ 836.75

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households	Percent of Households	CWA 2% MHI \$1,015.30 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,284.43 as Percent of Actual Income
Less than \$10,000	10,000	1,259	5.4%	10.2	22.8
\$10,000 to \$14,999	12,500	1,336	5.7%	8.1	18.3
\$15,000 to \$24,999	20,000	2,887	12.4%	5.1	11.4
\$25,000 to \$34,999	30,000	2,361	10.2%	3.4	7.6
\$35,000 to \$49,999	42,500	3,579	15.4%	2.4	5.4
\$50,000 to \$74,999	62,500	4,900	21.1%	1.6	3.7
\$75,000 to \$99,999	87,500	2,717	11.7%	1.2	2.6
\$100,000 to \$149,999	125,000	3,113	13.4%	0.8	1.8
\$150,000 to \$199,999	175,000	733	3.2%	0.6	1.3
\$200,000 or more	200,000	372	1.6%	0.5	1.1

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households	Percent of Households	2% MHI \$1,015.30 Percent of Actual Income	Sewer Bill \$197.50 Percent of Actual Income	Water Bill \$613.00 Percent of Actual Income	Flood Control Bill \$26.25 Percent of Actual Income	Sewer & Water Bill \$836.75 Percent of Actual Income
Less than \$10,000	10,000	1,259	5.4%	10.2	1.98	6.13	0.263	8.31
\$10,000 to \$14,999	12,500	1,336	5.7%	8.1	1.58	4.90	0.210	6.69
\$15,000 to \$24,999	20,000	2,887	12.4%	5.1	0.99	3.07	0.131	4.18
\$25,000 to \$34,999	30,000	2,361	10.2%	3.4	0.66	2.04	0.088	2.79
\$35,000 to \$49,999	42,500	3,579	15.4%	2.4	0.46	1.44	0.062	1.97
\$50,000 to \$74,999	62,500	4,900	21.1%	1.6	0.32	0.98	0.042	1.34
\$75,000 to \$99,999	87,500	2,717	11.7%	1.2	0.23	0.70	0.030	0.96
\$100,000 to \$149,999	125,000	3,113	13.4%	0.8	0.16	0.49	0.021	0.67
\$150,000 to \$199,999	175,000	733	3.2%	0.6	0.11	0.35	0.015	0.48
\$200,000 or more	200,000	372	1.6%	0.5	0.10	0.31	0.013	0.42

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,259	8.37	386.75	486,918	4,869,183
\$10,000 to \$14,999	12,500	1,336	6.69	274.25	366,398	3,663,980
\$15,000 to \$24,999	20,000	2,887	4.18	-63.25		
\$25,000 to \$34,999	30,000	2,361	2.79	-513.25		
\$35,000 to \$49,999	42,500	3,579	1.97	-1,075.75		
\$50,000 to \$74,999	62,500	4,900	1.34	-1,975.75		
\$75,000 to \$99,999	87,500	2,717	0.96	-3,100.75		
\$100,000 to \$149,999	125,000	3,113	0.67	-4,788.25		
\$150,000 to \$199,999	175,000	733	0.48	-7,038.25		
\$200,000 or more	200,000	372	0.42	-8,163.25		

Beil Gardens, CA

Population: 2413,42,000

County: Butte, 2002, 20,976

Median Household Income (MHI): 2012, \$38,177

EPA 4 Household Income Distribution: 2% of MHI: \$765.44

4.5% of MHI: \$1,722.24

Current Average Cost per Household:

Water: \$627.28

Sewer: \$101.35

Flood Control: \$101.35

Total: \$829.98

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 9,928	Percent of Households	CWA 2% MHI \$765.44 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$1,722.24 as Percent of Actual Income
Less than \$10,000	10,000	643	6.48	7.65	17.22
\$10,000 to \$14,999	12,500	795	8.01	6.12	13.78
\$15,000 to \$24,999	20,000	1,538	15.49	3.83	8.61
\$25,000 to \$34,999	30,000	1,611	16.23	2.55	5.74
\$35,000 to \$49,999	42,500	1,741	17.54	1.80	4.05
\$50,000 to \$74,999	62,500	1,922	19.36	1.22	2.76
\$75,000 to \$99,999	87,500	1,048	10.56	0.87	1.97
\$100,000 to \$149,999	125,000	457	4.60	0.61	1.38
\$150,000 to \$199,999	175,000	135	1.36	0.44	0.98
\$200,000 or more	200,000	38	0.38	0.38	0.86

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 9,928	Percent of Households	2% MHI \$765.44 Percent of Actual Income	Sewer Bill \$150.00 Percent of Actual Income	Water Bill \$627.28 Percent of Actual Income	Flood Control Bill \$101.35 Percent of Actual Income	Sewer & Water Bill \$878.63 Percent of Actual Income
Less than \$10,000	10,000	643	6.48	7.65	1.50	6.27	1.01	8.79
\$10,000 to \$14,999	12,500	795	8.01	6.12	1.20	5.02	0.81	7.03
\$15,000 to \$24,999	20,000	1,538	15.49	3.83	0.75	3.14	0.51	4.39
\$25,000 to \$34,999	30,000	1,611	16.23	2.55	0.50	2.09	0.34	2.93
\$35,000 to \$49,999	42,500	1,741	17.54	1.80	0.35	1.48	0.24	2.07
\$50,000 to \$74,999	62,500	1,922	19.36	1.22	0.24	1.00	0.16	1.41
\$75,000 to \$99,999	87,500	1,048	10.56	0.87	0.17	0.72	0.12	1.00
\$100,000 to \$149,999	125,000	457	4.60	0.61	0.12	0.50	0.08	0.70
\$150,000 to \$199,999	175,000	135	1.36	0.44	0.09	0.36	0.06	0.50
\$200,000 or more	200,000	38	0.38	0.38	0.08	0.31	0.05	0.44

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 9,928	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	643	8.79	428.63	275,609	2,756,091
\$10,000 to \$14,999	12,500	795	7.03	316.13	251,323	2,513,234
\$15,000 to \$24,999	20,000	1,538	4.39	-21.37		
\$25,000 to \$34,999	30,000	1,611	2.93	-471.37		
\$35,000 to \$49,999	42,500	1,741	2.07	-1,033.87		
\$50,000 to \$74,999	62,500	1,922	1.41	-1,933.87		
\$75,000 to \$99,999	87,500	1,048	1.00	-3,058.87		
\$100,000 to \$149,999	125,000	457	0.70	-4,746.37		
\$150,000 to \$199,999	175,000	135	0.50	-6,996.37		
\$200,000 or more	200,000	38	0.44	-8,121.37		

Bradbury, CA

Population 2013: 57,639

Poverty Rate 2012: 9.9%

Median Household Income
(MHI), 2012: \$77,342

EPA Affordability Criteria

2% of MHI: \$1,546.84

4.5% of MHI: \$3,480.39

Current Average Cost per
Household

Sewer	\$ 354.52
Water	\$ 1,089.26
Flood Control	\$ 50.00
Total	\$ 1,493.78

Charmont, CA

Population, 2011: 14,824

Primary Plan, 2012: 4.9%

Median Household Income (MHI), 2012: \$30,734

EPA Affordability Criteria

2% of MHI: \$1,229.38

4.5% of MHI: \$1,387.69

Current Average Cost per Household

Water: \$ 111.23

Waste: \$1,244.89

Total: \$ 1,356.12

Total: \$ 1,356.12

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households (1,651)	Percent of Households	CWA 2% MHI \$1,615.08 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,663.93 as Percent of Actual Income
Less than \$10,000	10,000	610	5.2%	16.2	36.6
\$10,000 to \$14,999	12,500	340	2.9%	12.9	29.3
\$15,000 to \$24,999	20,000	774	6.6%	8.1	18.3
\$25,000 to \$34,999	30,000	740	6.4%	5.4	12.2
\$35,000 to \$49,999	42,500	1,221	10.5%	3.8	8.6
\$50,000 to \$74,999	62,500	1,771	15.2%	2.6	5.9
\$75,000 to \$99,999	87,500	1,329	11.4%	1.8	4.2
\$100,000 to \$149,999	125,000	1,873	16.1%	1.3	2.9
\$150,000 to \$199,999	175,000	1,574	13.5%	0.9	2.1
\$200,000 or more	200,000	1,419	12.2%	0.8	1.8

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households (1,651)	Percent of Households	2% MHI \$1,615.08 as Percent of Actual Income	Sewer Bill \$113.23 as Percent of Actual Income	Water Bill \$1,344.00 as Percent of Actual Income	Flood Control Bill \$41.55 as Percent of Actual Income	Sewer & Water Bill \$1,498.78 as Percent of Actual Income
Less than \$10,000	10,000	610	5.2%	16.2	1.13	13.44	0.416	14.99
\$10,000 to \$14,999	12,500	340	2.9%	12.9	0.91	10.75	0.332	11.99
\$15,000 to \$24,999	20,000	774	6.6%	8.1	0.57	6.72	0.208	7.49
\$25,000 to \$34,999	30,000	740	6.4%	5.4	0.38	4.48	0.139	5.00
\$35,000 to \$49,999	42,500	1,221	10.5%	3.8	0.27	3.16	0.098	3.53
\$50,000 to \$74,999	62,500	1,771	15.2%	2.6	0.18	2.15	0.066	2.40
\$75,000 to \$99,999	87,500	1,329	11.4%	1.8	0.13	1.54	0.047	1.71
\$100,000 to \$149,999	125,000	1,873	16.1%	1.3	0.09	1.08	0.033	1.20
\$150,000 to \$199,999	175,000	1,574	13.5%	0.9	0.06	0.77	0.024	0.86
\$200,000 or more	200,000	1,419	12.2%	0.8	0.06	0.67	0.021	0.75

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households (1,651)	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	610	14.99	1,048.78	639,756	6,397,558
\$10,000 to \$14,999	12,500	340	11.99	936.28	318,335	3,183,352
\$15,000 to \$24,999	20,000	774	7.49	598.78	463,456	4,634,557
\$25,000 to \$34,999	30,000	740	5.00	148.78	110,097	1,100,972
\$35,000 to \$49,999	42,500	1,221	3.53	-413.72		
\$50,000 to \$74,999	62,500	1,771	2.40	-1,313.72		
\$75,000 to \$99,999	87,500	1,329	1.71	-2,438.72		
\$100,000 to \$149,999	125,000	1,873	1.20	-4,126.22		
\$150,000 to \$199,999	175,000	1,574	0.86	-6,376.22		
\$200,000 or more	200,000	1,419	0.75	-7,501.22		

Diamond Bar, CA

Population, 2013: 56,449
 Poverty Rate, 2012: 5.2%
 Median Household Income (MHI), 2012: \$90,181
 EPA Affordability Criteria
 2% of MHI: \$1,803.62
 4.5% of MHI: \$4,058.15
 Current Average Cost per Household
 Sewer \$ 198.79
 Water \$ 902.26
 Flood Control \$ 36.33
 Total \$ 1,137.38

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 17,550	Percent of Households	CWA 2% MHI \$1,803.62 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$4,058.15 as Percent of Actual Income
Less than \$10,000	10,000	395	2.3%	18.0	40.6
\$10,000 to \$14,999	12,500	243	1.4%	14.4	32.5
\$15,000 to \$24,999	20,000	730	4.2%	9.0	20.3
\$25,000 to \$34,999	30,000	1,093	6.2%	6.0	13.5
\$35,000 to \$49,999	42,500	1,684	9.6%	4.2	9.5
\$50,000 to \$74,999	62,500	3,246	18.5%	2.9	6.5
\$75,000 to \$99,999	87,500	2,373	13.5%	2.1	4.6
\$100,000 to \$149,999	125,000	3,779	21.5%	1.4	3.2
\$150,000 to \$199,999	175,000	2,081	11.9%	1.0	2.3
\$200,000 or more	200,000	1,926	11.0%	0.9	2.0

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 17,550	Percent of Households	2% MHI \$1,803.62 as Percent of Actual Income	Sewer Bill \$198.79 as Percent of Actual Income	Water Bill \$902.26 as Percent of Actual Income	Flood Control Bill \$36.33 as Percent of Actual Income	Sewer & Water Bill \$1,137.38 as Percent of Actual Income
Less than \$10,000	10,000	395	2.3%	18.0	1.99	9.02	0.363	11.37
\$10,000 to \$14,999	12,500	243	1.4%	14.4	1.59	7.22	0.291	9.10
\$15,000 to \$24,999	20,000	730	4.2%	9.0	0.99	4.51	0.182	5.69
\$25,000 to \$34,999	30,000	1,093	6.2%	6.0	0.66	3.01	0.121	3.79
\$35,000 to \$49,999	42,500	1,684	9.6%	4.2	0.47	2.12	0.085	2.68
\$50,000 to \$74,999	62,500	3,246	18.5%	2.9	0.32	1.44	0.058	1.82
\$75,000 to \$99,999	87,500	2,373	13.5%	2.1	0.23	1.03	0.042	1.30
\$100,000 to \$149,999	125,000	3,779	21.5%	1.4	0.16	0.72	0.029	0.91
\$150,000 to \$199,999	175,000	2,081	11.9%	1.0	0.11	0.52	0.021	0.65
\$200,000 or more	200,000	1,926	11.0%	0.9	0.10	0.45	0.018	0.57

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 17,550	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	395	11.37	687.38	271,515	2,715,151
\$10,000 to \$14,999	12,500	243	9.10	574.88	139,696	1,396,958
\$15,000 to \$24,999	20,000	730	5.69	237.38	173,287	1,732,874
\$25,000 to \$34,999	30,000	1,093	3.79	-212.62		
\$35,000 to \$49,999	42,500	1,684	2.68	-775.12		
\$50,000 to \$74,999	62,500	3,246	1.82	-1,675.12		
\$75,000 to \$99,999	87,500	2,373	1.30	-2,800.12		
\$100,000 to \$149,999	125,000	3,779	0.91	-4,487.62		
\$150,000 to \$199,999	175,000	2,081	0.65	-6,737.62		
\$200,000 or more	200,000	1,926	0.57	-7,862.62		

Downey, CA
 Population, 2013: 113,342
 Poverty Rate, 2013: 11.1%
 Single-Family Dwelling Units (SFH), 2013: 44,613
 EPA Affordability Criteria
 2% of MHI: \$1,202.64
 4.5% of MHI: \$2,705.94
 Current Average Cost per Household
 Sewer: \$ 296.18
 Water: \$ 891.72
 Flood Control: \$ 346.64
 Total: \$ 1,434.54

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 32,867	Percent of Households	CWA 2% MHI \$1,202.64 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,705.94 as Percent of Actual Income
Less than \$10,000	10,000	1,248	3.8%	12.0	27.1
\$10,000 to \$14,999	12,500	1,328	4.0%	9.6	21.6
\$15,000 to \$24,999	20,000	3,403	10.4%	6.0	13.5
\$25,000 to \$34,999	30,000	3,435	10.5%	4.0	9.0
\$35,000 to \$49,999	42,500	4,192	12.8%	2.8	6.4
\$50,000 to \$74,999	62,500	7,060	21.5%	1.9	4.3
\$75,000 to \$99,999	87,500	4,483	13.6%	1.4	3.1
\$100,000 to \$149,999	125,000	4,806	14.6%	1.0	2.2
\$150,000 to \$199,999	175,000	1,865	5.7%	0.7	1.5
\$200,000 or more	200,000	1,047	3.2%	0.6	1.4

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 32,867	Percent of Households	2% MHI \$1,202.64 as Percent of Actual Income	Sewer Bill \$216.18 as Percent of Actual Income	Water Bill \$891.72 as Percent of Actual Income	Flood Control Bill \$346.64 as Percent of Actual Income	Sewer & Water Bill \$1,142.54 as Percent of Actual Income
Less than \$10,000	10,000	1,248	3.8%	12.0	2.16	8.92	0.346	11.43
\$10,000 to \$14,999	12,500	1,328	4.0%	9.6	1.73	7.13	0.277	9.14
\$15,000 to \$24,999	20,000	3,403	10.4%	6.0	1.08	4.46	0.173	5.71
\$25,000 to \$34,999	30,000	3,435	10.5%	4.0	0.72	2.97	0.115	3.81
\$35,000 to \$49,999	42,500	4,192	12.8%	2.8	0.51	2.10	0.082	2.69
\$50,000 to \$74,999	62,500	7,060	21.5%	1.9	0.35	1.43	0.055	1.83
\$75,000 to \$99,999	87,500	4,483	13.6%	1.4	0.25	1.02	0.040	1.31
\$100,000 to \$149,999	125,000	4,806	14.6%	1.0	0.17	0.71	0.028	0.91
\$150,000 to \$199,999	175,000	1,865	5.7%	0.7	0.12	0.51	0.020	0.65
\$200,000 or more	200,000	1,047	3.2%	0.6	0.11	0.45	0.017	0.57

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 32,867	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,248	11.43	692.54	864,290	8,642,899
\$10,000 to \$14,999	12,500	1,328	9.14	580.04	770,293	7,702,931
\$15,000 to \$24,999	20,000	3,403	5.71	242.54	825,364	8,253,636
\$25,000 to \$34,999	30,000	3,435	3.81	-207.46		
\$35,000 to \$49,999	42,500	4,192	2.69	-769.96		
\$50,000 to \$74,999	62,500	7,060	1.83	-1,669.96		
\$75,000 to \$99,999	87,500	4,483	1.31	-2,794.96		
\$100,000 to \$149,999	125,000	4,806	0.91	-4,482.46		
\$150,000 to \$199,999	175,000	1,865	0.65	-6,732.46		
\$200,000 or more	200,000	1,047	0.57	-7,857.46		

Escondido, CA

Population, 2013: 148,738
 Poverty Rate, 2012: 18.3%
 Median Household Income (MHI), 2012: \$49,787
 EPA Affordability Criteria
 2% of MHI: \$995.74
 4.5% of MHI: \$2,240.22
 Current Average Cost per Household
 Sewer \$ 220.00
 Water \$ 1,460.00
 Flood Control \$ 50.00
 Total \$ 1,730.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 44,474	Percent of Households	CWA 2% MHI \$995.74 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,240.42 as Percent of Actual Income
Less than \$10,000	10,000	2,959	6.7%	10.0	22.4
\$10,000 to \$14,999	12,500	1,917	4.3%	8.0	17.9
\$15,000 to \$24,999	20,000	4,904	11.0%	5.0	11.2
\$25,000 to \$34,999	30,000	5,536	12.4%	3.3	7.5
\$35,000 to \$49,999	42,500	7,031	15.8%	2.3	5.3
\$50,000 to \$74,999	62,500	7,949	17.9%	1.6	3.6
\$75,000 to \$99,999	87,500	4,888	11.0%	1.1	2.6
\$100,000 to \$149,999	125,000	5,447	12.2%	0.8	1.8
\$150,000 to \$199,999	175,000	2,189	4.9%	0.6	1.3
\$200,000 or more	200,000	1,654	3.7%	0.5	1.1

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 44,474	Percent of Households	2% MHI \$995.74 Percent of Actual Income	Sewer Bill \$220.00 Percent of Actual Income	Water Bill \$1,460.00 Percent of Actual Income	Flood Control Bill \$50.00 Percent of Actual Income	Sewer & Water Bill \$1,730.00 Percent of Actual Income
Less than \$10,000	10,000	2,959	6.7%	10.0	2.20	14.60	0.500	17.30
\$10,000 to \$14,999	12,500	1,917	4.3%	8.0	1.76	11.68	0.400	13.84
\$15,000 to \$24,999	20,000	4,904	11.0%	5.0	1.10	7.30	0.250	8.65
\$25,000 to \$34,999	30,000	5,536	12.4%	3.3	0.73	4.87	0.167	5.77
\$35,000 to \$49,999	42,500	7,031	15.8%	2.3	0.52	3.44	0.118	4.07
\$50,000 to \$74,999	62,500	7,949	17.9%	1.6	0.35	2.34	0.080	2.77
\$75,000 to \$99,999	87,500	4,888	11.0%	1.1	0.25	1.67	0.057	1.98
\$100,000 to \$149,999	125,000	5,447	12.2%	0.8	0.18	1.17	0.040	1.38
\$150,000 to \$199,999	175,000	2,189	4.9%	0.6	0.13	0.83	0.029	0.99
\$200,000 or more	200,000	1,654	3.7%	0.5	0.11	0.73	0.025	0.87

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 44,474	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	2,959	3.15	1,280	3,787,520	37,875,200
\$10,000 to \$14,999	12,500	1,917	2.52	1,168	2,238,098	22,380,975
\$15,000 to \$24,999	20,000	4,904	1.58	830	4,070,320	40,703,200
\$25,000 to \$34,999	30,000	5,536	1.05	380	2,103,680	21,036,800
\$35,000 to \$49,999	42,500	7,031	0.74	-183		
\$50,000 to \$74,999	62,500	7,949	0.50	-1,083		
\$75,000 to \$99,999	87,500	4,888	0.36	-2,208		
\$100,000 to \$149,999	125,000	5,447	0.25	-3,895		
\$150,000 to \$199,999	175,000	2,189	0.18	-6,143		
\$200,000 or more	200,000	1,654	0.16	-7,270		

Chico, CA

Population: 26,131 (2014)

Property Rate: 2.11% (2014)

Median Household Income: \$34,294 (2013)

EPA Affordability Criteria: 4.5% of MHI: \$1,547.84

Current Average Cost per Household:

Water: \$ 152.89

Sewer: \$ 267.29

Flood Control: \$ 32.61

Total: \$ 452.79

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 16,403	Percent of Households	CWA 2% MHI \$1,492.38 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,357.86 as Percent of Actual Income
Less than \$10,000	10,000	599	3.7%	14.9	33.58
\$10,000 to \$14,999	12,500	504	3.1%	11.9	26.86
\$15,000 to \$24,999	20,000	958	5.8%	7.5	16.79
\$25,000 to \$34,999	30,000	1,272	7.8%	5.0	11.19
\$35,000 to \$49,999	42,500	1,869	11.4%	3.5	7.90
\$50,000 to \$74,999	62,500	3,049	18.6%	2.4	5.37
\$75,000 to \$99,999	87,500	2,490	15.2%	1.7	3.84
\$100,000 to \$149,999	125,000	3,092	18.9%	1.2	2.69
\$150,000 to \$199,999	175,000	1,294	7.9%	0.9	1.92
\$200,000 or more	200,000	1,276	7.8%	0.7	1.68

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 16,403	Percent of Households	2% MHI \$1,492.38 Percent of Actual Income	Sewer Bill \$152.00 Percent of Actual Income	Water Bill \$967.50 Percent of Actual Income	Flood Control Bill \$32.61 Percent of Actual Income	Sewer & Water Bill \$1,172.11 Percent of Actual Income
Less than \$10,000	10,000	599	3.7%	14.9	1.52	9.68	0.526	11.72
\$10,000 to \$14,999	12,500	504	3.1%	11.9	1.22	7.74	0.421	9.38
\$15,000 to \$24,999	20,000	958	5.8%	7.5	0.76	4.84	0.263	5.86
\$25,000 to \$34,999	30,000	1,272	7.8%	5.0	0.51	3.23	0.175	3.91
\$35,000 to \$49,999	42,500	1,869	11.4%	3.5	0.36	2.28	0.124	2.76
\$50,000 to \$74,999	62,500	3,049	18.6%	2.4	0.24	1.55	0.084	1.88
\$75,000 to \$99,999	87,500	2,490	15.2%	1.7	0.17	1.11	0.060	1.34
\$100,000 to \$149,999	125,000	3,092	18.9%	1.2	0.12	0.77	0.042	0.94
\$150,000 to \$199,999	175,000	1,294	7.9%	0.9	0.09	0.55	0.030	0.67
\$200,000 or more	200,000	1,276	7.8%	0.7	0.08	0.48	0.026	0.59

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 16,403	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	599	11.72	722.11	432,544	4,325,439
\$10,000 to \$14,999	12,500	504	9.38	609.61	307,243	3,072,434
\$15,000 to \$24,999	20,000	958	5.86	272.11	260,681	2,606,814
\$25,000 to \$34,999	30,000	1,272	3.91	-177.89		
\$35,000 to \$49,999	42,500	1,869	2.76	-740.39		
\$50,000 to \$74,999	62,500	3,049	1.88	-1,640.39		
\$75,000 to \$99,999	87,500	2,490	1.34	-2,765.39		
\$100,000 to \$149,999	125,000	3,092	0.94	-4,452.89		
\$150,000 to \$199,999	175,000	1,294	0.67	-6,702.89		
\$200,000 or more	200,000	1,276	0.59	-7,827.89		

Inglewood, CA

Population, 2013: 111,542

Poverty Rate, 2012: 20.1

Median Household Income (MHI), 2012: \$44,538

EPA Affordability Criteria

2% of MHI: \$891.16

4.5% of MHI: \$2,005.11

Current Average Cost per Household

Sewer \$ 90.00

Water \$ 860.00

Flood Control \$ 58.00

Total \$1,008.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

<i>Arcadia Household Income Distribution</i>	<i>Household Income</i>	<i>Number of Households</i> <i>36,681</i>	<i>Percent of Households</i>	<i>CWA 2% MHI \$891.16 as Percent of Actual Income</i>	<i>CWA & SDWA 4.5% MHI \$2,005.11 as Percent of Actual Income</i>
Less than \$10,000	10,000	2,393	6.5%	8.91	20.05
\$10,000 to \$14,999	12,500	2,600	7.1%	7.13	16.04
\$15,000 to \$24,999	20,000	4,932	13.4%	4.46	10.03
\$25,000 to \$34,999	30,000	5,012	13.7%	2.97	6.68
\$35,000 to \$49,999	42,500	5,138	14.0%	2.10	4.72
\$50,000 to \$74,999	62,500	6,908	18.8%	1.43	3.21
\$75,000 to \$99,999	87,500	4,363	11.9%	1.02	2.29
\$100,000 to \$149,999	125,000	3,680	10.0%	0.71	1.60
\$150,000 to \$199,999	175,000	986	2.7%	0.51	1.15
\$200,000 or more	200,000	669	1.8%	0.45	1.00

1. Water and sewer averages are based on 14 units of consumption which may be high for lower income households. (Ray Yeghayan, City of Inglewood, CA, September 2014); due to the limited number of hook-ups in Inglewood that are serviced by the city it is too complex to match cost per household to hook-ups that represent the entire city; which is why Tables 2 and 3 were not done.

City of Concord Financials, CA
 Population: 2011: 26,523
 Property Tax: 2012: 1.1%
 Median Household Income: 2011: \$33,027
 EPA's Block's Fee Criteria
 2% of MHI: \$3,098.04
 4.5% of MHI: \$6,972.62
 Current Average Cost per Household:
 Sewer: \$ 136.00
 Water: \$ 2,345.00
 Flood Control: \$ 65.00
 Total: \$ 2,546.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 6,751	Percent of Households	CWA 2% MHI \$3,098.04 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$6,972.62 as Percent of Actual Income
Less than \$10,000	10,000	81	1.2%	31.0	69.7
\$10,000 to \$14,999	12,500	69	1.0%	24.8	55.8
\$15,000 to \$24,999	20,000	227	3.4%	15.5	34.9
\$25,000 to \$34,999	30,000	264	3.9%	10.3	23.2
\$35,000 to \$49,999	42,500	352	5.2%	7.3	16.4
\$50,000 to \$74,999	62,500	537	8.0%	5.0	11.2
\$75,000 to \$99,999	87,500	462	6.8%	3.5	8.0
\$100,000 to \$149,999	125,000	1,294	19.2%	2.5	5.6
\$150,000 to \$199,999	175,000	857	12.7%	1.8	4.0
\$200,000 or more	200,000	2,608	38.6%	1.5	3.5

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 6,751	Percent of Households	2% MHI \$3,098.04 Percent of Actual Income	Sewer Bill \$330 Percent of Actual Income	Water Bill \$2,345 Percent of Actual Income	Flood Control Bill \$65 Percent of Actual Income	Sewer & Water Bill \$2,640 Percent of Actual Income
Less than \$10,000	10,000	81	1.2%	31.0	3.30	22.45	0.650	26.40
\$10,000 to \$14,999	12,500	69	1.0%	24.8	2.64	17.96	0.520	21.12
\$15,000 to \$24,999	20,000	227	3.4%	15.5	1.65	11.23	0.325	13.20
\$25,000 to \$34,999	30,000	264	3.9%	10.3	1.10	7.48	0.217	8.80
\$35,000 to \$49,999	42,500	352	5.2%	7.3	0.78	5.28	0.153	6.21
\$50,000 to \$74,999	62,500	537	8.0%	5.0	0.53	3.59	0.104	4.22
\$75,000 to \$99,999	87,500	462	6.8%	3.5	0.38	2.57	0.074	3.02
\$100,000 to \$149,999	125,000	1,294	19.2%	2.5	0.26	1.80	0.052	2.11
\$150,000 to \$199,999	175,000	857	12.7%	1.8	0.19	1.28	0.037	1.51
\$200,000 or more	200,000	2,608	38.6%	1.5	0.17	1.12	0.033	1.32

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 6,751	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	81	26.40	2,190.00	177,390	1,773,900
\$10,000 to \$14,999	12,500	69	21.12	2,077.50	143,348	1,433,475
\$15,000 to \$24,999	20,000	227	13.20	1,740.00	394,980	3,949,800
\$25,000 to \$34,999	30,000	264	8.80	1,290.00	340,560	3,405,600
\$35,000 to \$49,999	42,500	352	6.21	727.50	256,080	2,560,800
\$50,000 to \$74,999	62,500	537	4.22	-172.50		
\$75,000 to \$99,999	87,500	462	3.02	-1,297.50		
\$100,000 to \$149,999	125,000	1,294	2.11	-2,985.00		
\$150,000 to \$199,999	175,000	857	1.51	-5,235.00		
\$200,000 or more	200,000	2,608	1.32	-6,360.00		

La Mirada, CA

Population, 2013: 49,133

Poverty Rate, 2012: 6.2%

Median Household Income (MHI), 2012: \$81,319

EPA Affordability Criteria

2% of MHI: \$1,626.38

4.5% of MHI: \$3,659.36

Current Average Cost per Household

Sewer \$ 189.50

Water \$ 995.75

Flood Control \$ 28.39

Total \$ 1,213.64

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 14,152	Percent of Households	CWA 2% MHI \$1,626.38 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,659.36 as Percent of Actual Income
Less than \$10,000	10,000	373	2.64	16.26	36.59
\$10,000 to \$14,999	12,500	418	2.95	13.01	29.27
\$15,000 to \$24,999	20,000	1,194	8.44	8.13	18.30
\$25,000 to \$34,999	30,000	1,120	7.91	5.42	12.20
\$35,000 to \$49,999	42,500	1,378	9.74	3.83	8.61
\$50,000 to \$74,999	62,500	2,047	14.46	2.60	5.85
\$75,000 to \$99,999	87,500	2,142	15.14	1.86	4.18
\$100,000 to \$149,999	125,000	3,286	23.22	1.30	2.93
\$150,000 to \$199,999	175,000	1,445	10.21	0.93	2.09
\$200,000 or more	200,000	749	5.29	0.81	1.83

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 14,152	Percent of Households	2% MHI \$1,626.38 as Percent of Actual Income	Sewer Bill \$354.52 as Percent of Actual Income	Water Bill \$1,089.26 as Percent of Actual Income	Flood Control Bill \$50.00 as Percent of Actual Income	Sewer & Water Bill \$1,213.64 as Percent of Actual Income
Less than \$10,000	10,000	373	2.64	16.26	1.90	9.96	0.28	12.14
\$10,000 to \$14,999	12,500	418	2.95	13.01	1.52	7.97	0.23	9.71
\$15,000 to \$24,999	20,000	1,194	8.44	8.13	0.95	4.98	0.14	6.07
\$25,000 to \$34,999	30,000	1,120	7.91	5.42	0.63	3.32	0.09	4.05
\$35,000 to \$49,999	42,500	1,378	9.74	3.83	0.45	2.34	0.07	2.86
\$50,000 to \$74,999	62,500	2,047	14.46	2.60	0.30	1.59	0.05	1.94
\$75,000 to \$99,999	87,500	2,142	15.14	1.86	0.22	1.14	0.03	1.39
\$100,000 to \$149,999	125,000	3,286	23.22	1.30	0.15	0.80	0.02	0.97
\$150,000 to \$199,999	175,000	1,445	10.21	0.93	0.11	0.57	0.02	0.69
\$200,000 or more	200,000	749	5.29	0.81	0.09	0.50	0.01	0.61

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 14,152	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	373	12.14	763.64	284,838	2,848,377
\$10,000 to \$14,999	12,500	418	9.71	651.14	272,177	2,721,765
\$15,000 to \$24,999	20,000	1,194	6.07	313.64	374,486	3,744,862
\$25,000 to \$34,999	30,000	1,120	4.05	-136.36		
\$35,000 to \$49,999	42,500	1,378	2.86	-698.86		
\$50,000 to \$74,999	62,500	2,047	1.94	-1,598.86		
\$75,000 to \$99,999	87,500	2,142	1.39	-2,723.86		
\$100,000 to \$149,999	125,000	3,286	0.97	-4,411.36		
\$150,000 to \$199,999	175,000	1,445	0.69	-6,661.36		
\$200,000 or more	200,000	749	0.61	-7,786.36		

La Verne, CA
 Population, 2011: 11,858
 Property Tax, 2012: 7.2%
 Median Household Income (MHI), 2012: \$39,319
 EPA Affordability Criteria
 2% of MHI: \$1,530
 4.5% of MHI: \$3,443
 Current Average Cost per Household
 Sewer: \$ 243.89
 Water: \$ 1,661.12
 Flood Control: \$ 229.96
 Total: \$ 1,936.08

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 10,854	Percent of Households	CWA 2% MHI \$1,530 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,443 as Percent of Actual Income
Less than \$10,000	10,000	390	3.6%	15.3	34.43
\$10,000 to \$14,999	12,500	431	4.0%	12.2	27.55
\$15,000 to \$24,999	20,000	934	8.6%	7.7	17.22
\$25,000 to \$34,999	30,000	664	6.1%	5.1	11.48
\$35,000 to \$49,999	42,500	1,411	13.0%	3.6	8.10
\$50,000 to \$74,999	62,500	1,549	14.3%	2.4	5.51
\$75,000 to \$99,999	87,500	1,489	13.7%	1.7	3.94
\$100,000 to \$149,999	125,000	2,053	18.9%	1.2	2.75
\$150,000 to \$199,999	175,000	1,127	10.4%	0.9	1.97
\$200,000 or more	200,000	806	7.4%	0.8	1.72

Table 2: Cost per Household for Current Water Service Components

Arcadia Household Income Distribution	Household Income	Number of Households 10,854	Percent of Households	2% MHI \$1,530.38 Percent of Actual Income	Sewer Bill \$245.00 Percent of Actual Income	Water Bill \$1,661.12 Percent of Actual Income	Flood Control Bill \$229.96 Percent of Actual Income	Sewer & Water Bill \$1,936.08 Percent of Actual Income
Less than \$10,000	10,000	390	3.6%	15.3	2.45	16.61	0.300	19.36
\$10,000 to \$14,999	12,500	431	4.0%	12.2	1.96	13.29	0.240	15.49
\$15,000 to \$24,999	20,000	934	8.6%	7.7	1.23	8.31	0.150	9.68
\$25,000 to \$34,999	30,000	664	6.1%	5.1	0.82	5.54	0.100	6.45
\$35,000 to \$49,999	42,500	1,411	13.0%	3.6	0.58	3.91	0.070	4.56
\$50,000 to \$74,999	62,500	1,549	14.3%	2.4	0.39	2.66	0.048	3.10
\$75,000 to \$99,999	87,500	1,489	13.7%	1.7	0.28	1.90	0.034	2.21
\$100,000 to \$149,999	125,000	2,053	18.9%	1.2	0.20	1.33	0.024	1.55
\$150,000 to \$199,999	175,000	1,127	10.4%	0.9	0.14	0.95	0.017	1.11
\$200,000 or more	200,000	806	7.4%	0.8	0.12	0.83	0.015	0.97

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 10,854	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	390	19.36	1,486.08	579,571	5,295,712
\$10,000 to \$14,999	12,500	431	15.49	1,373.58	592,013	5,920,130
\$15,000 to \$24,999	20,000	934	9.68	1,036.08	967,699	9,676,987
\$25,000 to \$34,999	30,000	664	6.45	586.08	389,157	3,891,571
\$35,000 to \$49,999	42,500	1,411	4.56	23.58	33,271	332,714
\$50,000 to \$74,999	62,500	1,549	3.10			
\$75,000 to \$99,999	87,500	1,489	2.21			
\$100,000 to \$149,999	125,000	2,053	1.55			
\$150,000 to \$199,999	175,000	1,127	1.11			
\$200,000 or more	200,000	806	0.97			

Lakewood, CA

Population: 2012: 41,121

Property Tax: 2012: 7.40%

Median Household Income (MHI): 2012: \$74,679

EPA Affordability Criteria
 2% of MHI: \$1,577.42
 4.5% of MHI: \$3,344.42

Current Average Cost per Household

Water: \$ 293.46
 Sewer: \$ 491.73
 Flood Control: \$ 239.46
 Total: \$ 1,024.65

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 26,172	Percent of Households	CWA 2% MHI \$1,577.42 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,344.42 as Percent of Actual Income
Less than \$10,000	10,000	816	3.1%	15.8	35.5
\$10,000 to \$14,999	12,500	593	2.3%	12.6	28.4
\$15,000 to \$24,999	20,000	1,377	5.3%	7.9	17.7
\$25,000 to \$34,999	30,000	1,802	6.9%	5.3	11.8
\$35,000 to \$49,999	42,500	2,936	11.2%	3.7	8.4
\$50,000 to \$74,999	62,500	4,954	18.9%	2.5	5.7
\$75,000 to \$99,999	87,500	4,320	16.5%	1.8	4.1
\$100,000 to \$149,999	125,000	6,008	23.0%	1.3	2.8
\$150,000 to \$199,999	175,000	2,415	9.2%	0.9	2.0
\$200,000 or more	200,000	951	3.6%	0.8	1.8

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 26,172	Percent of Households	2% MHI \$1,577.42 Percent of Actual Income	Sewer Bill \$201.50 Percent of Actual Income	Water Bill \$491.73 Percent of Actual Income	Flood Control Bill \$50.23 Percent of Actual Income	Sewer & Water Bill \$743.46 Percent of Actual Income
Less than \$10,000	10,000	816	3.1%	15.8	2.02	4.92	0.502	7.43
\$10,000 to \$14,999	12,500	593	2.3%	12.6	1.61	3.93	0.402	5.95
\$15,000 to \$24,999	20,000	1,377	5.3%	7.9	1.01	2.46	0.251	3.72
\$25,000 to \$34,999	30,000	1,802	6.9%	5.3	0.67	1.64	0.167	2.48
\$35,000 to \$49,999	42,500	2,936	11.2%	3.7	0.47	1.16	0.118	1.75
\$50,000 to \$74,999	62,500	4,954	18.9%	2.5	0.32	0.79	0.080	1.19
\$75,000 to \$99,999	87,500	4,320	16.5%	1.8	0.23	0.56	0.057	0.85
\$100,000 to \$149,999	125,000	6,008	23.0%	1.3	0.16	0.39	0.040	0.59
\$150,000 to \$199,999	175,000	2,415	9.2%	0.9	0.12	0.28	0.029	0.42
\$200,000 or more	200,000	951	3.6%	0.8	0.10	0.25	0.025	0.37

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 26,172	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	816	7.43	293.46	239,463	2,394,634
\$10,000 to \$14,999	12,500	593	5.95	180.96	107,309	1,073,093
\$15,000 to \$24,999	20,000	1,377	3.72	-156.54		
\$25,000 to \$34,999	30,000	1,802	2.48	-606.54		
\$35,000 to \$49,999	42,500	2,936	1.75	-1,169.04		
\$50,000 to \$74,999	62,500	4,954	1.19	-2,069.04		
\$75,000 to \$99,999	87,500	4,320	0.85	-3,194.04		
\$100,000 to \$149,999	125,000	6,008	0.59	-4,881.54		
\$150,000 to \$199,999	175,000	2,415	0.42	-7,131.54		
\$200,000 or more	200,000	951	0.37	-8,256.54		

San Jose, CA
 Population, 2011: 291,786
 Property Tax, 2012: 11.5%
 Median Household Income, 2011: \$67,899
 EPA Affordability Criteria
 2% of MHI: \$1,357.98
 4.5% of MHI: \$3,056.45
 Current Average Cost per Household:
 Sewer \$ 218.20
 Water \$ 1,000.56
 Flood Control \$ 14.48
 Total \$ 1,233.24

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 7,894	Percent of Households	CWA 2% MHI \$1,257.98 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,810.46 as Percent of Actual Income
Less than \$10,000	10,000	464	12.95	12.6	28.3
\$10,000 to \$14,999	12,500	520	10.36	10.1	22.6
\$15,000 to \$24,999	20,000	784	6.48	6.3	14.2
\$25,000 to \$34,999	30,000	594	4.32	4.2	9.4
\$35,000 to \$49,999	42,500	885	3.05	3.0	6.7
\$50,000 to \$74,999	62,500	1,644	2.07	2.0	4.5
\$75,000 to \$99,999	87,500	878	1.48	1.4	3.2
\$100,000 to \$149,999	125,000	1,284	1.04	1.0	2.3
\$150,000 to \$199,999	175,000	506	0.74	0.7	1.6
\$200,000 or more	200,000	335	0.65	0.6	1.4

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 7,894	Percent of Households	2% MHI \$1,257.98 Percent of Actual Income	Sewer Bill \$258.20 Percent of Actual Income	Water Bill \$1,000.56 Percent of Actual Income	Flood Control Bill \$36.45 Percent of Actual Income	Sewer & Water Bill \$1,295.21 Percent of Actual Income
Less than \$10,000	10,000	464	12.95	12.6	2.58	10.01	0.365	12.95
\$10,000 to \$14,999	12,500	520	10.36	10.1	2.07	8.00	0.292	10.36
\$15,000 to \$24,999	20,000	784	6.48	6.3	1.29	5.00	0.182	6.48
\$25,000 to \$34,999	30,000	594	4.32	4.2	0.86	3.34	0.122	4.32
\$35,000 to \$49,999	42,500	885	3.05	3.0	0.61	2.35	0.086	3.05
\$50,000 to \$74,999	62,500	1,644	2.07	2.0	0.41	1.60	0.058	2.07
\$75,000 to \$99,999	87,500	878	1.48	1.4	0.30	1.14	0.042	1.48
\$100,000 to \$149,999	125,000	1,284	1.04	1.0	0.21	0.80	0.029	1.04
\$150,000 to \$199,999	175,000	506	0.74	0.7	0.15	0.57	0.021	0.74
\$200,000 or more	200,000	335	0.65	0.6	0.13	0.50	0.018	0.65

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 7,894	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	464	12.95	845.98	392,535	3,925,347
\$10,000 to \$14,999	12,500	520	10.36	733.48	381,410	3,814,096
\$15,000 to \$24,999	20,000	784	6.48	395.98	310,448	3,104,483
\$25,000 to \$34,999	30,000	594	4.32	-54.02		
\$35,000 to \$49,999	42,500	885	3.05	-616.52		
\$50,000 to \$74,999	62,500	1,644	2.07	-1,516.52		
\$75,000 to \$99,999	87,500	878	1.48	-2,641.52		
\$100,000 to \$149,999	125,000	1,284	1.04	-4,329.02		
\$150,000 to \$199,999	175,000	506	0.74	-6,579.02		
\$200,000 or more	200,000	335	0.65	-7,704.02		

Manhattan Beach, CA

Population, 2013: 35,726
 Poverty Rate, 2012: 2.9%
 Median Household Income (MHI), 2012: \$134,445
 EPA Affordability Criteria
 2% of MHI: \$2,688.90
 4.5% of MHI: \$6,050.03
 Current Average Cost per Household
 Sewer \$ 284.00
 Water \$ 1,126.00
 Flood Control \$ 19.12
 Total \$ 1,429.12

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 14,089	Percent of Households	CWA 2% MHI \$2,688.90 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$6,050.03 as Percent of Actual Income
Less than \$10,000	10,000	286	2.0%	26.7	60.5
\$10,000 to \$14,999	12,500	265	1.9%	21.4	48.4
\$15,000 to \$24,999	20,000	403	2.9%	13.3	30.3
\$25,000 to \$34,999	30,000	582	4.1%	8.9	20.2
\$35,000 to \$49,999	42,500	756	5.4%	6.3	14.2
\$50,000 to \$74,999	62,500	1,549	11.0%	4.3	9.7
\$75,000 to \$99,999	87,500	1,220	8.7%	3.1	6.9
\$100,000 to \$149,999	125,000	2,803	19.9%	2.1	4.8
\$150,000 to \$199,999	175,000	1,886	13.4%	1.5	3.5
\$200,000 or more	200,000	4,339	30.8%	1.3	3.0

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 14,089	Percent of Households	2% MHI \$2,688.93 as Percent of Actual Income	Sewer Bill \$284 as Percent of Actual Income	Water Bill \$1,126 as Percent of Actual Income	Flood Control Bill \$19.12 as Percent of Actual Income	Sewer & Water Bill \$1,429.12 as Percent of Actual Income
Less than \$10,000	10,000	286	2.0%	26.7	2.84	11.26	0.191	14.29
\$10,000 to \$14,999	12,500	265	1.9%	21.4	2.27	9.01	0.153	11.43
\$15,000 to \$24,999	20,000	403	2.9%	13.3	1.42	5.63	0.096	7.15
\$25,000 to \$34,999	30,000	582	4.1%	8.9	0.95	3.75	0.064	4.76
\$35,000 to \$49,999	42,500	756	5.4%	6.3	0.67	2.65	0.045	3.36
\$50,000 to \$74,999	62,500	1,549	11.0%	4.3	0.45	1.80	0.031	2.29
\$75,000 to \$99,999	87,500	1,220	8.7%	3.1	0.32	1.29	0.022	1.63
\$100,000 to \$149,999	125,000	2,803	19.9%	2.1	0.23	0.90	0.015	1.14
\$150,000 to \$199,999	175,000	1,886	13.4%	1.5	0.16	0.64	0.011	0.82
\$200,000 or more	200,000	4,339	30.8%	1.3	0.14	0.56	0.010	0.71

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 14,089	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	286	14.29	979.12	280,028	2,800,283
\$10,000 to \$14,999	12,500	265	11.43	866.62	229,654	2,296,543
\$15,000 to \$24,999	20,000	403	7.15	529.12	213,235	2,132,354
\$25,000 to \$34,999	30,000	582	4.76	79.12	46,048	460,478
\$35,000 to \$49,999	42,500	756	3.36	-483.38		
\$50,000 to \$74,999	62,500	1,549	2.29	-1,383.38		
\$75,000 to \$99,999	87,500	1,220	1.63	-2,508.38		
\$100,000 to \$149,999	125,000	2,803	1.14	-4,195.88		
\$150,000 to \$199,999	175,000	1,886	0.82	-6,445.88		
\$200,000 or more	200,000	4,339	0.71	-7,570.88		

Millipitas, CA
 Population: 28,131 (2011)
 Property Taxes: 0.022 (2012)
 Median Household Income: \$44,111 (2011)
 EPA Affordability Criteria: 4.5% of MHI: \$1,985.98
 4.5% of SDWA: \$3,125.21
 Current Average Total per Household:
 Water: \$ 48.00
 Sewer: \$ 48.00
 Flood Control: \$ 42.00
 Total: \$ 138.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 13,428	Percent of Households	CWA 2% MHI \$1,388.98 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,125.21 as Percent of Actual Income
Less than \$10,000	10,000	641	4.77	13.89	31.25
\$10,000 to \$14,999	12,500	621	4.62	11.11	25.00
\$15,000 to \$24,999	20,000	1,204	8.97	6.94	15.63
\$25,000 to \$34,999	30,000	968	7.21	4.63	10.42
\$35,000 to \$49,999	42,500	1,352	10.07	3.27	7.35
\$50,000 to \$74,999	62,500	2,503	18.64	2.22	5.00
\$75,000 to \$99,999	87,500	1,666	12.41	1.59	3.57
\$100,000 to \$149,999	125,000	2,557	19.04	1.11	2.50
\$150,000 to \$199,999	175,000	1,141	8.50	0.79	1.79
\$200,000 or more	200,000	775	5.77	0.69	1.56

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 13,428	Percent of Households	2% MHI \$1,388.98 Percent of Actual Income	Sewer Bill \$68.00 Percent of Actual Income	Water Bill \$400.00 Percent of Actual Income	Flood Control Bill \$42.00 Percent of Actual Income	Sewer & Water Bill \$502.00 Percent of Actual Income
Less than \$10,000	10,000	641	4.77	13.89	0.600	4.00	0.420	5.020
\$10,000 to \$14,999	12,500	621	4.62	11.11	0.480	3.20	0.336	4.016
\$15,000 to \$24,999	20,000	1,204	8.97	6.94	0.300	2.00	0.210	2.510
\$25,000 to \$34,999	30,000	968	7.21	4.63	0.200	1.33	0.140	1.673
\$35,000 to \$49,999	42,500	1,352	10.07	3.27	0.141	0.94	0.099	1.181
\$50,000 to \$74,999	62,500	2,503	18.64	2.22	0.096	0.64	0.067	0.803
\$75,000 to \$99,999	87,500	1,666	12.41	1.59	0.069	0.46	0.048	0.574
\$100,000 to \$149,999	125,000	2,557	19.04	1.11	0.048	0.32	0.034	0.402
\$150,000 to \$199,999	175,000	1,141	8.50	0.79	0.034	0.23	0.024	0.287
\$200,000 or more	200,000	775	5.77	0.69	0.030	0.20	0.021	0.251

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 13,428	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	641	5.020	52.00	33,332	333,320
\$10,000 to \$14,999	12,500	621	4.016			
\$15,000 to \$24,999	20,000	1,204	2.510			
\$25,000 to \$34,999	30,000	968	1.673			
\$35,000 to \$49,999	42,500	1,352	1.181			
\$50,000 to \$74,999	62,500	2,503	0.803			
\$75,000 to \$99,999	87,500	1,666	0.574			
\$100,000 to \$149,999	125,000	2,557	0.402			
\$150,000 to \$199,999	175,000	1,141	0.287			
\$200,000 or more	200,000	775	0.251			

Monterey Park, CA

Population, 2013: 61,085
 Poverty Rate, 2012: 14.5%
 Median Household Income (MHI), 2012: \$55,800
 EPA Affordability Criteria
 2% of MHI: \$1,116
 4.5% of MHI: \$2,511
 Current Average Cost per Household
 Sewer \$ 12.00
 Water \$ 360.00
 Flood Control \$ 40.00
 Total \$ 412.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 18,735	Percent of Households	CWA 2% MHI \$1,116 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,511 as Percent of Actual Income
Less than \$10,000	10,000	1,022	5.5%	11.2	25.1
\$10,000 to \$14,999	12,500	1,263	6.7%	8.9	20.1
\$15,000 to \$24,999	20,000	2,157	11.5%	5.6	12.6
\$25,000 to \$34,999	30,000	1,709	9.1%	3.7	8.4
\$35,000 to \$49,999	42,500	2,407	12.8%	2.6	5.9
\$50,000 to \$74,999	62,500	3,096	16.5%	1.8	4.0
\$75,000 to \$99,999	87,500	2,437	13.0%	1.3	2.9
\$100,000 to \$149,999	125,000	2,453	13.1%	0.9	2.0
\$150,000 to \$199,999	175,000	1,428	7.6%	0.6	1.4
\$200,000 or more	200,000	763	4.1%	0.6	1.3

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 18,735	Percent of Households	2% MHI \$1,116 Percent of Actual Income	Sewer Bill \$12 Percent of Actual Income	Water Bill \$360 Percent of Actual Income	Flood Control Bill \$40 Percent of Actual Income	Sewer & Water Bill \$412 Percent of Actual Income
Less than \$10,000	10,000	1,022	5.5%	11.2	0.12	3.60	0.400	4.12
\$10,000 to \$14,999	12,500	1,263	6.7%	8.9	0.10	2.88	0.320	3.30
\$15,000 to \$24,999	20,000	2,157	11.5%	5.6	0.06	1.80	0.200	2.06
\$25,000 to \$34,999	30,000	1,709	9.1%	3.7	0.04	1.20	0.133	1.37
\$35,000 to \$49,999	42,500	2,407	12.8%	2.6	0.03	0.85	0.094	0.97
\$50,000 to \$74,999	62,500	3,096	16.5%	1.8	0.02	0.58	0.064	0.66
\$75,000 to \$99,999	87,500	2,437	13.0%	1.3	0.01	0.41	0.046	0.47
\$100,000 to \$149,999	125,000	2,453	13.1%	0.9	0.01	0.29	0.032	0.33
\$150,000 to \$199,999	175,000	1,428	7.6%	0.6	0.01	0.21	0.023	0.24
\$200,000 or more	200,000	763	4.1%	0.6	0.01	0.18	0.020	0.21

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 18,735	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,022	4.12	0	0	0
\$10,000 to \$14,999	12,500	1,263	3.30			
\$15,000 to \$24,999	20,000	2,157	2.06			
\$25,000 to \$34,999	30,000	1,709	1.37			
\$35,000 to \$49,999	42,500	2,407	0.97			
\$50,000 to \$74,999	62,500	3,096	0.66			
\$75,000 to \$99,999	87,500	2,437	0.47			
\$100,000 to \$149,999	125,000	2,453	0.33			
\$150,000 to \$199,999	175,000	1,428	0.24			
\$200,000 or more	200,000	763	0.21			

Norwalk, CA
 Population: 2013: 130,189
 Primary Rate: 2013: 12.1%
 Standard Household Income (MHI): 2002: \$40,448
 EPA Affordability Criteria
 2% of MHI: \$1,209.70
 4.5% of MHI: \$3,721.83
 Current Average Cost per Household
 Sewer: \$ 343.88
 Water: \$ 1,209.00
 Flood Control: \$ 293.00
 Total: \$ 1,845.88

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households	Percent of Households	CWA 2% MHI as Percent of Actual Income	CWA & SDWA 4.5% MHI as Percent of Actual Income
Less than \$10,000	10,000	1,306	4.8%	12.1	27.2
\$10,000 to \$14,999	12,500	1,204	4.5%	9.7	21.8
\$15,000 to \$24,999	20,000	2,084	7.7%	6.0	13.6
\$25,000 to \$34,999	30,000	2,135	7.9%	4.0	9.1
\$35,000 to \$49,999	42,500	3,713	13.8%	2.8	6.4
\$50,000 to \$74,999	62,500	6,119	22.7%	1.9	4.4
\$75,000 to \$99,999	87,500	4,218	15.6%	1.4	3.1
\$100,000 to \$149,999	125,000	4,562	16.9%	1.0	2.2
\$150,000 to \$199,999	175,000	1,151	4.3%	0.7	1.6
\$200,000 or more	200,000	480	1.8%	0.6	1.4

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households	Percent of Households	2% MHI \$1,209.70 Percent of Actual Income	Sewer Bill \$240.48 Percent of Actual Income	Water Bill \$1,000.00 Percent of Actual Income	Flood Control Bill \$56.00 Percent of Actual Income	Sewer & Water Bill \$1,290.48 Percent of Actual Income
Less than \$10,000	10,000	1,306	4.8%	12.1	2.40	10.00	0.500	12.90
\$10,000 to \$14,999	12,500	1,204	4.5%	9.7	1.92	8.00	0.400	10.32
\$15,000 to \$24,999	20,000	2,084	7.7%	6.0	1.20	5.00	0.250	6.45
\$25,000 to \$34,999	30,000	2,135	7.9%	4.0	0.80	3.33	0.167	4.30
\$35,000 to \$49,999	42,500	3,713	13.8%	2.8	0.57	2.35	0.118	3.04
\$50,000 to \$74,999	62,500	6,119	22.7%	1.9	0.38	1.60	0.080	2.06
\$75,000 to \$99,999	87,500	4,218	15.6%	1.4	0.27	1.14	0.057	1.47
\$100,000 to \$149,999	125,000	4,562	16.9%	1.0	0.19	0.80	0.040	1.03
\$150,000 to \$199,999	175,000	1,151	4.3%	0.7	0.14	0.57	0.029	0.74
\$200,000 or more	200,000	480	1.8%	0.6	0.12	0.50	0.025	0.65

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,306	12.99	840.48	1,097,667	10,976,669
\$10,000 to \$14,999	12,500	1,204	10.32	727.98	876,488	8,764,879
\$15,000 to \$24,999	20,000	2,084	6.45	390.48	813,760	8,137,603
\$25,000 to \$34,999	30,000	2,135	4.30	-59.52		
\$35,000 to \$49,999	42,500	3,713	3.04	-622.02		
\$50,000 to \$74,999	62,500	6,119	2.06	-1,522.02		
\$75,000 to \$99,999	87,500	4,218	1.47	-2,647.02		
\$100,000 to \$149,999	125,000	4,562	1.03	-4,334.52		
\$150,000 to \$199,999	175,000	1,151	0.74	-6,584.52		
\$200,000 or more	200,000	480	0.65	-7,709.52		

Paramount, CA

Population: 23,113, 34,000

Poverty Rate: 2012: 21.0%

Median Household Income: 2011: \$34,187

EPA Affordability Criteria:
 2% of MHI: \$683.74
 4.5% of MHI: \$1,543.32

Current Average Cost per Household:

Water: \$ 187.98
 Sewer: \$ 1,218.26
 Flood Control: \$ 235.43
 Total: \$ 1,431.67

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 13,669	Percent of Households	CWA 2% MHI \$883.34 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$1,987.52 as Percent of Actual Income
Less than \$10,000	10,000	901	6.6%	8.8	19.2
\$10,000 to \$14,999	12,500	689	5.0%	7.1	15.2
\$15,000 to \$24,999	20,000	1,959	14.3%	4.4	9.9
\$25,000 to \$34,999	30,000	1,839	13.5%	2.9	6.6
\$35,000 to \$49,999	42,500	2,228	16.3%	2.1	4.7
\$50,000 to \$74,999	62,500	2,796	20.5%	1.4	3.2
\$75,000 to \$99,999	87,500	1,723	12.6%	1.0	2.3
\$100,000 to \$149,999	125,000	1,234	9.0%	0.7	1.6
\$150,000 to \$199,999	175,000	219	1.6%	0.5	1.1
\$200,000 or more	200,000	81	0.6%	0.4	1.0

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 13,669	Percent of Households	2% MHI \$883.34 Percent of Actual Income	Sewer Bill \$197.59 Percent of Actual Income	Water Bill \$1,218.26 Percent of Actual Income	Flood Control Bill \$235.43 Percent of Actual Income	Sewer & Water Bill \$1,439.19 Percent of Actual Income
Less than \$10,000	10,000	901	6.6%	8.8	1.98	12.18	0.234	14.39
\$10,000 to \$14,999	12,500	689	5.0%	7.1	1.58	9.75	0.187	11.51
\$15,000 to \$24,999	20,000	1,959	14.3%	4.4	0.99	6.09	0.117	7.20
\$25,000 to \$34,999	30,000	1,839	13.5%	2.9	0.66	4.06	0.078	4.80
\$35,000 to \$49,999	42,500	2,228	16.3%	2.1	0.46	2.87	0.055	3.39
\$50,000 to \$74,999	62,500	2,796	20.5%	1.4	0.32	1.95	0.037	2.30
\$75,000 to \$99,999	87,500	1,723	12.6%	1.0	0.23	1.39	0.027	1.64
\$100,000 to \$149,999	125,000	1,234	9.0%	0.7	0.16	0.97	0.019	1.15
\$150,000 to \$199,999	175,000	219	1.6%	0.5	0.11	0.70	0.013	0.82
\$200,000 or more	200,000	81	0.6%	0.4	0.10	0.61	0.012	0.72

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 13,669	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	901	14.39	989.19	891,260	8,912,602
\$10,000 to \$14,999	12,500	689	11.51	876.69	604,039	6,040,394
\$15,000 to \$24,999	20,000	1,959	7.20	539.19	1,056,273	10,562,732
\$25,000 to \$34,999	30,000	1,839	4.80	89.19	164,020	1,640,204
\$35,000 to \$49,999	42,500	2,228	3.39	-473.31		
\$50,000 to \$74,999	62,500	2,796	2.30	-1,373.31		
\$75,000 to \$99,999	87,500	1,723	1.64	-2,498.31		
\$100,000 to \$149,999	125,000	1,234	1.15	-4,185.81		
\$150,000 to \$199,999	175,000	219	0.82	-6,435.81		
\$200,000 or more	200,000	81	0.72	-7,560.81		

Pomona, CA

Population: 2010: 141,148
 Property Tax: 2011: 28.41%
 Median Household Income (MHI): 2012: \$38,948
 EPA Affordability Criteria
 2% of MHI: \$777.28
 4.5% of MHI: \$1,756.88
 Current Average Cost per Household
 Water: \$ 1,150.00
 Sewer: \$ 398.00
 Flood Control: \$ 238.00
 Total: \$ 1,786.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 38,474	Percent of Households	CWA 2% MHI \$977.28 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,198.88 as Percent of Actual Income
Less than \$10,000	10,000	2,235	5.8%	9.8	21.99
\$10,000 to \$14,999	12,500	2,194	5.7%	7.8	17.59
\$15,000 to \$24,999	20,000	4,762	12.4%	4.9	10.99
\$25,000 to \$34,999	30,000	4,485	11.7%	3.3	7.33
\$35,000 to \$49,999	42,500	5,973	15.5%	2.3	5.17
\$50,000 to \$74,999	62,500	7,472	19.4%	1.6	3.52
\$75,000 to \$99,999	87,500	5,058	13.1%	1.1	2.51
\$100,000 to \$149,999	125,000	4,368	11.4%	0.8	1.76
\$150,000 to \$199,999	175,000	1,206	3.1%	0.6	1.26
\$200,000 or more	200,000	721	1.9%	0.5	1.10

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 38,474	Percent of Households	2% MHI \$977.28 Percent of Actual Income	Sewer Bill \$158.90 Percent of Actual Income	Water Bill \$580.50 Percent of Actual Income	Flood Control Bill \$2.40 Percent of Actual Income	Sewer & Water Bill \$741.80 Percent of Actual Income
Less than \$10,000	10,000	2,235	5.8%	9.8	1.59	5.81	0.024	7.42
\$10,000 to \$14,999	12,500	2,194	5.7%	7.8	1.27	4.64	0.019	5.93
\$15,000 to \$24,999	20,000	4,762	12.4%	4.9	0.79	2.90	0.012	3.71
\$25,000 to \$34,999	30,000	4,485	11.7%	3.3	0.53	1.94	0.008	2.47
\$35,000 to \$49,999	42,500	5,973	15.5%	2.3	0.37	1.37	0.006	1.75
\$50,000 to \$74,999	62,500	7,472	19.4%	1.6	0.25	0.93	0.004	1.19
\$75,000 to \$99,999	87,500	5,058	13.1%	1.1	0.18	0.66	0.003	0.85
\$100,000 to \$149,999	125,000	4,368	11.4%	0.8	0.13	0.46	0.002	0.59
\$150,000 to \$199,999	175,000	1,206	3.1%	0.6	0.09	0.33	0.001	0.42
\$200,000 or more	200,000	721	1.9%	0.5	0.08	0.29	0.001	0.37

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 38,474	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	2,235	7.42	291.80	652,173	6,521,730
\$10,000 to \$14,999	12,500	2,194	5.93	179.30	393,384	3,933,842
\$15,000 to \$24,999	20,000	4,762	3.71	-158.20		
\$25,000 to \$34,999	30,000	4,485	2.47	-608.20		
\$35,000 to \$49,999	42,500	5,973	1.75	-1,170.70		
\$50,000 to \$74,999	62,500	7,472	1.19	-2,070.70		
\$75,000 to \$99,999	87,500	5,058	0.85	-3,195.70		
\$100,000 to \$149,999	125,000	4,368	0.59	-4,883.20		
\$150,000 to \$199,999	175,000	1,206	0.42	-7,133.20		
\$200,000 or more	200,000	721	0.37	-8,258.20		

Redondo Beach, CA
 Population: 2011: 67,815
 Population: 2012: 67,815
 Median Household Income (MHI): 2012: \$48,236
 Median Household Income (MHI): 2011: \$48,236
 EPA Affordability Criteria
 2% of MHI: \$1,976.32
 4.5% of MHI: \$4,446.72
 Current Average Cost per Household
 Sewer: \$ 331.00
 Water: \$ 1,110.66
 Flood Control: \$ 332.55
 Total: \$ 1,774.21

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 28,769	Percent of Households	CWA 2% MHI \$1,976.32 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$4,446.72 as Percent of Actual Income
Less than \$10,000	10,000	876	3.0%	19.8	44.47
\$10,000 to \$14,999	12,500	888	3.1%	15.8	35.57
\$15,000 to \$24,999	20,000	1,933	6.7%	9.9	22.23
\$25,000 to \$34,999	30,000	1,365	4.7%	6.6	14.82
\$35,000 to \$49,999	42,500	2,311	8.0%	4.7	10.46
\$50,000 to \$74,999	62,500	3,952	13.7%	3.2	7.11
\$75,000 to \$99,999	87,500	3,167	11.0%	2.3	5.08
\$100,000 to \$149,999	125,000	5,712	19.9%	1.6	3.56
\$150,000 to \$199,999	175,000	3,920	13.6%	1.1	2.54
\$200,000 or more	200,000	4,645	16.1%	1.0	2.22

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 28,769	Percent of Households	2% MHI \$1,976.32 Percent of Actual Income	Sewer Bill \$331.00 Percent of Actual Income	Water Bill \$1,110.66 Percent of Actual Income	Flood Control Bill \$332.55 Percent of Actual Income	Sewer & Water Bill \$1,474.21 Percent of Actual Income
Less than \$10,000	10,000	876	3.0%	19.8	3.31	11.11	0.326	14.74
\$10,000 to \$14,999	12,500	888	3.1%	15.8	2.65	8.89	0.260	11.79
\$15,000 to \$24,999	20,000	1,933	6.7%	9.9	1.66	5.55	0.163	7.37
\$25,000 to \$34,999	30,000	1,365	4.7%	6.6	1.10	3.70	0.109	4.91
\$35,000 to \$49,999	42,500	2,311	8.0%	4.7	0.78	2.61	0.077	3.47
\$50,000 to \$74,999	62,500	3,952	13.7%	3.2	0.53	1.78	0.052	2.36
\$75,000 to \$99,999	87,500	3,167	11.0%	2.3	0.38	1.27	0.037	1.68
\$100,000 to \$149,999	125,000	5,712	19.9%	1.6	0.26	0.89	0.026	1.18
\$150,000 to \$199,999	175,000	3,920	13.6%	1.1	0.19	0.63	0.019	0.84
\$200,000 or more	200,000	4,645	16.1%	1.0	0.17	0.56	0.016	0.74

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 28,769	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	876	14.74	1,024.21	897,208	8,972,080
\$10,000 to \$14,999	12,500	888	11.79	911.71	809,598	8,095,985
\$15,000 to \$24,999	20,000	1,933	7.37	574.21	1,109,948	11,099,479
\$25,000 to \$34,999	30,000	1,365	4.91	124.21	169,547	1,695,467
\$35,000 to \$49,999	42,500	2,311	3.47			
\$50,000 to \$74,999	62,500	3,952	2.36			
\$75,000 to \$99,999	87,500	3,167	1.68			
\$100,000 to \$149,999	125,000	5,712	1.18			
\$150,000 to \$199,999	175,000	3,920	0.84			
\$200,000 or more	200,000	4,645	0.74			

Sacramento, CA

Population: 481,459 (2010)

Priority Rate: 2011: 12.2%

2014 Average Total Water Cost per Household: \$136.00

EPA Affordability Criteria
 2% of MHI: \$1,013.22
 4.5% of MHI: \$2,279.75

Current Average Cost per Household

Water	\$ 888.00
Sewer	\$ 490.00
Flood Control	\$ 136.00
Total	\$ 1,514.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 176,061	Percent of Households	CWA 2% MHI \$1,013.22 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,279.75 as Percent of Actual Income
Less than \$10,000	10,000	11,869	6.7%	10.1	22.8
\$10,000 to \$14,999	12,500	13,358	7.6%	8.1	18.2
\$15,000 to \$24,999	20,000	19,345	11.0%	5.1	11.4
\$25,000 to \$34,999	30,000	18,711	10.6%	3.4	7.6
\$35,000 to \$49,999	42,500	23,707	13.5%	2.4	5.4
\$50,000 to \$74,999	62,500	33,710	19.1%	1.6	3.6
\$75,000 to \$99,999	87,500	20,509	11.6%	1.2	2.6
\$100,000 to \$149,999	125,000	21,175	12.0%	0.8	1.8
\$150,000 to \$199,999	175,000	7,893	4.5%	0.6	1.3
\$200,000 or more	200,000	5,784	3.3%	0.5	1.1

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 176,061	Percent of Households	2% MHI \$1,013.22 Percent of Actual Income	Sewer Bill \$653.00 Percent of Actual Income	Water Bill \$549.00 Percent of Actual Income	Flood Control Bill \$136.00 Percent of Actual Income	Sewer & Water Bill \$1,338.00 Percent of Actual Income
Less than \$10,000	10,000	11,869	6.7%	10.1	6.53	5.49	1.360	13.38
\$10,000 to \$14,999	12,500	13,358	7.6%	8.1	5.22	4.39	1.088	10.20
\$15,000 to \$24,999	20,000	19,345	11.0%	5.1	3.27	2.75	0.680	6.69
\$25,000 to \$34,999	30,000	18,711	10.6%	3.4	2.18	1.83	0.453	4.46
\$35,000 to \$49,999	42,500	23,707	13.5%	2.4	1.54	1.29	0.320	3.15
\$50,000 to \$74,999	62,500	33,710	19.1%	1.6	1.04	0.88	0.218	2.14
\$75,000 to \$99,999	87,500	20,509	11.6%	1.2	0.75	0.63	0.155	1.53
\$100,000 to \$149,999	125,000	21,175	12.0%	0.8	0.52	0.44	0.109	1.07
\$150,000 to \$199,999	175,000	7,893	4.5%	0.6	0.37	0.31	0.078	0.76
\$200,000 or more	200,000	5,784	3.3%	0.5	0.33	0.27	0.068	0.67

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 176,061	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	11,869	13.38	888.00	10,539,672	105,396,720
\$10,000 to \$14,999	12,500	13,358	10.70	775.50	10,359,129	103,591,290
\$15,000 to \$24,999	20,000	19,345	6.69	438.00	8,473,110	84,731,100
\$25,000 to \$34,999	30,000	18,711	4.46	-12.00		
\$35,000 to \$49,999	42,500	23,707	3.15	-574.50		
\$50,000 to \$74,999	62,500	33,710	2.14	-1,474.50		
\$75,000 to \$99,999	87,500	20,509	1.53	-2,599.50		
\$100,000 to \$149,999	125,000	21,175	1.07	-4,287.00		
\$150,000 to \$199,999	175,000	7,893	0.76	-6,537.00		
\$200,000 or more	200,000	5,784	0.67	-7,662.00		

San Dimas, CA

Population, 2013: 33,840

Poverty Rate, 2012: 7.0%

Median Household Income (MHI), 2012: \$ 76,454

EPA Affordability Criteria
2% of MHI: \$ 1,529.08

4.5% of MHI: \$3,440.43

Current Average Cost per Household

Sewer \$ 199.50

Water \$ 631.19

Flood Control \$ 65.51

Total \$ 896.20

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households of 11,663	Percent of Households	CWA 2% MHI \$1,529.08 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,440.43 as Percent of Actual Income
Less than \$10,000	10,000	612	5.2%	15.3	34.40
\$10,000 to \$14,999	12,500	286	2.5%	12.2	27.52
\$15,000 to \$24,999	20,000	816	7.0%	7.6	17.20
\$25,000 to \$34,999	30,000	794	6.8%	5.1	11.47
\$35,000 to \$49,999	42,500	1,082	9.3%	3.6	8.10
\$50,000 to \$74,999	62,500	2,099	18.0%	2.4	5.50
\$75,000 to \$99,999	87,500	1,729	14.8%	1.7	3.93
\$100,000 to \$149,999	125,000	2,186	18.7%	1.2	2.75
\$150,000 to \$199,999	175,000	978	8.4%	0.9	1.97
\$200,000 or more	200,000	1,081	9.3%	0.8	1.72

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households of 11,663	Percent of Households	2% MHI \$1,529.08 Percent of Actual Income	Sewer Bill \$199.50 Percent of Actual Income	Water Bill \$631.19 Percent of Actual Income	Flood Control Bill \$65.51 Percent of Actual Income	Sewer & Water Bill \$896.20 Percent of Actual Income
Less than \$10,000	10,000	612	5.2%	15.3	2.00	6.31	0.655	8.96
\$10,000 to \$14,999	12,500	286	2.5%	12.2	1.60	5.05	0.524	7.17
\$15,000 to \$24,999	20,000	816	7.0%	7.6	1.00	3.16	0.328	4.48
\$25,000 to \$34,999	30,000	794	6.8%	5.1	0.67	2.10	0.218	2.99
\$35,000 to \$49,999	42,500	1,082	9.3%	3.6	0.47	1.49	0.154	2.11
\$50,000 to \$74,999	62,500	2,099	18.0%	2.4	0.32	1.01	0.105	1.43
\$75,000 to \$99,999	87,500	1,729	14.8%	1.7	0.23	0.72	0.075	1.02
\$100,000 to \$149,999	125,000	2,186	18.7%	1.2	0.16	0.50	0.052	0.72
\$150,000 to \$199,999	175,000	978	8.4%	0.9	0.11	0.36	0.037	0.51
\$200,000 or more	200,000	1,081	9.3%	0.8	0.10	0.32	0.033	0.45

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households of 11,663	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	612	5.2%	446.20	273,074	2,730,744
\$10,000 to \$14,999	12,500	286	2.5%	333.70	95,438	954,382
\$15,000 to \$24,999	20,000	816	7.0%	-3.80		
\$25,000 to \$34,999	30,000	794	6.8%	-453.80		
\$35,000 to \$49,999	42,500	1,082	9.3%	-1,016.30		
\$50,000 to \$74,999	62,500	2,099	18.0%	-1,916.30		
\$75,000 to \$99,999	87,500	1,729	14.8%	-3,041.30		
\$100,000 to \$149,999	125,000	2,186	18.7%	-4,728.80		
\$150,000 to \$199,999	175,000	978	8.4%	-6,978.80		
\$200,000 or more	200,000	1,081	9.3%	-8,103.80		

San Gabriel, CA

Population: 3317, 48.27%
 County: Mono, 24.11, 12.45%
 Median Household Income: \$34,000
 CPHH: 2012: 8.44, 2.66
 EPA Affordability Criteria: 2% of MHI: \$1,125.20
 4.5% of Actual: \$2,531.70
 Current Average Cost per Household:
 Sewer: \$ 267.00
 Water: \$ 412.00
 Flood Control: \$ 0.00
 Total: \$ 679.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 12,276	Percent of Households	CWA 2% MHI \$1,125.20 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,531.70 as Percent of Actual Income
Less than \$10,000	10,000	488	4.0%	11.3	25.32
\$10,000 to \$14,999	12,500	485	4.0%	9.0	20.25
\$15,000 to \$24,999	20,000	1,532	12.5%	5.6	12.66
\$25,000 to \$34,999	30,000	1,182	9.6%	3.8	8.44
\$35,000 to \$49,999	42,500	1,895	15.4%	2.6	5.96
\$50,000 to \$74,999	62,500	2,105	17.1%	1.8	4.05
\$75,000 to \$99,999	87,500	1,417	11.5%	1.3	2.89
\$100,000 to \$149,999	125,000	1,826	14.9%	0.9	2.03
\$150,000 to \$199,999	175,000	754	6.1%	0.6	1.45
\$200,000 or more	200,000	592	4.8%	0.6	1.27

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 12,276	Percent of Households	2% MHI \$1,125.20 Percent of Actual Income	Sewer Bill \$267 Percent of Actual Income	Water Bill \$412 Percent of Actual Income	Flood Control Bill NA Percent of Actual Income	Sewer & Water Bill \$679 Percent of Actual Income
Less than \$10,000	10,000	488	4.0%	11.3	2.67	4.12		6.79
\$10,000 to \$14,999	12,500	485	4.0%	9.0	2.14	3.30		5.43
\$15,000 to \$24,999	20,000	1,532	12.5%	5.6	1.34	2.06		3.40
\$25,000 to \$34,999	30,000	1,182	9.6%	3.8	0.89	1.37		2.26
\$35,000 to \$49,999	42,500	1,895	15.4%	2.6	0.63	0.97		1.60
\$50,000 to \$74,999	62,500	2,105	17.1%	1.8	0.43	0.66		1.09
\$75,000 to \$99,999	87,500	1,417	11.5%	1.3	0.31	0.47		0.78
\$100,000 to \$149,999	125,000	1,826	14.9%	0.9	0.21	0.33		0.54
\$150,000 to \$199,999	175,000	754	6.1%	0.6	0.15	0.24		0.39
\$200,000 or more	200,000	592	4.8%	0.6	0.13	0.21		0.34

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 12,276	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	488	6.79	229.00	111,752	1,117,520
\$10,000 to \$14,999	12,500	485	5.43	116.50	56,503	565,025
\$15,000 to \$24,999	20,000	1,532	3.40	-221.00		
\$25,000 to \$34,999	30,000	1,182	2.26	-671.00		
\$35,000 to \$49,999	42,500	1,895	1.60	-1,233.50		
\$50,000 to \$74,999	62,500	2,105	1.09	-2,133.50		
\$75,000 to \$99,999	87,500	1,417	0.78	-3,258.50		
\$100,000 to \$149,999	125,000	1,826	0.54	-4,946.00		
\$150,000 to \$199,999	175,000	754	0.39	-7,196.00		
\$200,000 or more	200,000	592	0.34	-8,321.00		

San Marino, CA

Population: 2010: 13,127
 February 2011: 14,172
 Median Household Income: 2010: \$ 126,122
 EPA Affordability Criteria: 2% of MHI: \$ 2,522.44
 4.5% of MHI: \$ 5,697.49
 Current Average Cost per Household:
 Sewer: \$ 211.00
 Water: \$ 115.91
 Flood Control: \$ 49.00
 Total: \$ 396.91

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 4,396	Percent of Households	CWA 2% MHI \$2,782.44 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$6,260.49 as Percent of Actual Income
Less than \$10,000	10,000	178	4.0%	27.8	62.60
\$10,000 to \$14,999	12,500	58	1.3%	22.3	50.08
\$15,000 to \$24,999	20,000	151	3.4%	13.9	31.30
\$25,000 to \$34,999	30,000	175	4.0%	9.3	20.87
\$35,000 to \$49,999	42,500	188	4.3%	6.5	14.73
\$50,000 to \$74,999	62,500	314	7.1%	4.5	10.02
\$75,000 to \$99,999	87,500	504	11.5%	3.2	7.15
\$100,000 to \$149,999	125,000	699	15.9%	2.2	5.01
\$150,000 to \$199,999	175,000	605	13.8%	1.6	3.58
\$200,000 or more	200,000	1,524	34.7%	1.4	3.13

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 4,396	Percent of Households	2% MHI \$2,782.44 Percent of Actual Income	Sewer Bill \$211.00 Percent of Actual Income	Water Bill \$115.91 Percent of Actual Income	Flood Control Bill \$49.00 Percent of Actual Income	Sewer & Water Bill \$366.91 Percent of Actual Income
Less than \$10,000	10,000	178	4.0%	27.8	2.11	1.16	0.490	3.67
\$10,000 to \$14,999	12,500	58	1.3%	22.3	1.69	0.93	0.320	2.94
\$15,000 to \$24,999	20,000	151	3.4%	13.9	1.06	0.58	0.200	1.83
\$25,000 to \$34,999	30,000	175	4.0%	9.3	0.70	0.29	0.133	1.22
\$35,000 to \$49,999	42,500	188	4.3%	6.5	0.50	0.27	0.094	0.86
\$50,000 to \$74,999	62,500	314	7.1%	4.5	0.34	0.19	0.064	0.59
\$75,000 to \$99,999	87,500	504	11.5%	3.2	0.24	0.13	0.046	0.42
\$100,000 to \$149,999	125,000	699	15.9%	2.2	0.17	0.09	0.032	0.29
\$150,000 to \$199,999	175,000	605	13.8%	1.6	0.12	0.07	0.023	0.21
\$200,000 or more	200,000	1,524	34.7%	1.4	0.11	0.06	0.020	0.18

Santa Barbara, CA

Population, 2013: 92,312
 Poverty Rate, 2012: 14.7%
 Median Household Income, 2012: \$31,754
 EPA Affordability Criteria: 2% of MHI: \$1,275.16
 4.5% of MHI: \$2,869.11
 Current Average Cost per Household:
 Sewer: \$ 2,067.88
 Water: \$ 941.52
 Flood Control: \$ 22.81
 Total: \$ 3,132.21

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 34,900	Percent of Households	CWA 2% MHI \$1,275.16 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,869.11 as Percent of Actual Income
Less than \$10,000	10,000	1,578	4.5%	12.8	28.7
\$10,000 to \$14,999	12,500	1,697	4.9%	10.2	23.0
\$15,000 to \$24,999	20,000	3,302	9.5%	6.4	14.3
\$25,000 to \$34,999	30,000	3,173	9.1%	4.3	9.6
\$35,000 to \$49,999	42,500	4,264	12.2%	3.0	6.8
\$50,000 to \$74,999	62,500	6,053	17.3%	2.0	4.6
\$75,000 to \$99,999	87,500	4,154	11.9%	1.5	3.3
\$100,000 to \$149,999	125,000	4,866	13.9%	1.0	2.3
\$150,000 to \$199,999	175,000	2,885	8.3%	0.7	1.6
\$200,000 or more	200,000	2,928	8.4%	0.6	1.4

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 34,900	Percent of Households	2% MHI \$1,275.16 Percent of Actual Income	Sewer Bill \$516.00 Percent of Actual Income	Water Bill \$941.52 Percent of Actual Income	Flood Control Bill \$22.81 Percent of Actual Income	Sewer & Water Bill \$1,480.33 Percent of Actual Income
Less than \$10,000	10,000	1,578	4.5%	12.8	5.16	9.42	0.228	14.80
\$10,000 to \$14,999	12,500	1,697	4.9%	10.2	4.13	7.53	0.182	11.84
\$15,000 to \$24,999	20,000	3,302	9.5%	6.4	2.58	4.71	0.114	7.40
\$25,000 to \$34,999	30,000	3,173	9.1%	4.3	1.72	3.14	0.076	4.93
\$35,000 to \$49,999	42,500	4,264	12.2%	3.0	1.21	2.22	0.054	3.48
\$50,000 to \$74,999	62,500	6,053	17.3%	2.0	0.83	1.51	0.036	2.37
\$75,000 to \$99,999	87,500	4,154	11.9%	1.5	0.59	1.08	0.026	1.69
\$100,000 to \$149,999	125,000	4,866	13.9%	1.0	0.41	0.75	0.018	1.18
\$150,000 to \$199,999	175,000	2,885	8.3%	0.7	0.29	0.54	0.013	0.85
\$200,000 or more	200,000	2,928	8.4%	0.6	0.26	0.47	0.011	0.74

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 34,900	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,578	14.80	-1,030.33	1,625,861	16,258,607
\$10,000 to \$14,999	12,500	1,697	11.84	-917.83	1,557,558	15,575,575
\$15,000 to \$24,999	20,000	3,302	7.40	-580.33	1,916,250	19,162,497
\$25,000 to \$34,999	30,000	3,173	4.93	-130.33	413,537	4,135,371
\$35,000 to \$49,999	42,500	4,264	3.48	-432.17		
\$50,000 to \$74,999	62,500	6,053	2.37	-1,332.17		
\$75,000 to \$99,999	87,500	4,154	1.69	-2,457.17		
\$100,000 to \$149,999	125,000	4,866	1.18	-4,144.67		
\$150,000 to \$199,999	175,000	2,885	0.85	-6,394.67		
\$200,000 or more	200,000	2,928	0.74	-7,519.67		

Sierra Madre, CA
 Population: 2013: 11,394
 Poverty Rate: 2013: 8.2%
 Median Household Income (MHI): 2013: \$69,313
 EPA Affordability Criteria
 2% of MHI: \$1,386.42
 4.5% of MHI: \$3,122.84
 Current Average Cost per Household
 Water: \$ 738.78
 Sewer: \$ 1,189.22
 Flood Control: \$ 113.08
 Total: \$ 2,041.08

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households	Percent of Households	CWA 2% MHI \$1,806.42 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$4,064.45 as Percent of Actual Income
Less than \$10,000	10,000	145	3.2%	18.1	40.64
\$10,000 to \$14,999	12,500	190	4.2%	14.5	32.52
\$15,000 to \$24,999	20,000	251	5.5%	9.0	20.32
\$25,000 to \$34,999	30,000	246	5.4%	6.0	13.55
\$35,000 to \$49,999	42,500	359	7.9%	4.3	9.56
\$50,000 to \$74,999	62,500	677	14.8%	2.9	6.50
\$75,000 to \$99,999	87,500	782	17.1%	2.1	4.65
\$100,000 to \$149,999	125,000	929	20.3%	1.4	3.25
\$150,000 to \$199,999	175,000	392	8.6%	1.0	2.32
\$200,000 or more	200,000	598	13.1%	0.9	2.03

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households	Percent of Households	2% MHI \$1,806.42 as Percent of Actual Income	Sewer Bill \$738 as Percent of Actual Income	Water Bill \$1,189 as Percent of Actual Income	Flood Control Bill \$113 as Percent of Actual Income	Sewer & Water Bill \$2,040 as Percent of Actual Income
Less than \$10,000	10,000	145	3.2%	18.1	7.38	11.89	1.13	20.40
\$10,000 to \$14,999	12,500	190	4.2%	14.5	5.90	9.51	0.90	16.32
\$15,000 to \$24,999	20,000	251	5.5%	9.0	3.69	5.95	0.57	10.20
\$25,000 to \$34,999	30,000	246	5.4%	6.0	2.46	3.96	0.38	6.80
\$35,000 to \$49,999	42,500	359	7.9%	4.3	1.74	2.80	0.27	4.80
\$50,000 to \$74,999	62,500	677	14.8%	2.9	1.18	1.90	0.18	3.26
\$75,000 to \$99,999	87,500	782	17.1%	2.1	0.84	1.36	0.13	2.33
\$100,000 to \$149,999	125,000	929	20.3%	1.4	0.59	0.95	0.09	1.63
\$150,000 to \$199,999	175,000	392	8.6%	1.0	0.42	0.68	0.06	1.17
\$200,000 or more	200,000	598	13.1%	0.9	0.37	0.59	0.06	1.02

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	145	20.40	1,590.00	230,550	2,305,500
\$10,000 to \$14,999	12,500	190	16.32	1,477.50	280,725	2,807,250
\$15,000 to \$24,999	20,000	251	10.20	1,140.00	286,140	2,861,400
\$25,000 to \$34,999	30,000	246	6.80	690.00	169,740	1,697,400
\$35,000 to \$49,999	42,500	359	4.80	127.50	45,773	457,725
\$50,000 to \$74,999	62,500	677	3.26	-772.50	-522,983	
\$75,000 to \$99,999	87,500	782	2.33	-1,897.50	-1,483,845	
\$100,000 to \$149,999	125,000	929	1.63	-3,585.00	-3,330,465	
\$150,000 to \$199,999	175,000	392	1.17	-5,835.00	-2,287,320	
\$200,000 or more	200,000	598	1.02	-6,960.00	-4,162,080	

SIGNAL HILL, CA
 Population, 2012: 11,112
 Primary Rate, 2012: 14.47
 Median Household Income (2011): \$45,744
 EPA Affordability Criteria
 2% of AHI: \$1,314.82
 4.5% of AHI: \$2,058.35
 Current Average Cost per Household:
 Sewer \$ 405.31
 Water \$ 314.83
 Flood Control \$ 17.99
 Total \$ 738.13

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 4,106	Percent of Households	CWA 2% MHI \$1,314.82 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$2,958.35 as Percent of Actual Income
Less than \$10,000	10,000	241	5.87	13.15	29.58
\$10,000 to \$14,999	12,500	228	5.55	10.52	23.67
\$15,000 to \$24,999	20,000	455	11.08	6.57	14.79
\$25,000 to \$34,999	30,000	153	3.73	4.38	9.86
\$35,000 to \$49,999	42,500	415	10.11	3.09	6.96
\$50,000 to \$74,999	62,500	782	19.05	2.10	4.73
\$75,000 to \$99,999	87,500	692	16.85	1.50	3.38
\$100,000 to \$149,999	125,000	529	12.88	1.05	2.37
\$150,000 to \$199,999	175,000	363	8.84	0.75	1.69
\$200,000 or more	200,000	248	6.04	0.66	1.48

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 4,106	Percent of Households	2% MHI \$1,314.82 as Percent of Actual Income	Sewer Bill \$407.70 as Percent of Actual Income	Water Bill \$331.50 as Percent of Actual Income	Flood Control Bill \$57.49 as Percent of Actual Income	Sewer & Water Bill \$769.69 as Percent of Actual Income
Less than \$10,000	10,000	241	5.87	13.15	4.08	3.32	0.57	7.97
\$10,000 to \$14,999	12,500	228	5.55	10.52	3.26	2.65	0.46	6.37
\$15,000 to \$24,999	20,000	455	11.08	6.57	2.04	1.66	0.29	3.98
\$25,000 to \$34,999	30,000	153	3.73	4.38	1.36	1.11	0.19	2.66
\$35,000 to \$49,999	42,500	415	10.11	3.09	0.96	0.78	0.14	1.87
\$50,000 to \$74,999	62,500	782	19.05	2.10	0.65	0.53	0.09	1.27
\$75,000 to \$99,999	87,500	692	16.85	1.50	0.47	0.38	0.07	0.91
\$100,000 to \$149,999	125,000	529	12.88	1.05	0.33	0.27	0.05	0.64
\$150,000 to \$199,999	175,000	363	8.84	0.75	0.23	0.19	0.03	0.46
\$200,000 or more	200,000	248	6.04	0.66	0.20	0.17	0.03	0.40

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 4,106	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	241	7.97	346.69	83,552.29	835,522.90
\$10,000 to \$14,999	12,500	228	6.37	234.19	53,395.32	533,953.20
\$15,000 to \$24,999	20,000	455	3.98	-103.31		
\$25,000 to \$34,999	30,000	153	2.66	-553.31		
\$35,000 to \$49,999	42,500	415	1.87	-1,115.81		
\$50,000 to \$74,999	62,500	782	1.27	-2,015.81		
\$75,000 to \$99,999	87,500	692	0.91	-3,140.81		
\$100,000 to \$149,999	125,000	529	0.64	-4,828.31		
\$150,000 to \$199,999	175,000	363	0.46	-7,078.31		
\$200,000 or more	200,000	248	0.40	-8,203.31		

South Gate, CA

Population, 2013: 95,677
 Poverty Rate, 2012: 20.6
 Median Household Income (MHI), 2012: \$41,851
 EPA Affordability Criteria
 2% of MHI: \$837.02
 4.5% of MHI: \$1,883.30
 Current Average Cost per Household
 Sewer \$ 210.00
 Water \$ 610.00
 Flood Control \$ 351.00
 Total \$ 1,171.00

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 23,925	Percent of Households	CWA 2% MHI \$837.02 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$1,883.30 as Percent of Actual Income
Less than \$10,000	10,000	1,419	5.9%	8.4	18.8
\$10,000 to \$14,999	12,500	1,867	7.8%	6.7	15.1
\$15,000 to \$24,999	20,000	3,033	12.7%	4.2	9.4
\$25,000 to \$34,999	30,000	3,237	13.5%	2.8	6.3
\$35,000 to \$49,999	42,500	4,277	17.9%	2.0	4.4
\$50,000 to \$74,999	62,500	4,540	19.0%	1.3	3.0
\$75,000 to \$99,999	87,500	2,642	11.0%	1.0	2.2
\$100,000 to \$149,999	125,000	2,298	9.6%	0.7	1.5
\$150,000 to \$199,999	175,000	402	1.7%	0.5	1.1
\$200,000 or more	200,000	210	0.9%	0.4	0.9

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 23,925	Percent of Households	2% MHI \$837.02 Percent of Actual Income	Sewer Bill \$210.00 Percent of Actual Income	Water Bill \$610.00 Percent of Actual Income	Flood Control Bill \$351.00 Percent of Actual Income	Sewer & Water Bill \$1,171.00 Percent of Actual Income
Less than \$10,000	10,000	1,419	5.9%	8.4	2.10	6.10	3.51	11.71
\$10,000 to \$14,999	12,500	1,867	7.8%	6.7	1.68	4.88	2.81	9.37
\$15,000 to \$24,999	20,000	3,033	12.7%	4.2	1.05	3.05	1.76	5.86
\$25,000 to \$34,999	30,000	3,237	13.5%	2.8	0.70	2.03	1.17	3.90
\$35,000 to \$49,999	42,500	4,277	17.9%	2.0	0.49	1.44	0.83	2.76
\$50,000 to \$74,999	62,500	4,540	19.0%	1.3	0.34	0.98	0.56	1.87
\$75,000 to \$99,999	87,500	2,642	11.0%	1.0	0.24	0.70	0.40	1.34
\$100,000 to \$149,999	125,000	2,298	9.6%	0.7	0.17	0.49	0.28	0.94
\$150,000 to \$199,999	175,000	402	1.7%	0.5	0.12	0.35	0.20	0.67
\$200,000 or more	200,000	210	0.9%	0.4	0.11	0.31	0.18	0.59

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 23,925	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	1,419	11.71	721.00	1,023,099	10,230,990
\$10,000 to \$14,999	12,500	1,867	9.37	608.50	1,136,070	11,360,695
\$15,000 to \$24,999	20,000	3,033	5.86	271.00	821,943	8,219,430
\$25,000 to \$34,999	30,000	3,237	3.90	-179.00		
\$35,000 to \$49,999	42,500	4,277	2.76	-741.50		
\$50,000 to \$74,999	62,500	4,540	1.87	-1,641.50		
\$75,000 to \$99,999	87,500	2,642	1.34	-2,766.50		
\$100,000 to \$149,999	125,000	2,298	0.94	-4,454.00		
\$150,000 to \$199,999	175,000	402	0.67	-6,704.00		
\$200,000 or more	200,000	210	0.59	-7,829.00		

South Pasadena, CA
 Population: 2011: 27,414
 Poverty Rate: 2012: 7.8%
 Median Household Income: 2011: \$34,130
 EPA 3 Household Income Distribution
 % of \$10K: 16.8%
 % of \$15K: 18.9%
 % of \$25K: 12.6%
 % of \$50K: 17.9%
 % of \$75K: 13.6%
 % of \$100K: 17.3%
 % of \$150K: 10.4%
 % of \$200K or more: 14.8%

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 10,354	Percent of Households	CWA 2% MHI \$1,683.70 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,788.33 as Percent of Actual Income
Less than \$10,000	10,000	479	4.6%	16.8	37.9
\$10,000 to \$14,999	12,500	291	2.8%	13.5	30.3
\$15,000 to \$24,999	20,000	515	5.0%	8.4	18.9
\$25,000 to \$34,999	30,000	504	4.9%	5.6	12.6
\$35,000 to \$49,999	42,500	898	8.7%	4.0	8.9
\$50,000 to \$74,999	62,500	1,857	17.9%	2.7	6.1
\$75,000 to \$99,999	87,500	1,412	13.6%	1.9	4.3
\$100,000 to \$149,999	125,000	1,790	17.3%	1.3	3.0
\$150,000 to \$199,999	175,000	1,078	10.4%	1.0	2.2
\$200,000 or more	200,000	1,530	14.8%	0.8	1.9

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 10,354	Percent of Households	2% MHI \$1,683.70 Percent of Actual Income	Sewer Bill \$154.98 Percent of Actual Income	Water Bill \$1,230.00 Percent of Actual Income	Flood Control Bill NA Percent of Actual Income	Sewer & Water Bill \$1,385.00 Percent of Actual Income
Less than \$10,000	10,000	479	4.6%	16.8	2.55	12.30		13.85
\$10,000 to \$14,999	12,500	291	2.8%	13.5	2.04	9.84		11.08
\$15,000 to \$24,999	20,000	515	5.0%	8.4	1.27	6.15		6.92
\$25,000 to \$34,999	30,000	504	4.9%	5.6	0.85	4.10		4.62
\$35,000 to \$49,999	42,500	898	8.7%	4.0	0.60	2.89		3.26
\$50,000 to \$74,999	62,500	1,857	17.9%	2.7	0.41	1.97		2.22
\$75,000 to \$99,999	87,500	1,412	13.6%	1.9	0.29	1.41		1.58
\$100,000 to \$149,999	125,000	1,790	17.3%	1.3	0.20	0.98		1.11
\$150,000 to \$199,999	175,000	1,078	10.4%	1.0	0.15	0.70		0.79
\$200,000 or more	200,000	1,530	14.8%	0.8	0.13	0.62		0.69

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 10,354	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	479	13.85	1,034.98	495,755	4,957,554
\$10,000 to \$14,999	12,500	291	11.08	922.48	268,442	2,684,417
\$15,000 to \$24,999	20,000	515	6.92	584.98	301,265	3,012,647
\$25,000 to \$34,999	30,000	504	4.62	134.98	68,030	680,299
\$35,000 to \$49,999	42,500	898	3.26	-427.52		
\$50,000 to \$74,999	62,500	1,857	2.22	-1,327.52		
\$75,000 to \$99,999	87,500	1,412	1.58	-2,452.52		
\$100,000 to \$149,999	125,000	1,790	1.11	-4,140.02		
\$150,000 to \$199,999	175,000	1,078	0.79	-6,390.02		
\$200,000 or more	200,000	1,530	0.69	-7,515.02		

Innerville, CA

Population, 2011: 147,479
 Property Value, 2012: 1.4%
 Median Household Income (MHI), 2012: \$18,862
 EPA Affordability Criteria
 2% of MHI: \$1,521.64
 4.5% of MHI: \$3,423.69
 Estimated Average Cost per Household
 Sewer: \$ 32.00
 Water: \$ 643.36
 Flood Control: \$
 Total: \$ 675.36

Table 1: EPA Water & Sewer Affordability Thresholds as a Percent of Actual Household Income

Household Income Distribution	Household Income	Number of Households 55,340	Percent of Households	CWA 2% MHI \$1,521.64 as Percent of Actual Income	CWA & SDWA 4.5% MHI \$3,423.69 as Percent of Actual Income
Less than \$10,000	10,000	2,484	4.5%	15.2	34.2
\$10,000 to \$14,999	12,500	1,939	3.5%	12.2	27.4
\$15,000 to \$24,999	20,000	3,978	7.2%	7.6	17.1
\$25,000 to \$34,999	30,000	3,491	6.3%	5.1	11.4
\$35,000 to \$49,999	42,500	5,584	10.1%	3.6	8.1
\$50,000 to \$74,999	62,500	9,763	17.6%	2.4	5.5
\$75,000 to \$99,999	87,500	8,046	14.5%	1.7	3.9
\$100,000 to \$149,999	125,000	10,975	19.8%	1.2	2.7
\$150,000 to \$199,999	175,000	4,974	9.0%	0.9	2.0
\$200,000 or more	200,000	4,106	7.4%	0.8	1.7

Table 2: Cost per Household for Current Water Service Components

Household Income Distribution	Household Income	Number of Households 55,340	Percent of Households	2% MHI \$1,521.64 Percent of Actual Income	Sewer Bill \$52.08 Percent of Actual Income	Water Bill \$643.36 Percent of Actual Income	Flood Control Bill NA Percent of Actual Income	Sewer & Water Bill \$695.64 Percent of Actual Income
Less than \$10,000	10,000	2,484	4.5%	15.2	0.52	6.44		6.96
\$10,000 to \$14,999	12,500	1,939	3.5%	12.2	0.42	5.15		5.57
\$15,000 to \$24,999	20,000	3,978	7.2%	7.6	0.26	3.22		3.48
\$25,000 to \$34,999	30,000	3,491	6.3%	5.1	0.17	2.15		2.32
\$35,000 to \$49,999	42,500	5,584	10.1%	3.6	0.12	1.51		1.64
\$50,000 to \$74,999	62,500	9,763	17.6%	2.4	0.08	1.03		1.11
\$75,000 to \$99,999	87,500	8,046	14.5%	1.7	0.06	0.74		0.80
\$100,000 to \$149,999	125,000	10,975	19.8%	1.2	0.04	0.51		0.56
\$150,000 to \$199,999	175,000	4,974	9.0%	0.9	0.03	0.37		0.40
\$200,000 or more	200,000	4,106	7.4%	0.8	0.03	0.32		0.35

Table 3: Cost per Household and Household Income Category in Excess of 4.5% of Actual Income

Household Income Distribution	Household Income	Number of Households 55,340	2014 Average Total Water Cost per Household As % of Actual Income	2014 Average Total Water Cost per Household in Excess of 4.5% of Actual Income	Cost per Household Income Category in Excess of 4.5% of Actual Income \$	10-Year Impact \$
Less than \$10,000	10,000	2,484	6.96	245.64	610,170	6,101,698
\$10,000 to \$14,999	12,500	1,939	5.57	133.14	258,158	2,581,585
\$15,000 to \$24,999	20,000	3,978	3.48	-204.36		
\$25,000 to \$34,999	30,000	3,491	2.32	-654.36		
\$35,000 to \$49,999	42,500	5,584	1.64	-1,216.86		
\$50,000 to \$74,999	62,500	9,763	1.11	-2,116.86		
\$75,000 to \$99,999	87,500	8,046	0.80	-3,241.86		
\$100,000 to \$149,999	125,000	10,975	0.56	-4,929.36		
\$150,000 to \$199,999	175,000	4,974	0.40	-7,179.36		
\$200,000 or more	200,000	4,106	0.35	-8,304.36		

Yerba Buena, CA

Population, 2011: 112

Poverty Rate, 2011: NA

Median Household Income, 2011: NA

EPA Affordability Criteria
% of MHI: 6.4
4.9% of MHI: NA

Customer Average Cost per Household

Water	\$ 134.00
Waste	\$ 422.00
Financial Impact	\$
Total	\$ 556.00

Appendix B *Bias, Estimation and Uncertainty*

Generally speaking, the estimates developed in this study are accurate and reliable. All studies, however, are subject to several forms of error and uncertainty. This Appendix is intended to address some of the potential for estimation error regarding this study method and application.

Data Bias:

- Data on population, Median Household Income and number of households for income deciles is taken directly from the latest Census reports at Census.Gov. These data enjoy the accuracy achieved by the Census survey data techniques; and they suffer the same deficiencies of such.
- Cities participating in the survey are self-selected for whatever reason they chose to participate. This introduces an element of bias because not all cities are included. Therefore, the findings may be somewhat indicative of all California cities but are best seen as representing the survey cities involved rather than all California cities.

Estimation:

- Estimating the dollar amount of Median Household Income at 2.0% and at 4.5% is straightforward arithmetic and not subject to estimation error, other than the inherent error involved with the Census' calculation of estimated Median Household Income for each city involved.
- Estimating the percent of households impacted by cost per household and comparisons to current costs and affordability criteria is also straightforward arithmetic, but has several factors that are identified as possibly introducing estimation error.
 - ◊ In order to estimate the percentage of households that spend in excess of 4.5% of their actual income on public water the analysis applied relies on some assumptions
- This research relies on city expertise to provide cost per household data for sewer, water and flood control. Cities have a practical advantage in knowing these residential costs by virtue of their recurring experience with water and sewer billing over time, and an intimate knowledge of their customer base.
- Local expertise is involved in matching number of households to local service hook-ups. These figures often do not match, primarily because in multi-household dwellings a single hook up may service a small to large number of households that reside in the units. Again, local expertise is relied on to confirm the accuracy of the estimates.
- In one city, Inglewood, the local expertise of a city official intimate with system operations asserted that the difference between household number and hook-ups could not be easily resolved. This is the case because many households in Inglewood are served by another regional system. Therefore, the data for Inglewood exhibited in the results are limited to the cost per household provided by the city, and the estimation of 2.0% and 4.5% of Median Household Income. That same Inglewood representative also cautioned that the consumption rates for the poorer households might be overestimated.

Error:

Systemic error may affect the calculation of estimates when using number of households, but there are countervailing factors that may minimize the importance of error in this instance. For example, the lowest and highest income deciles are, respectively, \$10,000 or less a year, and \$200,000 or more a year. The convention used for the purposes of this study was to assign all households in this category to an assumed income of \$10,000, when some households in this category might make less. Similarly, for the highest income category \$200,000 annual income was used although these households might make more than that.

The other income deciles were utilized by specifying the mid-point of income for each category. Thus, the second lowest income decile \$10,000 to \$14,999 is represented for purposes of calculation as \$12,500.

An additional error concern is the fact that some cities could not determine cost per household when their households were served by multiple water or sewer systems. Cities were asked to apply local expertise in these cases.



The Mayors Water Council (MWC) provides a forum for Mayors to discuss issues impacting how they provide safe, adequate and affordable water and wastewater services and infrastructure in America's Principal Cities in the 21st Century. It is open to all Mayors, focusing on water resource issues, including: watershed management; water supply planning; surface and sub-surface water infrastructure financing and rehabilitation; water conservation, Public-Private Partnerships; and asset management.



The United States Conference of Mayors

1620 Eye Street, NW
Washington, DC 20006
202-(202) 293-7330
(202) 293-2352 (fax)
www.usmayors.org

Senator INHOFE. Thank you, Mayor.
Mr. Chow is the Director of the Department of Public Works for the city of Baltimore.
Mr. Chow.

STATEMENT OF RUDOLPH S. CHOW, P.E., DIRECTOR, DEPARTMENT OF PUBLIC WORKS, BALTIMORE, MARYLAND, ON BEHALF OF THE WATER ENVIRONMENT FEDERATION

Mr. CHOW. Good morning, Chairman Inhofe, Ranking Member Boxer, and members of the Committee. My name is Rudy Chow. I am the Director of the Department of Public Works for Baltimore City. It is my honor to be here today on behalf of the city of Baltimore, the Water Environment Federation, and the WateReuse Association to discuss the importance of the Federal role in keeping water and wastewater infrastructure affordable. I have over 30 years' experience working in the water and wastewater field.

Today you are examining a very important national issue that is near to my heart—how we can address the burgeoning need for investment in our water infrastructure. My boss, Mayor Rawlings-Blake, appeared before this committee's subcommittee back in 2012 to testify on the challenges of financing water infrastructure using Baltimore experiences.

Baltimore is faced with the massive cost of more than over \$3 billion of regulatory mandates, including wet weather consent decree, or ENR, enhanced nutrient removal at our wastewater treatment plants as well as our stormwater improvements, and covering up our open finished water reservoirs.

This is just a snapshot of the project that we must undertake to upgrade and to meet today's standard. We consider ourselves to be good stewards of the environment and public health of our community and the Chesapeake Bay Watershed, and take these obligations seriously. We are also tasked with maintaining and improving a large and aging infrastructure system.

So how do we pay for all of these? To say that Baltimore is not a wealthy city is a gross understatement. The median household income, 40 percent of our population in Baltimore falls below the national median household income level, and 25 percent falls below the poverty line. It is that population base that will be disproportionately impacted by water bill rate increases to pay for the infrastructure investment that we must take.

My written testimony highlights a number of efforts to WEF and other water organizations are undertaking to identify policy changes and programs that will assist communities and ratepayers dealing with affordability issues. I urge you to review these items in the testimony.

Senator Cardin's legislation to reauthorize and increase funding in the Clean Water and Drinking Water SRF program is an important first step. Congress should reauthorize both SRF programs and increase the funding for them. In Baltimore, we have direct experiences with SRF programs and know they work well. We have gotten, in the last 3 years, over \$168 million in low interest loans from the Maryland SRF program and \$4.5 million of principal forgiveness loans.

Additionally, Congress should support increased funding from other existing financing grant programs such as WIFIA, USDA Raw Development programs. All these programs are vital to help communities make needed and wise investments in their infrastructure.

Note when I speak about the water infrastructure, I use the word investment. Those of us that are familiar with our Federal infrastructure funding programs have long known that the Congressional Budget Office scoring for the program does not fully reflect the complete economic benefits of these programs. For this hearing, WEF and WaterReuse Association contracted a team of economists to conduct the quick analysis of the economic benefits. Though the analysis has not been completed, upon completion we will submit that for the record.

The analysis estimated that economic impact of SRF spending in four example States, namely California, Maryland, Ohio, and Oklahoma, which represent a good cross-section of States across the Nation, representative of geographic size, population size, cost of living, as well as rural versus urban population, and general age of infrastructure.

The model of analysis was based upon the IMPLAN economic model to estimate the impact of SRF spending on output, labor income, jobs, and Federal tax revenues in the four States. IMPLAN captures the effects of spending as it ripples through the economy. So, for example, utility spending of SRF will result in what we call direct impact effect, which is the construction contractor. When the construction contractor reuses that money to buy goods and services, that is what we call an indirect effect. And then the fact that the indirect spending generates employment, creating additional income for households, which result in what we call induced effect. So the total economic impact is the sum of the direct, indirect, and induced effects.

The results of the analysis show that Federal investment in water and wastewater infrastructure through the SRF programs has meaningful benefits to the economy, U.S. Treasury, and households across the Nation.

For starters, the analysis found that SRF spending generates Federal tax revenues. Total State and Federal annual SRF spending in the four States average about \$1.46 million—

Senator INHOFE. [Remarks made off microphone.]

Mr. CHOW. Thank you.

So, in other words, every million dollars of SRF spending is estimated to generate about what we call \$2.25 million in total output for the State economy, on average.

I urge the committee and Congress to continue to support our efforts in the local levels to invest in water infrastructure. The investment we make, with your support, delivers environmental, public health, and economic benefits to our country. Thank you very much.

[The prepared statement of Mr. Chow follows:]

**Testimony of
Mr. Rudolph S. Chow, P.E.
on behalf of
The City of Baltimore, Maryland,
and
The Water Environment Federation,
and
The WateReuse Association
before the
Committee on Environment & Public Works
United States Senate**

Hearing: "The Federal Role in Keeping Water and
Wastewater Infrastructure Affordable"
Thursday, April 7, 2016

Chairman Inhofe, Ranking Member Boxer, and Members of the Committee:

My name is Rudy Chow and I am the Director of the Department of Public Works for Baltimore City¹. It is my honor to be here today on behalf of the City of Baltimore, the Water Environment Federation (WEF)² and the WateReuse Association to discuss the importance of the federal role in keeping water and wastewater infrastructure affordable. My testimony will focus upon three significant issues affecting water and wastewater infrastructure:

- *Affordability* – The challenges communities are having with meeting their regulatory requirements with limited funds is a national problem.
- *Federal Funding of Infrastructure* – Congress should provide robust support for existing and proposed federal funding and financing programs.
- *Economic Benefits of SRF Funding* – WEF and the WateReuse Association³ recently conducted an analysis of the estimated economic impact generated by SRF spending in four

¹ Rudolph S. Chow, P.E., has been the Director of the Baltimore City Department of Public Works since February 1, 2014. Prior to his appointment as director he served as Deputy Director and was its Bureau Head for Water and Wastewater for three years. Prior to his arrival in Baltimore Mr. Chow spent 27 years with the Washington Suburban Sanitary Commission in Laurel, Maryland. He has a Bachelor's degree in Civil Engineering from George Washington University and a Master's Degree in Environmental and Water Resources Engineering from the University of Maryland College Park. He is a registered Professional Engineer in the States of Maryland and Delaware. He is an active member in ASCE, WEF, AWWA, and APWA. The City of Baltimore is one of 24 jurisdictions in the State of Maryland with a diverse population of 626,644 people. The Baltimore City water and wastewater utilities are regional systems serving nearly 2 million people living in Baltimore and the surrounding counties.

² The Water Environment Federation (WEF) is a not-for-profit technical and educational organization of 33,000 individual members and 75 affiliated Member Associations representing water quality professional around the world. Since 1928 WEF and its members have protected public health and the environment. As a global water sector leader, WEF's mission is to connect water professionals; enrich the expertise of water professionals; increase the awareness of the impact and value of water; and provide a platform for water sector innovation.

³ The WateReuse Association is a not-for-profit organization that educates the public on the importance of water reuse and advocates for policy, laws and funding to increase alternative water supply development in communities across the

example states, including taxes that return to the federal government and the employment and output from that spending.

Introduction

You are examining a very important national issue today that is near to my heart – how we can address the burgeoning need for investment in our water infrastructure. Baltimore’s Mayor Stephanie Rawlings Blake appeared before this Committee’s Subcommittee on Water and Wildlife in February of 2012 to testify on the challenges of financing water infrastructure, using our Baltimore experiences to illustrate the need and to advocate for funding initiatives to address the growing problem of crumbling infrastructure and declining sources of funding. I would like to be able to state that progress is being made by communities in mitigating the impact of old and failing water infrastructure, but that is just not the case. These needs are an increasing burden on our citizens, particularly our most vulnerable populations.

To give you a sense of the magnitude of the problem our Nation is facing, consider the statistics supporting the American Society of Civil Engineers (ASCE) Report Card issued in 2013⁴ that resulted in a D rating for water and for wastewater and stormwater infrastructure.

- There are 170,000 drinking water systems in the U.S., with 54,000 of those systems serving more than 264 million people.
- It is estimated that there are more than 1 million miles of water mains in the U.S. and over 75% of these pipes are in need of repair.
- An estimated 240,000 water main breaks occur each year. If the Nation’s most urgent replacement needs were spread over 25 years, the cost would be an estimated \$1 trillion.⁵
- Furthermore, the ASCE estimates the infrastructure needs for the Far West, Great Lakes, Mid-Atlantic, Plains, and Southwest regions would cost *each person* living in those regions more than \$1,000.
- There are an estimated 700,000 to 800,000 wastewater pipes in the U.S., many of which were built after WWII and are at the end of their useful life.
- According to an EPA Clean Watersheds Needs Survey *conducted in 2012*, the capital investment need for wastewater for the Nation will need \$271 billion over the next 20 years, but the report states that the data underestimates stormwater infrastructure needs by roughly \$100 billion.
- These needs are largely to address pipes, treatment systems, and federal stormwater requirements.

United States. Our membership of water utilities, businesses, government agencies and not-for-profit organizations is dedicated to recycling water to ensure communities have a safe, reliable and cost-effective supply of water, which is necessary to sustain a high standard of living and robust economy.

⁴ The full ASCE Report Card can be found at the following link: <http://www.infrastructurereportcard.org/grades/>

⁵ Source: American Water Works Association

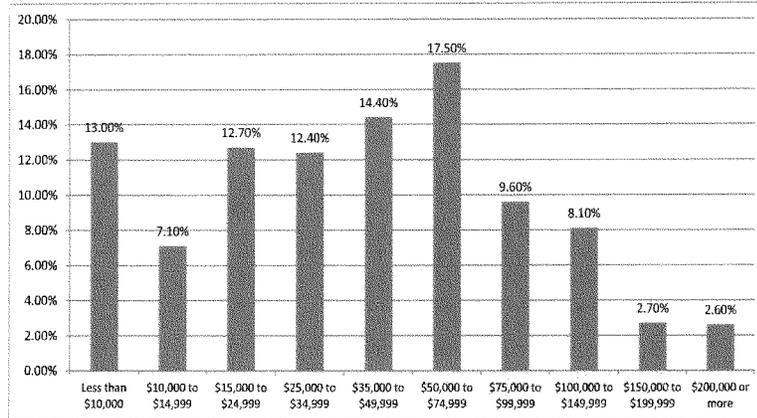
I have been in the public water infrastructure business for more than 30 years so these statistics do not surprise me. Environmental obligations are competing with the maintenance of critical infrastructure for capital funds. But these underground systems have been kept in service well beyond their useful lives and have literally reached the breaking point – and emergency repairs cost more than planned replacement, not to mention the loss of treated water, customers and businesses without water, and the resulting property damage from breaks.

My own City of Baltimore is faced with massive costs of more than \$1.5 billion to comply with a Wet Weather Consent Decree, just under a billion dollars in nutrient removal facilities at our two wastewater treatment plants to help meet the Chesapeake Bay TMDL, an MS4 permit expected to cost us \$200 million in stormwater improvements over the 5 year permit period, and more than \$350 million to cover open finished water reservoirs. This is just a snapshot of the projects we must undertake to remain in compliance with some of Baltimore's environmental obligations and does not include our efforts to extend the life of our underground systems. We consider ourselves good stewards of the environment and public health of our community and the Chesapeake Bay watershed, and take these obligations seriously. We are also tasked with maintaining and improving a large and aging system, which is equally important in many regards because if we do not maintain and improve the system, there may be eventual negative impacts upon our community's public health and environment.

As active members of the U.S. Conference of Mayors, we know the story is the same whether you live in Baltimore, Maryland; Lima, Ohio; or New York City. When it comes to the financial pressures of running modern water, wastewater and stormwater systems, Baltimore is not alone, but every community is on its own when it comes to financing the solutions. It is hard to convince your citizens and ratepayers to accept annual increases in water and sewer rates to comply with federal requirements when basic infrastructure is crumbling. We need to be able to prioritize and balance our investments.

Affordability

To say that Baltimore is not a wealthy city is a gross understatement. The Median Household Income (MHI) of Baltimore, a key indicator in how EPA looks at a community's affordability, is \$39,386. But if you examine the income distribution at the Census tract level, the income distribution of Baltimore is disproportionately skewed low, with MHI within these tracts well below the Citywide MHI. Twenty percent of households and 15 percent of families make less than \$10,000 per year; 33 percent of households and 27 percent of families make less than \$20,000 per year; and 45 percent of households and 39 percent of families make less than \$30,000 per year.



To add to these statistics, 26 percent of our population is living below the poverty line and 12 percent is living at less than 50 percent of the poverty line.

While these statistics are striking, the way that EPA has viewed affordability when considering enforcement initiatives since 1997 focused solely on a simple calculation based on MHI. In 2014 EPA issued new guidance to the Regions which permitted regional staff to consider other relevant economic factors such as demographics, income distribution, and the holistic Clean Water Act and Safe Drinking Water Act needs of the jurisdiction. This guidance has opened the door for rational discussion about affordability and prioritization, with the potential to make sure we are doing what is best for our citizens, our infrastructure, and the environment. The true test now is making sure that jurisdictions and EPA walk through that door together. Change is always difficult and after decades of working within the same affordability framework, some regions are finding the change to the new approach challenging and preferring to return to the standard 1997 financial capability analysis. It is vital that all of the relevant data are considered regarding a jurisdiction's ability to pay for projects is considered in enforcement actions and compliance timeframes.

Pressures on ratepayers to support increased investments in wastewater infrastructure to meet regulatory obligations have lead WEF and other water associations to call upon the EPA to reassess its definition of affordability and allow for communities to have greater flexibility in their planning and funding priorities. WEF has taken a number of steps to assist communities with this problem. In 2014, WEF, AWWA and the US Conference of Mayors produced the "Assessing the Affordability of Federal Water Mandates" report in 2013 that recommended a number of policy changes to the EPA when assessing affordability capabilities for communities. The report recommended that the EPA should not solely focus upon MHI when assessing affordability, but should focus on households at the lower end of the income spectrum. The report also urged that other financial and budget liability pressures on the community should be factored into the EPA's affordability assessment.

WEF, AWWA and the US Conference of Mayors also released the *Affordability Assessment Tool for Federal Water Mandates* to help communities consider factors affecting affordability and understand the implications of federal water mandates. The tool includes worksheets to help

communities accurately discern the burden of higher water bills on households at different income levels and with various demographic characteristics.

Additionally, WEF, Associations of Metropolitan Water Agencies (AMWA), National Association of Clean Water Agencies (NACWA), National Association of Water Companies (NAWC), and Water Environment Research Foundation (WERF) are collaborating on a resource guide that examines ratepayer subsidy program models in use today with a specific focus on the constitutional, statutory, regulatory, and policy underpinning of these various models at the state and local levels. The report will provide state-by-state analysis of various subsidy programs available, the legal framework that support them, and the specific legal or regulatory barriers to the use of alternative rate structures that may be in existence. The resource guide will be published by association to assist with the development of local, state, or federal assistance programs.

In Baltimore, our poorer citizens are already feeling the strain of their water bills and with each passing year that stress is working its way into the pockets of our moderate income families. Our citizens cannot continue to sustain this trajectory of increases without some help. Several Members of Congress and water organizations, including WEF, have begun to consider the creation of a new ratepayer assistance program modeled after the successful Low Income Home Energy Assistance Program (LIHEAP). The conceived water bill assistance program would provide support to eligible low-income households similar to the way the LIHEAP program helps low-income households with their heating and cooling energy costs. This program concept warrants further examination by Congress as a potential tool to helping low-income ratepayers.

WEF and WaterReuse Association are supportive of the EPA's efforts to address financing challenges for communities dealing with affordability issues. The EPA's Water Infrastructure Resilience and Finance Center (WIRFC) is compiling a compendium of successful ratepayer assistance programs across the country. WIRFC is providing technical assistance directly and through the EPA supported Environment Finance Centers to communities. WIRFC's WaterCARE technical assistance grants to mid-sized communities to help them address local challenges they are having with financing infrastructure investments, including affordability and financing.

Another relatively new innovation is the integrated planning framework. First introduced by EPA in 2012, integrated planning, in theory, gives jurisdictions the ability to look holistically at their Clean Water Act obligations and evaluate them in terms of the environmental, social, and public health benefits that they provide, then prioritize the highest value projects. This systematic evaluation and prioritization allows a jurisdiction to weigh competing system needs, like aging infrastructure and the new regulatory requirements, to come up with the best possible schedule to meet their needs.

Since the beginning of the integrated planning idea, jurisdictions like Baltimore have been asking EPA to allow us to include drinking water projects into this prioritization. EPA has been resistant to this idea, arguing that mandates based off of the Safe Drinking Water Act, in particular, should not be subject to prioritization because their public health impacts are too important to be weighed against anything else. However, as was most dramatically shown in Flint, Michigan recently, jurisdictions are forced every day to make decisions that balance affordability against system needs. Without a framework that gives appropriate weight to the public health considerations of drinking water projects, it is all too easy for things that are "out of sight, out of mind" to get pushed to the back of the list. I am happy to state that WEF and WaterReuse Association support funding for the EPA's Integrated Municipal Stormwater and Wastewater Planning Approach to help communities address affordability challenges. The President's FY17 Budget request includes \$6.5 million to support Integrated Planning pilot projects through this effort by the EPA. WEF is very supportive

of funding for pilot projects in the FY17 budget and similar efforts by the EPA to support integrated planning.

Local jurisdictions understand their holistic system needs better than anyone, and I can confidently say that none of us are asking the federal government to come in and prioritize our projects for us. What we are asking is that EPA engage with us in a fact-based dialogue about all of our affordability issues, system needs, and public health priorities whenever we are discussing a new regulatory mandate or enforcement action. Every year science and technology advance to continually show us new things that we could be doing. While keeping up with the newest standards is important, new mandates, particularly new underfunded mandates, should be appropriately weighed against ongoing infrastructure needs like keeping pipes and plants in working order. While it is truer of some jurisdictions than others, no one ever has all of the money to do everything our engineers and planners would like us to do to keep our systems at their peak. In order to do the best we can with a financial burden our citizens can afford, we need EPA to engage with us in a dialogue about all of our competing priorities, not just hand out mandates. As our Mayor is fond of saying: “When everything is a priority, nothing is a priority.”

Federal Funding for Infrastructure

I cannot think of a more important investment to be made than in our drinking water, our wastewater, and our stormwater systems. We sometimes forget that, even in their current state, many countries would love to have the water systems we enjoy. We established these systems many years ago to protect our people from outbreaks of cholera and other waterborne diseases. But a lot has happened since sanitary engineering first began shaping our water infrastructure. We know much more about the effects we humans and our activities have on our waterways and on public health.

WEF’s members are the water professionals that run the wastewater and stormwater infrastructure in communities across the country and around the globe. WEF has long been supportive of federal funding to assist communities with maintaining and modernizing their wastewater and stormwater infrastructure. WEF’s members have made addressing our nation’s infrastructure funding challenges a top priority for the association.

WEF and WateReuse Association is very supportive of full funding for existing infrastructure funding programs. The Clean Water SRF program is one of the most successful federal infrastructure funding programs ever and Congress must reauthorize it and increase the authorized fund levels to help address our national needs. Over the last three fiscal years, Baltimore has obtained \$168,566,000 in low-interest loans through the Maryland SRF loan program, as well as \$4,500,000 in Principal Forgiveness loans. Below market interest rate loans and Principal Forgiveness loans help make water and sewer rates more affordable for our City residents, many of whom are low-income.

WEF and WateReuse Association recently joined with the American Public Works Association, Associations of Metropolitan Water Agencies, National Association of Clean Water Agencies, National Association of Counties, National League of Cities, National Association of Water Companies, U.S. Conference of Mayors, and Water Environment Research Foundations, on a letter to the House and Senate Appropriations Committees requesting that the FY17 Budget fund the Clean Water SRF and Drinking Water SRF at \$2 billion each. The EPA’s recent Clean Water Needs Surveys estimated that the nation will need \$271 billion over the next 20 years, but the report

states that the data underestimates stormwater infrastructure needs by roughly \$100 billion. The EPA's recent Drinking Water Needs Surveys estimated that the nation will need \$384 billion over the next 20 years. Combined, the two surveys call for \$655 billion over the next 20 years, which make the requested increase for the Clean Water SRF from \$1.39 billion in FY16 to \$2 billion in FY17 warranted and a justifiable increase by Congress.

Additionally, Congress should pass legislation to reauthorize the Clean Water and Drinking Water SRF programs and increase the authorized funding levels. WEF and WaterReuse Association support passage of S. 2583 by Sen. Ben Cardin to reauthorize the programs and increase their funding levels. A later portion of testimony includes further justification for increased funding.

The Water Infrastructure Finance & Innovation Act (WIFIA) is another financing tool that Congress should provide significant funding for and support the full authorization of. WEF is extremely grateful to Chairman Inhofe and Ranking Member Boxer for their leadership in creating WIFIA in 2014, and the amendments to the program in 2015. To be clear, WEF and WaterReuse Association are opposed to reducing funding for the SRF programs to fund the WIFIA program. Both programs are vital and must be fully funded.

The FY17 Budget request letter that WEF co-signed with the other major water and municipal associations also requested that the WIFIA program be funded at the authorized level of \$35 million. The EPA has calculated a leveraging ratio of 1:60 for the WIFIA programs, which means that for every \$1 in appropriation for the WIFIA program, the Treasury Departments will be able to loan \$60 for infrastructure projects. A \$35 million appropriation would equal \$2,100,000,000 in loans and loan guarantees from the Treasury. Under the WIFIA program statute, the federal share of a project cannot exceed 49%, which means the combined federally backed loans and the local cost share will equal over \$4.2 billion in infrastructure investments.

While the WIFIA program has yet to begin making loans and loan guarantees, WEF has received word of strong interest in the program for potential applicants. The program that Congress authorized in 2014 is a pilot program set to sunset after FY19, which means that if Congress appropriates funding for the program in FY17, there will only be three fiscal years to provided funding for infrastructure investments and for Congress to evaluate the effectiveness of the program. WEF urges Congress to make permanent the WIFIA program and authorize appropriations for the program at the authorized FY19 level of \$50 million going forward.

Additionally, other important existing federal funding programs should continue to provide support for water and wastewater infrastructure investments. The United States Department of Agriculture Rural Assistance Programs, particularly the Water and Waste Disposal Loan and Grant Program, is an important source of funding and financing for rural communities.

The Bureau of Reclamation Title XVI program identifies and investigates opportunities to reclaim and reuse wastewaters and naturally impaired ground and surface water in the 17 Western States and Hawaii. Title XVI includes funding for the planning, design, and construction of water recycling and reuse projects, on a project specific basis, in partnership with local government entities. Since 1992, approximately \$639 million in Federal cost-share has been leveraged with more than \$2.4 billion in non-Federal funding to design and construct water recycling projects. In 2014, an estimated 378,000 acre-feet of water was recycled through Title XVI projects. WEF, WaterReuse, and the other water and municipal associations that signed onto the FY17 Budget request letter to Congress referred to earlier in this testimony, have requested that the Title XVI program be funded at \$23.365 million in FY17.

WEF and WaterReuse Association are strongly opposed to any efforts to change tax deductibility levels that may affect tax-exempt municipal bonds. Proposals in Congress and in the President's FY17 Budget proposal would have extremely harmful impacts upon the appeal and issuance of tax-exempt municipal bonds. Tax-exempt municipal bonds fund over 80% of water infrastructure investments, of which approximate 50% of the bonds are purchased by individuals directly or through mutual funds⁶. Any efforts to change the way tax-exempt municipal bonds work should be rejected by Congress.

Recent Findings of Economic Benefits Analysis of Federal SRF Funding

Note that when I speak about water infrastructure I use the word "investment" because smart, prioritized capital projects and asset management foster a healthy and sustainable environment AND economy. It has long been debated on Capitol Hill and among supporters of the SRF programs that the scoring for the programs do not fully reflect the complete economic benefits of federal funding of the programs. This Committee recognized this inconsistency in the budget scoring of the SRF programs, and asked WEF and WaterReuse Association to look into a more accurate calculation of the tax revenues generated by federal SRF funding as it passes through the economy. For this hearing, WEF and the WaterReuse Association contracted a team of economists to conduct a quick analysis of the economic benefits. Although the time to complete the analysis was very limited, the findings are significant. The full analysis is still being completed and will be submitted to the Committee for the record.

The analysis estimated economic impact of SRF spending in four example states, including taxes that return to the Federal government, and employment and output that the spending generates. The four states chosen were California, Maryland, Ohio, and Oklahoma, which represent a good cross section of states across the nation, representative of geographic size and population size, cost of living, rural and urban populations, and general age of infrastructure.

The model for the analysis was based upon the IMPLAN⁷ economic model to estimate the impact of SRF spending on output, labor income, jobs and Federal tax revenues in the four states. IMPLAN captures the effect of spending as it ripples through the economy, and is very commonly used economic model across all sectors of the economy. For example, utility spending of SRF funds results in direct spending on construction contractors (known as the direct effect). The construction contractor then re-spends this money on goods and services in the economy that it needs to operate its business (the indirect effect). Direct and indirect spending generate employment, creating additional income for households that generates even more spending (the induced effect). The total economic impact is the sum of direct, indirect and induced effects. This generates federal, state and local tax revenues.

To model SRF spending in IMPLAN, the analysis used recent total state SRF spending in each state averaged over 2012-2014. This is equivalent of modeling a doubling of current level of SRF expenditures in each state. The data was obtained from EPA's National Information Management System Performance Reports for clean water and drinking water infrastructure needs. The EPA's

⁶ The Impacts of Proposals to Scale Back or Eliminate Tax-Exempt Municipal Bond Financing On Public Drinking Water & Wastewater Systems, NACWA & AMWA, July 2013

⁷ The IMPLAN economic model was originally developed by the U.S. Forest Service in 1972. It is used by thousands of federal, state and local government agencies to help make informed decisions and assess the potential impacts of policy and tax decisions on the economy.

National Information Management System Performance Reports is the data source for the Clean Water Needs Survey and Assessment and Drinking Water Needs Survey and Assessment reports.

For this analysis, the data was used to allocate the total SRF spending in each state across different project types based on the level of need in each needs category in the 2011 Clean Water and Drinking Water needs survey. The analysis then mapped the spending associated with the different needs categories into IMPLAN sectors. For example, for each needs category, a percentage of spending was allocated to IMPLAN sectors such as construction, heavy equipment, pipe, engineering and design services, local government/water utilities, and other categories.

The results of the analysis were significant and show that federal investments in water and wastewater infrastructure through the SRF programs have meaningful benefits to the economy, U.S. Treasury, and households across the nation.

Results

SRF spending generates Federal tax revenues.

- Total (state and federal) annual SRF spending in the four states has averaged \$1.46 billion. This generated \$234 million of Federal tax revenues. **Therefore, every million of SRF spending is estimated to generate \$160,000 in Federal taxes from those states.** This does not include tax revenues generated by indirect spending by firms in other states (other than CA, OH, MD and OK). The model is not able to capture indirect spending that a contractor and firm may take out of CA, OH, MD or OK, and spend in a way that would generate more Federal taxes.
- When compared only to the federal portion of SRF spending, which accounts for 23% of total spending, **every \$1 million of federal spending generates \$695,000 in Federal taxes from those states.**⁸

In addition to tax revenues, spending results in increased in employment and labor income in the four states.

- On average, **14 jobs are generated** in these four states for each million dollars in SRF spending. Plus, additional jobs are likely created by indirect spending in other states.
- SRF spending generates high paying jobs – each job is estimated to bring about *\$60,000 in labor income.*

SRF spending generates output in the state economies.

- **Every million dollars of SRF spending results in \$2.25 million dollars in output for the states' economies, on average.**

Conclusion

I have touched upon just some of the water infrastructure challenges we at the local government level are faced with, and some of the remedies we believe will help lessen the financial impact on

⁸ This view compares the same amount of taxes generated from SRF spending but compares it only to the federal portion of the total spending.

our citizens, particularly those who have so little income to spare. Full federal funding for this infrastructure through such programs as the SRFs and WIFIA will help us begin to make inroads in our water and wastewater needs. As shown in the WEF and WateReuse study, these program investments should not be seen as just another item on the expense side of the federal government ledger. Investing in water infrastructure delivers environmental, public health and economic benefits critical to the health and safety of our country.

Thank you Mr. Chairman and Committee Members for your kind attention. I would be happy to answer any questions you may have.



The Economic, Job Creation, and Federal Tax Revenue Benefits of Increased Funding for the State Revolving Fund Programs



April 2016

Executive Summary

The Clean Water and Drinking Water State Revolving Fund programs are considered to be among the most successful infrastructure funding programs administered by the federal government and implemented by States. They have provided billions of dollars in low-interest loans for thousands of projects. This investment has improved public health and the environment and currently supports part of the needed continuing efforts by communities all across the United States to provide safe drinking water and wastewater treatment to millions of Americans. However, substantially higher investments are needed if we are to maintain and increase our infrastructure's ability to keep up with the demands of our population and economic development.

The Water Environment Federation (WEF) and WasteReuse Association recently conducted an analysis to estimate the economic impact of proposed increased SRF appropriation levels, including taxes that return to the federal government, and employment and economic output that the spending generates. This study shows that for every federal dollar of federal SRF spending, 21.4% is returned to the federal government in the form of taxes. The study also shows that federal SRF allocations account for approximately 23% of total SRF spending, which also includes state matching funds and funds from state program loan repayments. Thus, the proposed \$34.7 billion federal allocation will leverage an additional \$116.2 billion in state spending (\$151 billion total). Therefore, together, the proposed federal allocations and state SRF program funds will result in \$32.3 billion in federal tax revenue. Thus, when leveraged state program funds are taken into account, every dollar of federal SRF spending results in \$0.93 in federal tax revenue. The study also shows increased employment and labor income as well as increases in total economic output. This report summarizes the study findings and output of the economic model.

The Economic, Job Creation, and Federal Tax Revenue Benefits of Increased Funding for the State Revolving Fund Programs

The Water Environment Federation (WEF) and WasteReuse Association recently conducted an analysis to estimate the economic impact of proposed increased federal Drinking Water (DW) and Clean Water (CW) State Revolving Fund (SRF) appropriation levels, including taxes that return to the federal government, and employment and economic output that the spending generates. The increased funding levels modeled in this analysis are intended to reflect proposals in Congress to increase the SRF appropriations levels for fiscal years (FYs) 2017 through 2021. The chart below reflects recent fiscal year appropriations and proposed increased amounts.

FY	CWSRF*	DWSRF*
2010	\$2,100	\$1,387
2011	\$1,522	\$963.1
2012	\$1,466	\$917.9
2013	\$1,376.1	\$861.3
2014	\$1,448.9	\$906.9
2015	\$1,448.9	\$906.9
2016	\$1,394	\$863
2017	\$3,200	\$1,500
2018	\$3,200	\$2,000
2019	\$3,600	\$2,000
2020	\$4,000	\$3,200
2021	\$6,000	\$6,000

*in millions

State Revolving Fund Programs

The CW and DW SRF programs are considered to be among the most successful infrastructure funding programs administered by the federal government. Since their creation, the programs have provided more than \$135 billion in low-interest loans for over 47,000 projects at a cost of approximately \$55 billion to the federal government. As a direct result of these investments in drinking water and wastewater infrastructure, the public health of communities and the quality of the environment have improved significantly. 85% of Americans get their drinking water from public water systems. Over 73% of Americans are on publicly owned wastewater treatment systems that return clean water back into the environment.

Nonetheless, the nation's drinking water, wastewater, and stormwater infrastructure needs to remain in compliance with regulatory standards exceed the funding levels being currently provided by the SRF programs and other infrastructure funding sources. The recent "U.S. Environmental Protection Agency Clean Water Needs Survey" estimated that the nation will need \$271 billion over the next 20 years for wastewater and stormwater infrastructure, but the report states that the data underestimates stormwater infrastructure needs by roughly \$100 billion. EPA's recent "Drinking Water Needs Survey" estimated that the nation will need \$384 billion over the next 20 years. Combined, the two surveys call for \$655 billion over the next 20 years, which equals \$32.75 billion per year, for communities to remain in compliance with the Clean Water Act and Safe Drinking Water Act.

As a result, communities across the nation and the organizations that represent them in Washington, DC, are calling on Congress to significantly increase the funding amounts for the SRF programs in order to help protect public health, the environment, and the nation's economic growth. To help Congress better understand the potential impacts of increasing the appropriations levels for the SRF programs, WEF and WasteReuse Association conducted an analysis of how SRF spending ripples through the economy and effects the federal treasury.

Results

SRF spending generates federal tax revenues:

- The total proposed federal allocations for 2017 through 2021 amount to \$34.7 billion (2016 USD), including \$14.7 billion for the DWSRF and \$20.0 billion for the CW SRF. This generates \$7.43 billion of federal tax revenues. **Thus, for every federal dollar of federal SRF spending, 21.4% is returned to the federal government in the form of taxes.**
- Federal SRF allocations account for approximately 23% of total SRF spending, which also includes state matching funds and funds from state program loan repayments. **Thus, the proposed \$34.7 billion federal allocation will leverage an additional \$116.2 billion in state spending (\$151 billion total).**
- Together, the proposed federal allocations and state SRF program funds will result in \$32.3 billion in federal tax revenue. **Thus, when leveraged state program funds are taken into account, every dollar of federal SRF spending results in \$0.93 in federal tax revenue.¹**

SRF spending results in increased employment and labor income:

- On average, 16.5 jobs are generated for every million dollars in SRF spending. **The proposed \$34.7 billion federal allocation will result in 506,000 jobs.**
- SRF spending generates high-paying jobs – each job is estimated to bring about \$60,000 in labor income.

SRF spending generates output in the U.S. economy:

- Every million dollars of SRF spending results in \$2.95 million in output for the U.S. economy. **Thus, the proposed \$34.7 billion federal allocation will generate \$102.7 billion in total economic output.**

Methodology

The analysis used the IMPLAN economic model to estimate the impact of SRF spending on output, labor income, jobs, and federal tax revenues. The IMPLAN economic model was originally developed by the U.S. Forest Service in 1972. It is used by thousands of federal, state, and local government agencies to help make informed decisions and assess the potential impacts of policy and tax decisions on the economy.

IMPLAN captures the effect of spending as it ripples through the economy. For example, utility spending of SRF funds results in direct spending on construction contractors (direct effect). The construction contractors then spend this money on goods and services that they need to operate their businesses (indirect effect). Direct and indirect spending generate employment, creating additional income for households that generates even more spending (the induced effect). The total economic impact is the sum of direct, indirect, and induced effects. This generates federal, state, and local tax revenues.

To model federal SRF spending in IMPLAN, the analysis assumed that the proposed SRF allocations for 2017 through 2021 would be spent over a 10-year period, from 2017 to 2026. The analysis estimated the percentage of spending that will occur each year based on the relationship of allocation and spending developed by the Congressional Budget Office for the 2009 Water Infrastructure Financing Act. The federal funding levels modeled were derived from amounts being considered by the U.S. Senate Environment and Public Works Committee in April 2016 as the Committee was developing a bi-partisan provision for the Water Resources Development Act of 2016 to reauthorize and increase the funding levels for the CW and DW SRF programs.

The analysis allocated annual SRF spending across different project types based on the level of need estimated for each needs category in the 2011 DW and CW needs survey. The analysis then mapped the spending associated with the different needs categories into IMPLAN sectors. For example, for each needs category, a percentage of spending was allocated to IMPLAN sectors such as construction, heavy equipment, engineering and design services, and local government/water utilities.

Other proposals have been introduced in Congress to increase the CW and DW SRF programs by larger amounts than those considered in this study. The results from this analysis can be scaled up (or down) to other proposed funding levels because the ratios of spending to job creation, tax revenues, and economic output are the same with larger (or smaller) proposed funding levels.²

¹ This view compares the same amount of taxes generated from SRF spending but compares it only to the federal portion of the total spending. This leveraging assumes that the state program would not exist without the federal SRF grants and therefore can be counted as a result of the federal funding.

² IMPLAN does not assume limits to the availability of capital and labor in the economy. Such limits would lessen the overall output and tax impact. However, the results are generally scalable for the levels of spending considered in this analysis.

Economic impacts of proposed federal SRF allocations

Tables 1 through 3 present the economic impacts associated with the proposed federal SRF allocations, as follows:

- Table 1 presents the employment, labor income, value added, and output generated by direct SRF spending
- Table 2 shows the federal tax revenues associated with this additional economic activity.
- Table 3 shows the federal tax revenues generated in each year that SRF spending occurs, including taxes generated by federal spending, as well as the taxes generated by leveraged state funds.

Table 1. Economic impacts of proposed federal SRF allocations, 2016 USD^a

This table shows the IMPLAN model summary output. Results are in 2016 USD (i.e., not adjusted for inflation). They can be compared to a total spending of \$30.67 billion in 2016 USD values.

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	192,881	12,500,589,181	14,549,393,251	30,665,164,969
Indirect Effect	130,427	8,382,231,696	13,427,012,681	29,513,529,280
Induced Effect	182,241	9,430,294,277	16,548,253,569	30,369,921,220
Total Effect	505,549	30,313,115,154	44,524,659,501	90,548,615,469

a. Economic impacts are relative to \$30.67 billion in spending in 2016 USD

Table 2. Federal tax revenues generated by federal SRF spending, Millions, 2016 USD

This table presents the direct tax revenues associated with SRF spending. It shows that the \$30.67 billion (2016 USD) in federal allocations would generate \$6.55 billion in federal tax revenues. Thus, every dollar of federal spending results in \$0.21 returned in federal taxes.

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Corporate Profits Tax					\$833,250,299
Personal Tax: Income Tax				\$2,351,139,140	
Social Ins Tax- Employee Contribution	\$1,446,015,898	\$216,313,818			
Social Ins Tax- Employer Contribution	\$1,423,912,866				
Tax on Production and Imports: Custom Duty			\$71,454,817		
Tax on Production and Imports: Excise Taxes			\$192,525,724		
Tax on Production and Imports: Fed Non-Taxes			\$20,306,195		
Total Federal Tax, by category	\$2,869,928,764	\$216,313,818	\$284,286,737	\$2,351,139,140	\$833,250,299
Total Federal Tax					\$ 6,554,918,758

Table 3. Federal tax revenues generated by federal SRF allocations and state-leveraged funding, adjusted to account for inflation (nominal USD)

This table presents federal tax revenues generated by both federal and state SRF spending. Results are shown in nominal dollars, meaning they are re-inflated to represent actual results in a given year. The third column shows that the \$34.7 billion (nominal) that the federal government has allocated to SRF will generate federal tax revenues from federal and state spending of approximately \$32.3 billion. Thus, for every dollar that the federal government spends, they receive \$0.93 back in federal tax revenues. This assumes that the state SRF funds would not otherwise be spent in the U.S. economy.		
Year	Federal tax revenues generated by federal spending	Federal tax revenues generated by federal spending and state leveraged funds -
2017	\$90,883,055	\$395,143,719
2018	\$340,322,764	\$1,479,664,191
2019	\$668,219,111	\$2,905,300,483
2020	\$948,018,834	\$4,121,821,017
2021	\$1,232,630,570	\$5,359,263,348
2022	\$1,470,389,711	\$6,392,998,744
2023	\$1,297,800,622	\$5,642,611,399
2024	\$803,522,855	\$3,493,577,629
2025	\$389,077,167	\$1,691,639,858
2026	\$190,874,408	\$829,888,728
Total tax impact	\$7,431,739,097	\$32,311,909,117

Economic impacts per 1 million dollars of SRF spending

Tables 4 through 6 present the economic impacts associated with \$1 million of SRF spending, as follows:

- Table 4 presents the employment, labor income, value added, and output generated per \$1 million in direct SRF spending
- Table 5 shows the federal tax revenues associated with this additional economic activity.
- Table 6 shows the federal tax revenues generated in each year that SRF spending occurs, including taxes generated by federal spending, as well as the taxes generated by leveraged state funds.

Table 4. Economic impacts per \$1 million of SRF spending, 2016 USD*

This table shows model results per \$1 million of SRF spending. There are not inflation effects in these results because we have normalized the results to reflect impact per \$1 million

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	6.3	\$ 407,648	\$ 474,460	\$ 1,000,000
Indirect Effect	4.3	\$ 273,347	\$ 437,859	\$ 962,445
Induced Effect	5.9	\$ 307,525	\$ 539,643	\$ 990,372
Total Effect	16.5	\$ 988,520	\$ 1,451,962	\$2,952,817

Table 5. Federal tax revenues generated by \$1 million of SRF spending, 2016 USD

This table presents the direct tax revenues associated with \$1 million in SRF spending. It shows that every million dollars in federal or state SRF spending generates \$213,758 in direct federal tax revenues.

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Corporate Profits Tax					\$27,173
Personal Tax: Income Tax				\$ 76,671	
Social Ins Tax- Employee Contribution	\$ 47,155	\$ 7,054			
Social Ins Tax- Employer Contribution	\$46,434				
Tax on Production and Imports: Custom Duty			\$ 2,330		
Tax on Production and Imports: Excise Taxes			\$ 6,278		
Tax on Production and Imports: Fed Non-Taxes			\$ 662		
Total Federal Tax, by category	\$ 93,589	\$ 7,054	\$ 9,271	\$76,671	\$27,173
Total Federal Tax					\$ 213,758

Table 6. Federal tax revenues generated by \$1 million in federal SRF spending and corresponding state-leveraged funds

Federal SRF allocations account for 23% of total SRF spending, while state matching funds and funds from state program loan repayments account for 77%. Thus, the proposed \$34.7 billion federal allocation will leverage an additional \$116.2 billion in state spending (\$151 billion total). Together, the proposed federal allocations and state SRF program funds will result in \$32.3 billion in Federal tax revenue. Thus, as shown below, when leveraged state program funds are taken into account, every million dollars of federal SRF spending returns \$929,382 in tax revenue to the federal government.

Description	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Corporate Profits Tax					\$118,141
Personal Tax: Income Tax				\$333,354	
Social Ins Tax- Employee Contribution	\$205,022	\$30,670			
Social Ins Tax- Employer Contribution	\$201,888				
Tax on Production and Imports: Custom Duty			\$ 10,131		
Tax on Production and Imports: Excise Taxes			\$ 27,297		
Tax on Production and Imports: Fed Non-Taxes			\$ 2,879		
Total Federal Tax, by category	\$ 406,910	\$ 30,670	\$ 40,307	\$ 333,354	\$ 118,141
Total Federal Tax					\$ 929,382

For more information, please contact Steve Dye at sdye@wef.org, or at (202) 246-1070, Ian Wolf at iwolf@watereuse.org, or at (571) 445-5504, or Claudio Ternieden at cternieden@wef.org, or at (703) 684-2416.

Prepared in participation with:



**BOLD THINKERS DRIVING
REAL-WORLD IMPACT**

The Water Environment Federation (WEF) is a not-for-profit technical and educational organization of 33,000 individual members and 75 affiliated Member Associations representing water quality professional around the world. Since 1928 WEF and its members have protected public health and the environment. As a global water sector leader, WEF's mission is to connect water professionals; enrich the expertise of water professionals; increase the awareness of the impact and value of water; and provide a platform for water sector innovation.

The WateReuse Association is a not-for-profit organization that educates the public on the importance of water reuse and advocates for policy, laws and funding to increase alternative water supply development in communities across the United States. Our membership of water utilities, businesses, government agencies and not-for-profit organizations is dedicated to recycling water to ensure communities have a safe, reliable and cost-effective supply of water, which is necessary to sustain a high standard of living and robust economy.

Senator INHOFE. Thank you, Mr. Chow.
Robert Moore, from Madill, Oklahoma, is representing the National Rural Water Association.
Robert.

STATEMENT OF ROBERT MOORE, GENERAL MANAGER, MARSHALL COUNTY WATER CORPORATION, MADILL, OKLAHOMA, ON BEHALF OF THE NATIONAL RURAL WATER ASSOCIATION

Mr. MOORE. Good morning, Senator Inhofe and members of the committee. I am Robert Moore from rural Oklahoma. I am a General Manger of the Marshall County Water Corporation. I am representing all small and rural community water and wastewater suppliers today through my association with both Oklahoma and the National Rural Water Associations.

Our member communities have the very important public responsibility of complying with all Federal regulations and for supplying the public with safe drinking water and sanitation every second of every day. Most all water supplies in the U.S. are small. Ninety-four percent of the country's 51,000 drinking water supplies serve fewer than 10,000 people.

I want to acknowledge that rural America is very appreciative of you, Senator Inhofe, for standing up for rural communities on environmental issues. Your actions have improved the lives of all rural families, and the environment and the public health in rural USA.

Small and rural communities often have more difficulty providing safe, affordable water due to our limited economies of scale. While we have fewer resources, we are regulated to the exact same manner as large communities. In 2016, there are rural communities in the country—and even in my county—that still do not have access to safe drinking water or sanitation due to the lack of density or the lack of funding.

I am what you would call a working general manager. Much of my day is spent in the field repairing water lines, operating backhoe dump truck, helping conduct routine maintenance on our distribution system. If someone in the community loses water in the middle of the night, the emergency call gets forwarded to my cell phone at home.

But Marshall County Water has a similar story to tell, such as many other rural and small water suppliers. We were started to provide the first water service to rural communities that had limited access to water or marginal water wells. In 1972, we began operations to supply water to about 800 farms and ranches. The Federal Government provided that funding to begin and later expand our water service through low interest loans from USDA. We now serve approximately 15,000 customers through a little over 6,000 taps.

In crafting water infrastructure funding policy, we urge Congress to consider the following. First, local communities have an obligation to pay for their water infrastructure, and Federal Government should only subsidize water infrastructure when the local community can't afford it and there is a compelling Federal interest, such as public health, compliance, or economic development.

We have recently been denied a \$3 million USDA low interest loan for a 15-mile raw water line. USDA determined that we could afford a commercial loan from a bank and did not need the Federal taxpayer to subsidize our water infrastructure.

The USDA and EPA SRF funding programs achieve this principal objective by requiring that Federal subsidies be targeted to communities most in need. One of our concerns with the new WIFIA program is that it lacks any needs-based targeting, credit elsewhere means-testing, or focus on compliance issues. This year's EPA budget request decreased funding for SRFs and substantially increased funding request for the WIFIA program. This gives the appearance that limited Federal water subsidies are being moved from programs targeted to the neediest communities to the communities with less need.

Second, all EPA water funding programs should primarily be dedicated to the compliance issues with EPA Federal mandates and standards.

Third, profit-generating water companies should not be eligible for Federal taxpayer subsidies.

In closing, please know that the SFRs have no limitation on size or scope of a water project and can currently leverage Federal dollars to create a much larger loan portfolio. Oklahoma currently operates a water fund which leverages dollars at a 1 to 10 ratio. According to EPA, most SRF funding is allotted to large communities. A simple review of projects funded by the SFRs included in my testimony show numerous projects funded that cost over \$50 million, and some over \$1 billion.

Thank you all for your assistance and for this opportunity. I would be happy to answer questions.

[The prepared statement of Mr. Moore follows:]



Marshall County Water Corporation
Committed to Providing Clean, Safe Water for All Our Residents



TESTIMONY OF
ROBERT MOORE
 GENERAL MANAGER
MARSHALL COUNTY WATER CORPORATION (OKLAHOMA)
 ON BEHALF OF THE
OKLAHOMA RURAL WATER ASSOCIATION
 AND THE
NATIONAL RURAL WATER ASSOCIATION
 BEFORE THE U.S. SENATE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 APRIL 7, 2016

"The Federal Role in Keeping Water and Wastewater Infrastructure Affordable"

Good morning Senator Inhofe and Members of the Committee. I am Robert Moore from rural Oklahoma. I am the general manager of the Marshall County Water Corporation. We are a non-profit drinking water supply organization providing drinking water to all of Marshall County and portions of Johnson, Carter, and Love counties. We have two surface water treatment facilities that service a population of approximately 15,000 people.

I am representing all small and rural community water and wastewater supplies today through my association with both the Oklahoma and National Rural Water Associations. Our member communities have the very important public responsibility of complying with all applicable regulations and for supplying the public with safe drinking water and sanitation every second of every day. Most all water supplies in the U.S. are small: 94% of the country's 51,651 drinking water supplies serve communities with fewer than 10,000 persons, and 80% of the country's 16,255 wastewater supplies serve fewer than 10,000 persons.

I want to acknowledge that rural America is very appreciative to you, Senator Inhofe, for standing up for rural communities on environmental issues. Your actions have improved the lives of all rural families and also led to improvements in the environment and public health in rural USA. Specifically, your leadership on critical water funding has ensured that federal regulations don't have an adverse impact on people, that technical assistance is provided to allow compliance with EPA rules, and that on-site education is available to show how to protect the safety of the public's water throughout rural and small towns in every state.

The small community paradox in federal water policy is that while we supply water to a minority of the country's population, small and rural communities often have more difficulty providing safe, affordable drinking water and sanitation due to limited economies of scale and lack of technical expertise. Also, that while we have fewer resources; we are regulated in the exact same manner as a large community, we outnumber large communities by a magnitude of 10-fold, and federal compliance and water service is often a much higher cost per household. In 2016, there are rural communities in the country that still do not have access to safe drinking water or sanitation due to the lack of density or lack of funding. Included with my written testimony are recent news profiles of communities that lack basic drinking water access (Appendix A). Our association's mission has been to expand water service to these communities and to assist existing water utilities with compliance and maintain safe and clean water service.

In addition to the management, finances and governance of the utility, I am what could be called a "working" general manager. Much of my day is spent in the field boring and trenching water lines, operating the loader and dump truck or conducting all the routine maintenance on the distribution system. If someone in my community loses water service from some emergency situation in the middle of the night, the emergency call gets forwarded to my house. When that occurs, and it does, I have to wake up my operators and we go out and fix the problem. That means we have to operate the backhoes, dig up the broken lines, get in the trench and repair the break and back-fill and fix the excavation.

Marshall County Water has a similar story to many other rural and small town water supplies. We were started to provide the first water service to rural communities that had limited access to water or marginal well water. In 1972, we were started to supply water to about 800 farms and ranches. My grandfather's ranch was one of those first 800 ranches that got water in 1972. Like many of first 800 users, my grandfather was Choctaw and was granted a small amount of land to farm as part of the 1907 Oklahoma Enabling Act. Before 1972 and the availability of public water service, he and everyone else in rural Marshall County relied on limited well water that contained high concentrations of sulfur for their livelihood. The federal government provided the funding to begin and later expand our water service through low interest loans from the U.S. Department of Agriculture (USDA). This assistance has resulted in a great improvement in public health, quality of life, and economic development in the area. The citizens of Marshall County are grateful for this assistance. But we are currently indebted to USDA for approximately 12 million dollars. Marshall County Water currently needs additional water infrastructure funding. We need three million dollars for a new 15 mile raw water pipeline that will allow us to meet our demand. Marshall County Water is governed by a seven member board of volunteer directors that consist of four farmers/ranchers, a banker, a state government employee, and a preacher.

Like my community, many small and large communities in the country are in need of water infrastructure funding. However, before making recommendations on federal infrastructure funding policies, it should be clear that lack of funding is no excuse for poor governance or management of a public water supply. Much of the national focus on water is currently viewed through the crisis in Flint, Michigan. In that case, there was no call for funding to prevent the specific lead contamination that occurred before it happened. Whoever was in charge of making those decisions in Flint believed the water was going to be safe. That turned out to be wrong, but it was those management and governance decisions that led to the current situation, not any identified lack of funding. No matter how dire our funding situation, we would never knowingly allow for unsafe drinking water to be provided to the public. In the aftermath of the Flint crisis, the public should know that they are the guarantor of the safety of their public

drinking water through their local governments. The public owns and operates their public drinking water supply and is responsible for its safety. Every day, someone who works for your local community is making second-to-second decisions about adding essential purifying chemicals, killing pathogens, watching for changes in complex water delivery systems, and keeping your family's drinking water safe because that is what they want to do. Local government only exists to protect the public and it is the most accountable and representative body to (and of) the public. Flint should serve as a wake-up call for the public to support and participate in their local government and accept responsibility for its operation.

We can't advise Congress on what is the appropriate amount of federal financial aid for water infrastructure in the context of the current federal budget constraints. However, there is currently more demand for federal water infrastructure funding than supply. Much of the demand is created by the financial burden of federal unfunded mandates. In crafting federal water infrastructure funding policy, small and rural communities urge Congress to consider the following four policy principles - and two observations - based on their merit.

First, local communities have an obligation to pay for their water infrastructure and the federal government should only subsidize water infrastructure when the local community can't afford it and there is a compelling federal interest such as public health, compliance or economic development. I mentioned earlier that my community is in need of a three million dollar funding package to build a transmission line. We have been denied a federally subsidized loan because the federal agency determined that we could afford to obtain a commercial loan from a bank and did not need the federal taxpayer to subsidize our water infrastructure. We are currently in the process of obtaining a commercial loan from our local banker to complete the project. This loan will have a 4.9 percent interest rate. We would have preferred a federally subsidized loan with a lower interest rate, but we understand that if we can afford the project on our own, the rest of the county should not subsidize our water system.

Some federal programs like the U.S. Department of Agriculture water infrastructure program contain this needs-based criterion. USDA calls this the "credit elsewhere" criterion. The state revolving loans achieve this principled objective by requiring that federal subsidies be targeted to the communities most in need based on their economic challenges combined with the public health necessity of the project. One of our concerns with the new Water Infrastructure Finance and Innovation Act (WIFIA) is that it lacks any needs-based targeting, credit elsewhere means-testing, or focus on improving public health or compliance. In fact, WIFIA subsidies are limited to communities that have good credit (33 USC § 3907), thus precluding WIFIA subsidies from addressing the country's most needy water problems including Flint, border colonias, and other low-income communities with contaminated drinking water (Appendix A). This year's EPA budget request has a precipitously decreased funding request for the state revolving funds (SRFs) and a substantially increased funding request for the WIFIA program. Could the funding for WIFIA have been dedicated to the SRFs? This analysis answers the question of competition between the two water funding programs. Also, this gives the appearance that limited federal water subsidies are moving from programs targeted to the neediest communities to communities with less need.

Example: *The WIFIA program can only subsidize water projects (including corporately owned water companies) that can "demonstrate an investment-grade rating," (33 USC § 3907). Flint has "no current ratings for the City. Prior ratings were withdrawn as the City's financial position led to consideration of the City being placed into receivership," according to the City's Annual Financial Report 6/30/2015.*

Second, all U.S. Environmental Protection Agency (EPA) water funding programs should be primarily dedicated to compliance with EPA's federal mandates or standards. Currently, the Safe Drinking Water Act and Clean Water Act are creating a tremendous financial burden on small and rural communities. The funds provided by Congress, however, are not consistently applied to communities that are experiencing the greatest burden as a result of federal compliance. Much of the current and acute unfunded mandate burden is a result of the EPA's implementation of their Total Maximum Daily Load (TMDL) program that is causing reductions in wastewater nutrient permit limitations and corollary expensive wastewater treatment plant upgrades. These communities should be a priority in targeting all EPA wastewater funding subsidies, and in many cases they are not.

Example: The Lake Onondaga TMDL is estimated to cost the Village of Marcellus, New York over \$5,500,000 for compliance. The Village of Marcellus has 1,300 users and is currently deeply indebted for previous compliance. It is desperately seeking financial assistance from the EPA clean water SRF and has not been able to secure any financial assistance. However, much of the EPA funding has been used for non-compliance related projects - and much of the funding has been for grants. According to the New York state government, from fiscal year 2012 through 2014, the state "used 100% of our authority for additional subsidization to fund grants through our Green Innovation Grant Program." It appears none of these grants were for compliance with federal clean water regulations (Appendix B). It is not clear if any economic needs assessment was used in awarding these grants. EPA clean water SRF funding allowed for a set-aside of not less than 20 percent but not more than 30 percent of the funds to be used for grants. Recent EPA clean water funding grants to New York include \$147,369,000 for fiscal year 2013 and \$154,748,000 for fiscal year 2014.

Third, a small percentage of water funding programs should be set-aside for technical assistance and training. Small communities often lack the technical and administrative resources to achieve compliance and complete the necessary applications to access the federal funding programs. Providing these small communities with shared technical resources allows small communities access to technical resources that large common communities have and are needed to operate and maintain water infrastructure, comply with standards in the most economical way, and obtain assistance in applying for state revolving loan funds. Often this assistance saves thousands of dollars for the community and keeps the systems in long-term compliance with EPA rules.

Fourth, regarding privatization of water infrastructure and public-private partnerships, NRWA has not opposed water supply privatization in principle. However, corporate water (profit generating companies or companies paying profits to shareholders/investors) should not be eligible for federal taxpayer subsidies. Private companies argue that they have to comply with the same regulations. However, the distinction in mission between public and private is the core principle that should be considered. Public water utilities were and are created to provide for public welfare (the reason why public water continues to expand to underserved and non-profitable populations). Any federal subsidy that is provided to a corporate water utility can't be separated from subsidizing that company's profits.

There is a current misconception among some stakeholders that the SRFs have a limitation on size or scope of a water project and don't leverage federal dollars. States **can** currently leverage a smaller amount of water funding to create a much larger available loan portfolio. In 2012, Oklahoma passed a statewide referendum to create our Water Infrastructure Credit Enhancement Reserve Fund. This fund allows Oklahoma to issue bonds to fund water

and sewer infrastructure by leveraging \$300 million of general obligation bonds to leverage \$3 billion in new financing for water projects. This leveraging is occurring with no federal subsidy. Similarly, states can use their federal SRF grants to leverage larger loan portfolios. According to the U.S. EPA, State SRF programs can increase funds through different types of leveraging such as:

- Using fund assets as collateral to issue tax-exempt revenue bonds;
- Using funds from one SRF program to secure the other SRF program against default through cross-collateralization;
- Using funds from one SRF program to help cure a default in the other SRF program through a short-term cross-investment; and
- Increasing disbursements to incrementally fund multiple projects within a capital improvement plan.

A 2015, Government Accountability Office (GAO) report on the state revolving funds found: *“EPA tracks the amount of additional loans that are made because of leveraged bonds. States’ Clean Water SRF programs have issued approximately \$31.8 billion in loans with leveraged bonds, and states’ Drinking Water SRF programs have made approximately \$5.3 billion in additional loans with leveraged bonds...”* [Source: State Revolving Funds, August 2015 GAO-15-567]

Regarding the misconception some stakeholders are advancing that the SRFs have a limitation on size or scope of a water project, there is no size or scope limitation for water projects under the state revolving funds. According EPA, most SRF funding is allocated to large communities.

- Approximately **72 percent of clean water SRF funding** is awarded to large communities (EPA Clean Water State Revolving Fund Annual Review).
- Approximately **62 percent of drinking water SRF funding** is awarded to large communities (<http://www.epa.gov/ogwdw/dwsrf/nims1/dwcszeus.pdf>).

A simple review of projects funded the SRFs show numerous projects funded that cost over 50 million dollars (Appendix C). It appears that the SRFs are used in every large water project in the country. This assertion should be verified by the EPA. The state of New York lists multiple projects funded by the drinking water SRF that cost over one billion dollars (Appendix C).

Consolidation and Regionalization

Rural Water supports consolidation and regionalization; it has been our core mission in expanding water service to deliver water to more rural families and enhance economic development. We have consolidated/regionalized many smaller communities and extended new water service to many rural families, communities, underserved areas, farms and businesses. This has been a great benefit to these rural households and small communities. However, the key ingredient in any successful consolidation is local support for the consolidation – and local control of when and how they choose consolidation. Rural Water has led or assisted in more communities consolidating their water supplies than any program, policy or organization. Again, when communities believe consolidation will benefit them, they eagerly agree. However, if communities are coerced to consolidate, one can almost guarantee future controversy.

In Marshall County, we have regionalized in a voluntary partnership with three small water systems that had been operating independently. By combining our four water utilities, we have achieved a greater economy of scale and have eliminated some redundancies like each of us having a separate office, board of directors, compliance regimes, financials, etc. People will regionalize if they can see the benefit. Our regionalization efforts have occurred over the last four years with one homeowners association of approximately 200 users and two privately operated small utilities of approximately 400 users each becoming part of Marshall County Water. As part of the transfer of these smaller systems, Marshall County invested 700,000 dollars in new water lines and a new water tower. While there was an initial cost to regionalize, the long-term benefit of an increased economy of scale will result in a cost savings to everyone in the entire water supply.

Local communities need to be planning long-term in making these decisions. By regionalizing our four small water utilities, we are all now in a better situation for the next 20 years. We will be better able to comply with additional regulations, meet the needs of future growth, and have the greatest abundance of shared expertise in our operators and management.

Federal Regulatory Standards

The federal drinking water program can't clearly tell the public the one thing it wants to know -- how much of a substance in drinking water is unsafe? This problem is currently dramatized in Flint with lead, in New England with perfluorooctanoic acid (PFOA), and my community with trihalomethanes (TTHMs). Instead, the federal agencies say the obvious, that no amount of lead in your water is good and they impose a highly convoluted standard of 15 parts per billion on a certain percentage of the homes tested by the city. Is 15 parts per billion safe? Is 15.5 parts per billion unsafe? Should your family feel safe with water at 14.9 parts per billion? The Virginia Tech water group says 5 parts per billion is the level of concern. The World Health Organization says over 10 parts per billion is unsafe. What level of lead in drinking water relates to a commensurate level of lead in the body, and what level of lead in the body results in adverse health effects? This is what the public wants to know. In 2001, when arsenic was the focus of nation's attention, the EPA was asked what level of arsenic in drinking water is a risk to health. They couldn't answer the question, claiming it was a "complex issue."

Last year, Marshall County Water violated the EPA Total Trihalomethanes (TTHMs) regulation. We were required to write a letter to every home telling them we have a federal "health based violation" for a contaminant that may cause "cancer and central nervous problems." The federal standard for this chemical that results from our adding disinfectant to the water to make it safe to drink is 80 parts per billion. Our water had a temporary level of 84 parts per billion. Many interpret this "violation" to mean the water is unsafe, but is four parts per billion the difference between safe water and unsafe water? This is what the public wants to know. Some states have been compelled to issue additional public notices to warn consumers of the EPA mandated warning (Appendix D).

Currently, there are numerous communities in violation of various federal standards for naturally occurring elements in groundwater where the violation is of no public health consequence relative to the standard. Nobody thinks it would be good public health policy to force these families to face extreme financial burden for less than a one part per billion difference of, for example, naturally occurring fluoride in their water.

Drinking Water and Wastewater Regulatory Reform

On October 2, 2015, NRW forwarded to the EPA a number of federal regulations that could be modified or reformed to improve and enhance federal water regulations for small and rural communities. We are including this memorandum to the EPA and urge your consideration of any of these reforms (Appendix E). An additional issue is attached as an addendum. We hope you can implement modifications to current EPA regulatory policy to improve the national water program, enhance public health and better protect the environment. We look forward to working with you on these suggestions.

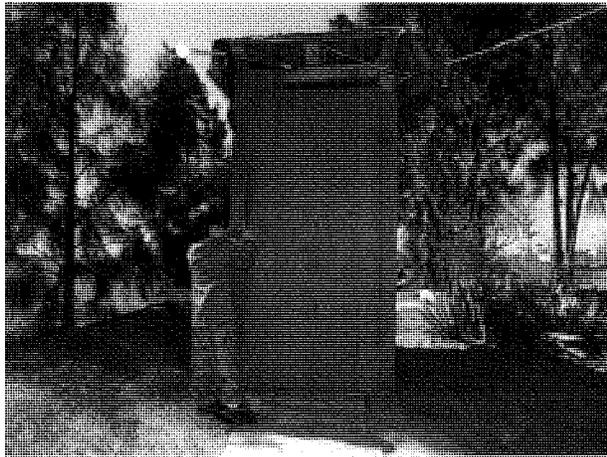
In closing, I respectfully urge you to consider the unique needs and concerns facing our rural and small town water and wastewater systems and incorporate these as priorities in future federal water funding programs and policies – and ensure that the neediest communities are prioritized in federal funding initiatives.

Thank you all for your assistance and for this opportunity.



The American Neighborhoods Without Water, Sewers, or Building Codes

Low-income residents bought cheap land outside of border cities decades ago. But the promised infrastructure never came.



A boy in Los Fresnos colonia in Texas (Jessica Rindaldi / Reuters)

ALANA SEMUELS

MAR 3, 2016

MONTANA VISTA, Tex.—No one objected when developers bought up dusty vacant land here in the 1950s and 1960s and turned it into unincorporated subdivisions—areas outside city limits where no one had authority to enforce building standards.

Neither the state nor the county stepped in when the developers turned around and sold that land—making empty promises to later add running water and sewer systems—to low-income immigrants who wanted, more than anything, to own a home of their own. And no one batted an eyelash when low-income landowners in these unincorporated border subdivisions, called colonias, started building homes from scratch without building plans or codes, or when they started adding additions to those homes as their families grew, molding structures together with nails and extension cords and duct tape.

That's because, in Texas, all of these actions were perfectly legal. Texas prides itself on its low taxes and lack of regulation, but it's possible that decades of turning a blind eye to

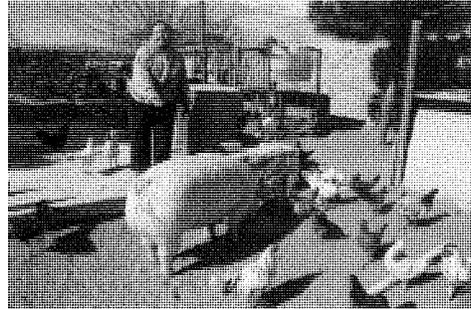
Attachment A

unregulated building is starting to catch up with the state. Today, around 500,000 people live in 2,294 colonias, and many still lack access to basic services, such as running water or sewer systems. Lots of residents live in dilapidated homes with shoddy plumbing and electrical wiring that they've cobbled together themselves to save money on contractors. And now, they want the state to pay to extend basic services in their homes. Water, for instance, should be a human right in America, they say.

"You have families that live in third world conditions in the state of Texas with a modern city just miles away," said Veronica Escobar, the County Judge of El Paso, who functions as a county chief executive. "But the state of Texas has essentially put counties in charge of health, safety and welfare, at the same time they give us very limited authority."

Alejandra Fierra lives with her husband in the Hueco Tanks colonia, where they bought land in 1987. They still don't have access to running water or a sewer system. When her children were growing up, she would pour water from a well into a tub and wash them, one, two, three, in the same water. She does the same for her dishes. She gets a delivery of a 2,500 gallon water tank for bathing and washing, and buys bottled water from Walmart for drinking and cooking.

In Montana Vista, a colonia some 22 miles east of El Paso, the septic tanks of the 2,400 families who live there frequently overflow, creating rivers of sewage in their backyards. In the summer, the smell can be horrific. Tina Silva, a resident and activist, lives here in a spacious one-story adobe house surrounded by a stone wall. She raises chickens and a giant pig in her backyard, where a rusted out car sits, half painted, in the sun. She loves her home and her neighborhood, but she doesn't understand why it has taken so long to put in a sewer system. "We're human beings. We pay taxes. Somebody needs to listen to us," she says. Various politicians have promised her they'd help get the money to install services, but it's



Tina Silva feeds the chickens in her backyard at Montana Vista (Alana Semuels / The Atlantic)

Part of the problem is that no one wants to take responsibility for paying to install these services. The developers who sold the land promising water and sewers are long gone. And for many the thinking—at least according to Escobar—is that if the homeowners wanted to buy land without access to running water, that's their problem.

Attachment A

It may seem obvious that the homeowners who bought cheap land without access to water and sewers should be responsible for installing access to services. But that isn't realistic either. More than 40 percent of colonia residents live below the poverty line, according to a [2015 report](#) from the Federal Reserve Bank of Dallas. The median household income in colonias is less than \$30,000 per year. And the conditions in the colonias are troubling. There are water and mosquito-borne illnesses, high rates of asthma, lice, and rashes. One doctor [Tribune](#) that rates of tuberculosis in the colonias are two times the state average and that there is a lingering presence of leprosy.

In 2012, the Texas Department of State Health Services issued a nuisance determination in Montana Vista documenting the health problems the septic tanks were causing, which meant the El Paso Water Utility could receive a grant for more than half of the project costs. In December, the Texas Water Development Board agreed to provide a \$2.8 million grant to El Paso Water Utilities so that the utility could start designing the sewer system. But it will cost an estimated \$33 million to build the system, and that money has not yet been secured. "It's getting there, unfortunately, it's taking a lot of time," said Munzer Alsarraj, the infrastructure program manager for El Paso County.

The state is stepping in to upgrade some of the colonias, too. Between 2006 and 2014, 286 more colonias, were linked to drinking water, drainage, wastewater disposal, paved roads, and legal plats, according to the Federal Reserve report. In 2006, 443 colonias had access to no basic infrastructure, by 2014, that number had dropped to 337. But it's slow going.

It's not easy to install infrastructure in areas that are far from the main water and sewer lines and in places that have grown with no central plan. It was not until 1989 that the Texas legislature even asked state agencies to [come up with rules](#) that would ensure new residential developments had access to water and sewer services. Now, cities can regulate development in Texas, but in unincorporated areas, counties have little regulatory power. Zoning regulations that would limit the size of buildings or of lots in cities don't exist for the colonias. In some instances, the county can't install infrastructure to homes because they're not up to code. Because people building on unincorporated land don't have to follow many rules, there are odd constructions in the colonias, including units that combine two RVs, homes with rooms tacked onto the side standing on cinder blocks, homes with extension cords that run outside, wooden planks as sidewalks. This makeshift construction can lead to roof collapses and electrical fires, said Irene Valenzuela, the interim director of community services for El Paso County.



A home in a Texas colonia consists of a trailer and a house (Eric Gay / AP)

Attachment A

The county is giving grants out to people interested in bringing their homes up to code, but people are often hesitant, she said. "I think the majority of them are afraid," she said. "They say, 'This is a takeover. What are you going to ask for next? If you assist me, are you going to take my property away when I pass away?'" Alsarraj, with the county, added.

Then there's the cost. The county is trying to install sewer lines in the Square Dance colonia. That colonia is located just a few blocks from established subdivisions that are part of the county's water and sewer system. But the price of adding those services to the colonia's 264 homes is \$8.5 million. Installing water and sewers in another colonia, called Hillcrest, would cost about \$120,000 per home, Alsarraj said. But the homes are worth just \$20,000 to \$30,000 each.

It's ironic, too, that the county is trying to extend water and sewers to far-off subdivisions as it also tries to execute a vision that cuts down on sprawl. "For 30, 40 years, we've continued to sprawl out to the edges of the earth and it was costing us more than we were making as a community," Beto O'Rourke, a U.S. Congressman who led the charge to cut down on new subdivisions, told me.

But El Paso has had little success regulating far flung subdivisions, even when they are incorporated.

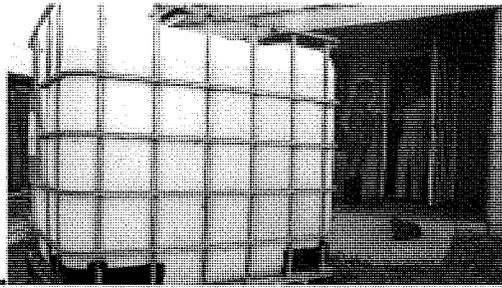
Perhaps most worrying to Escobar and others is that new colonias are still being built across the state. This time around, they have basic water and sewer hookups, but don't have paved roads or streetlights, according to the Federal Reserve. Plots cost as little as \$25,000, and developers offer 20-year financing at a 12 percent interest rate and just \$500 down, according to *Bloomberg News*.

It's proof to Escobar that developers will always be willing to sell substandard plots of land to people desperate to own a home. But she had hoped Texas would step in and regulate. Two sessions ago, the county tried to get permission for zoning authority over 60 square miles near a border crossing south of El Paso. But the state legislature refused to grant it, in part because real-estate agents objected to the bill, said Escobar, the judge. Legislators also didn't believe that government should trump property rights, she said. But perhaps that's because they don't have to deal directly with the after-effects.

"We are having to fix the problems caused by unregulated government," Escobar said. "There are innumerable examples and costs associated with fixing problems that could have been prevented. There's just a fundamental belief in Texas—if you own property, you can do what you want with it."

Like Flint, water in California's Central Valley unsafe, causing health problems

By [Rebekah Sager](#) *Fox News Latino*
Published March 08, 2016



(Photo by Justin Sullivan/Getty Images) (2015 CHITTY BLACK)

While the water crisis in [Flint, Michigan](#), made headlines around the country when the city's leaders exposed residents to a tainted water supply for almost two years, families living in the Central Valley of California have been struggling without clean drinking water for decades.

The population of the Central Valley, a basin surrounded by mountains that once offered hope to migrants like the fictional Joads in the "The Grapes of Wrath," today is about 80 percent Latino, and 92 percent of the migrant farm workers in the Valley are Latino.

There are vast dairy farms reeking of manure, highways lined with fast-food restaurants, liquor stores, prisons and numerous dialysis centers.

Much of fruits and vegetables consumed in the U.S. are grown here, and the soil has been decimated by agricultural activity – overuse of fertilizers and pesticides, manure from livestock. One result is a toxic soup of nitrates in the area's drinking water.

Residents in towns along the San Joaquin Valley rely predominantly on pumps and ground water – which is not effectively regulated for contamination.

When pumped up into people's homes, the nitrates are so dangerous that people are known to get rashes when they shower. The presence of nitrates in the water supply also has been linked to "blue baby syndrome," which is caused by the decreased ability of blood to carry oxygen – one of the most common causes is nitrate in drinking water.

People turn to buying five gallon jugs to shower with and using 300-gallon tanks of non-potable water for basic needs.

"Generations of people who live here know not to drink the water," Susana De Anda, a clean-water advocate and the co-executive director and co-founder of the Community Water Center NGO, told

"People pay more for this 'toxic water' – sometimes as much as \$100 a month for water just to shower with. On top of that they're paying for drinking water," De Anda said.

According to the Environmental Justice Coalition for Clean Water, rural Central Valley communities pay the highest drinking water rates in the state, with some families shelling out as much as 2 to 6 percent of their income for water that they can't drink.

Attachment A

According to a [Pacific Institute report](#), nitrate exposure's health impacts in the Central Valley fall disproportionately on poor Latino communities.

Due to the state's severe drought, new wells have to be dug more deeply, demand is high and the cost is between \$1 million and \$2 million dollars.

"The drought actually causes the pollutants in the soil to be more concentrated and levels of contaminants such as nitrates to rise. Also, when deeper wells are dug, and that would be by maybe wealthier farmers, they actually end up syphoning water away from poor communities," Genoveva Islas – program director at Cultiva la Salud ("Cultivate Health"), a non-profit health advocacy organization in the Central Valley – told Fox News Latino. "And it creates a real inequity." Most people in the area live a large distance from the closest big grocery store. Liquor and convenience stores become the default place to buy food and produce, and, all too often, sugary drinks are less expensive than drinking water.

"We're in a food desert. People would buy water in bulk, but big stores are often very far outside of communities, and so families make a tough trade-off. Soda might be more affordable," De Anda said. In addition to other factors, the consumption of soda vs. water is one of the leading reasons for the severe health problems in the Valley. The region has big problems with obesity and the highest rate of Type 2 diabetes in the state.

An analysis of state's death records by the [Fresno Bee](#) and the Center for California Health Care Journalism at the University of Southern California paints a vivid picture of the disproportionate toll diabetes has taken in the Valley.

At least 19 people die from diabetes-related complications in the eight San Joaquin Valley counties every day, the highest rate in the state.

"I've lived here all my life, and not until I was an adult was really aware of dialysis clinics. Now, I have an aunt and a close family friend who are both on dialysis. I'm seeing a number of these [places] pop up. More than ever before," Islas says.

The Central Valley may be the fruit and veggie center of the country, but for poor people healthy food is still significantly more costly than food sold in bulk, such as beans, rice, tortillas, white bread, ground beef and large bottles of soda. Many of the stores in the Valley offer free soda with groceries, and a small bottle of water runs about \$1.69 versus a large soda at .99 cents.

In the last three years, the state has paid to retrofit water filters on drinking fountains in some pockets of schools and daycare centers, and provided filtered bottle stations, where people can fill-up containers. But Islas says it's not universal.

"There's still a lot of marketing of sugary drinks to kids, which in addition to diabetes and obesity, dental health problems. In Flint, the Governor has set aside money for the kids impacted by the lead, but in the Central Valley, we have the same issues of long term health problems for impoverished kids. We use education as a pathway out, but if you're thirsty or you have health concerns, it's pretty hard to learn," Islas says.

The drought in California may be shining a light on the region and its water supply, but the issues in the Valley have been left largely unaddressed.

"All these are interim solutions, but we also need to create water awareness. The water may look clean, but that doesn't make it safe. It shouldn't matter who you are or where you live, clean drinking water is a basic human right," De Anda says.

**New York State Environmental Facilities Corporation
Green Innovation Grant Program (GIGP) Grantees for Federal Fiscal Year 2013**

Albany University Center Expansion Green Infrastructure, install pervious pavement, rain gardens, and a green roof as part of their Campus Center Expansion Project. \$607,847

Broome County Green Stormwater Infrastructure, install pervious pavement, rain gardens, bioretention, and convert an existing stormwater detention pond into a functional stormwater wetland. \$1,008,090

Dutchess Bard College, implement green infrastructure practices that slow the speed of stormwater, clean it, and infiltrate it. \$732,728

Erie Village of Williamsville Spring Street Green Reconstruction, install bioretention, rain gardens, and a green wall as part of the reconstruction of Spring Street. \$799,160

Essex Town of Ticonderoga Stream Daylighting, constructed wetland adjacent to Bicentennial Park. \$539,103

Kings Blumenfeld Development Group Brooklyn Navy Yard, install a green roof above "Building C" in the Brooklyn Navy Yard. \$275,778

Kings Marine Park Seaside Links Rainwater Harvesting, install a rainwater harvesting and reuse system at the Marine Park Golf Course in Brooklyn. \$502,900

Monroe I-Square, support rainwater harvesting and reuse, pervious pavement, rain gardens and green roofs as part of a larger redevelopment project. \$393,000

Monroe Rochester Museum & Science Center, to install a rainwater harvesting system, a green roof, bioretention practices provide a highly visible and educational resource. \$724,374

Nassau Planting Fields Arboretum, redevelopment of the main parking area at Planting Fields Arboretum and State Historic Site using green infrastructure. \$800,000

Oneida City of Rome Capitol Steps, install pervious pavement, stormwater street trees, and bioretention to revitalize the West Dominick Street arts and cultural district. \$230,900

Onondaga Village of Fayetteville, install pervious pavement, rain gardens, bioretention, and stormwater street trees to improve safety for pedestrians and beautify corridors. \$557,100

Rockland Town of Clarkstown, naturalize channelized streams, reconnect their flow to the adjacent regulated wetlands, educational kiosks and a small educational trail. \$1,000,000

Suffolk Suffolk County Community College, install a rainwater harvesting system, pervious pavement, and rain gardens at various locations on campus. \$393,043

Tompkins Taughannock Falls Park Green Infrastructure, installation of pervious pavement as part of a complete renovation of the Taughannock Falls State Park overlook, one of the most visited locations in the region. \$320,000

Ulster County Campus Green Retrofit, install pervious pavement, rain gardens, bioretention areas, and green walls at the recently relocated SUNY Ulster Extension Center. \$439,000

Westchester City of Yonkers Saw Mill River, continue the process of daylighting the Saw Mill River, with dramatic views upon entering downtown from the east. \$1,076,977

SRF Projects Funded Costing Over \$50 Million

Clean Water Financing Proposed Priority System (FY2016)**New Jersey Department of Environmental Protection**http://www.nj.gov/dep/dwq/pdf/cwf_2016P_cwpl.pdf

CAMDEN CITY	\$58,648,000
CAMDEN COUNTY	\$50,664,000
MIDDLESEX COUNTY	\$363,247,000
JERSEY CITY MUA	\$47,046,000
BAYSHORE RSA	\$5,894,000
PASSAIC VALLEY SC	\$134,646,000
PASSAIC VALLEY SC	\$58,205,000
PASSAIC VALLEY SC	\$60,117,000
BERGEN COUNTY UA	\$54,172,000
PASSAIC VALLEY SC	\$63,223,000
MIDDLESEX COUNTY	\$111,313,000
PASSAIC VALLEY SC	\$132,505,000
PASSAIC VALLEY	\$63,223,000
BELLMAWR BOROUGH	\$66,350,000
EDISON TOWNSHIP	\$55,475,000
CAMDEN RED AGENCY	\$172,309,000
KEARNY TOWN	\$107,557,000
PENNSAUKEN TWNP	\$55,431,000
SAYREVILLE ERA	\$50,664,000

State Revolving Fund for Water Pollution Control Federal Fiscal Year 2016**New York State Department of Environmental Conservation**<http://www.efc.ny.gov/Default.aspx?tabid=112>

GREENWOOD LAKE, VILLAGE OF	\$62,021,000
SOUTHAMPTON, VILLAGE OF COLL	\$30,552,000
CHEEKTOWAGA, TOWN OF	\$50,000,000
NASSAU COUNTY BAY PARK SEWER	\$50,951,925
NASSAU COUNTY BAY PARK SEWER	\$524,750,000
ONEIDA COUNTY PHASE 2B	\$59,500,000
ONEIDA COUNTY PHASE 5B	\$117,000,000
ONEIDA COUNTY PHASE 6A STP UP	\$110,600,000
SUFFOLK COUNTY SW SD #3	\$88,572,000
SUFFOLK COUNTY RT 25	\$76,230,000
UTICA, CITY OF	\$105,304,000

Projects for New York City

NYCMWFA WARDS ISLAND BRONX	\$64,091,406
NYCMWFA WARDS ISLAND STP REHAB	\$102,655,400
NYCMWFA BOWERY BAY STP MOD	\$50,412,000
NYCMWFA BOWERY BAY STP UP	\$204,301,784
NYCMWFA TALLMAN ISLAND STP UP	\$280,322,476
NYCMWFA JAMAICA STP IMP JA-179	\$57,267,070

Attachment C

NYCMWFA 26TH WARD, BB, TI, WI,	\$93,802,596
NYCMWFA 26TH WARD STP IMP	\$51,101,400
NYCMWFA 26TH WARD STP IMP	\$100,595,678
NYCMWFA NEWTOWN CREEK STP UP	\$45,933,272
NYCMWFA NEWTOWN CREEK STP UP	\$112,331,279
NYCMWFA NEWTOWN CREEK STP UP	\$169,975,528
NYCMWFA NEWTOWN CREEK STP UP	\$140,983,576
NYCMWFA NEWTOWN CREEK STP UP	\$42,212,389
NYCMWFA NEWTOWN CREEK STP UP	\$361,199,252
NYCMWFA NEWTOWN CREEK STP UP	\$589,360,645
NYCMWFA PUMP STATIONS CSO [CSO	\$183,867,577
NYCMWFA CONEY ISLAND CREEK CSO	\$69,107,016
NYCMWFA CONEY ISLAND CREEK CSO	\$48,351,415
NYCMWFA NYC-WATERSHED NPS 319	\$116,225,648
Final Intended Use Plan Drinking Water State Revolving Fund	
October 1, 2015- September 30, 2016	
http://www.efc.ny.gov/Default.aspx?tabid=108	
NEW YORK CITY	
Croton Filtration Plant (Phase 11 of 16479),	\$1,200,000,000
3rd City tunnel and shafts, crit redund, dist press,	\$470,000,000
Catskill& Delaware UV Disinfection, Treatment Plant	\$1,400,000,000
STATE OF CALIFORNIA, FISCAL YEAR 2015-2016	
Clean Water State Revolving Fund Intended Use Plan	
www.waterboards.ca.gov/board_info/agendas/2015/jun/060215_8_draft_sfy1516_cwsrf_iup.pdf	
Sacramento Regional County Sanitation District Echo Water Project	\$174,380,875
Sacramento Regional County Sanitation District Echo Water Project	\$65,426,778
South Coast Water District Tunnel Stabilization & Sewer Rehabilitation	\$102,560,000
Hi-Desert Water District Wastewater Treatment and Water Reclamation	\$142,349,314
City of Malibu Civic Center Wastewater Treatment & Recycling Facility	\$41,900,000
Santa Margarita Water District Trampas Canyon Recycled Water	\$47,450,000
City of North Valley Regional Recycled Water Program	\$96,617,856
Monterey Regional Water Pollution Control Agency Groundwater	\$82,000,000
Eastern Municipal Water District Recycled Water Supply Optimization	\$114,031,280
Los Angeles, Advanced Water Purification Facility	\$451,000,000
Sacramento Regional County Sanitation District Echo Water Project	\$59,408,652
Sacramento Regional County Sanitation District Echo Water Project	\$711,032,393
City of San Luis Obispo Water Resource Recovery Facility Expansion	\$68,000,000
Ventura County Waterworks District No. 1	\$50,000,000
San Jose, City of Digester and Thickener Facilities	\$86,350,000
Water Replenishment District of Southern California Groundwater	\$80,000,000
Upper San Gabriel Valley Municipal Water District Indirect Reuse	\$65,000,000
Los Angeles, City of Hyperion Treatment Plant Membrane	\$460,000,000
Palmdale Water District Palmdale Regional Groundwater Recharge	\$130,000,000
Sacramento Regional County Sanitation District Echo Water Project	\$484,585,422



Ernie Fletcher
Governor

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET

Department for Environmental Protection
Division of Water
14 Reilly Road
Frankfort, Kentucky 40601
Phone: (502) 564-3410
Fax: (502) 564-0111
www.water.ky.gov

LaJuana S. Wilcher
Secretary

News Release

**Contact: Julie Roney
(502) 564-3410**

DRINKING WATER NOTICES NO REASON FOR CONSUMER CONCERN
They reflect careful government standards for water purity

FRANKFORT, Ky. (May 9, 2005) – If you received a notice from your water company about “disinfectant byproducts” in your drinking water, you’re not alone. Thousands of Kentuckians are receiving the notices, which were required under standards set by the U.S. Environmental Protection Agency (EPA).

Recently, many water systems in the state were required to notify customers that maximum contaminant levels (MCLs) for certain disinfectant byproducts (DBPs) had been exceeded. The notices, intended as advisories, included language about potential health effects from consuming water with elevated levels of these substances.

The notifications used specific language and a format dictated by EPA, causing confusion among some consumers.

What it’s all about

To be made safe for drinking, water is disinfected during treatment. Without disinfection, bacteria, viruses and microbes would cause disease and possibly death. Dysentery, cholera and typhoid fever once were constant threats. Public health officials say chlorine treatment of drinking water is one of the most significant public health achievements of the past century.

However, disinfectants such as chlorine, chloramine, chlorine dioxide, ozone and bromine can react with substances that occur naturally in water at its source, such as decaying leaves or other organic matter. The reaction creates DBPs such as trihalomethanes (THMs) or haloacetic acids (HAAs). The EPA determined that long-term exposure to DBPs was potentially cancer-causing and thus set maximum contaminant levels (MCLs) for water systems to meet. The standards were set cautiously and conservatively.

The MCL for THMs was set in 1970 and revised in 1998; the new rule also added monitoring for HAAs. The new rules became effective for all surface and groundwater systems on Jan. 1, 2004, regardless of population size. Water systems are required to monitor for THMs and HAAs every three months. At the end of 2004, quarterly monitoring was

-more-

Attachment D**DRINKING WATER NOTICES NO REASON FOR CONSUMER CONCERN – page 2**

averaged and compared with the MCL. If the running annual average showed the level to be over that set by EPA, a water system was to examine its treatment techniques to get into compliance. It also was to notify the public of its monitoring results. Those averages and notifications became available in March.

Eight percent of large water systems – systems that served more than 10,000 people and treated surface water – were out of compliance in 2004, down from 37 percent in 2002. Most are taking further steps to control THM and HAA.

Smaller surface water systems and all groundwater systems began to comply with lower limits in 2004. As this was the first time that these smaller surface water systems monitored for THMs and HAAs, some had not changed their treatment processes enough to lower these levels and thus were out of compliance at the end of 2004. Of the approximately 208 groundwater systems and 103 small surface water systems, none of the groundwater systems exceeded the new MCL and 25 percent of the surface water systems did exceed them. That 25 percent was required to notify the public for the first time about this new monitoring. Those small surface water systems are now examining their treatment processes and preparing to make the changes necessary to return to compliance.

The health effects of DBPs are unclear. Some studies have shown no problems. Others have indicated a slightly higher incidence of bladder and colon cancer in areas where drinking water has been chlorinated. Though the science is uncertain, EPA has taken precautions by establishing MCLs. To experience health effects from water with elevated DBP levels, a person would have to drink two liters daily for 70 years of water containing elevated levels of these substances. Risks from not disinfecting are immediate, however.

For information about DBPs, contact the Drinking Water Hotline, 1-800-426-4791, or see these Web sites:

<http://www.epa.gov/safewater/hfacts.html>. Click on Disinfection Byproducts.

<http://www.epa.gov/safewater/mcl.html>. Scroll down to Disinfection Byproducts.

<http://www.epa.gov/safewater/pws/pn/handbook.pdf>. This site contains the handbook that tells how water systems are to notify their customers and exactly what language they must use.

Check out EPA's Safewater site, <http://www.epa.gov/safewater/>, for more information. Also see information on disinfection byproducts on the Kentucky Division of Water's Drinking Water Web site at <http://www.water.ky.gov/dw/profi/tips/Disinfection+Byproducts.htm>.

What's being done and what consumers can do

Water systems, with assistance from DOW when needed, will be adjusting treatment processes. Customers of water systems that sent notices need not switch to bottled water. THMs dissipate readily from water. THMs and HAAs both are removed when water is heated, such as for making coffee or tea.

For cold drinking water, or in making beverages with cold water, allowing the water container to sit uncovered at room temperature for several hours before refrigeration will allow much of the THM concentration to dissipate.

People with special health needs or concerns should contact their physicians for additional precautions.



TO: Deputy Assistant Administrator Ken Kopocis, Office of Water
CC: Senate Subcommittee on Fisheries, Water, and Wildlife
Senate Subcommittee on Regulatory Affairs and Federal Management
House of Representatives Subcommittee on Energy and Environment
House of Representatives Subcommittee on Government Operations
FROM: NRWA Regulatory Committee
DATE: October 2, 2015
RE: Water Policy for the National Water Safety and Quality Programs

The National Rural Water Association (NRWA) is the non-profit association of the federated state rural water associations with a combined membership of over 30,000 small and rural communities. NRWA is the country's largest water utility association and the largest community-based environmental organization. Our state rural water associations are non-profit associations governed by board members elected from the membership.

We appreciate the agency's effort to improve and enhance federal water regulations to be reasonable for small and rural communities.

Our member utilities have the very important public responsibility of complying with all applicable U.S. Environmental Protection Agency (EPA) regulations and for supplying the public with safe drinking water and sanitation every second of every day. Most U.S. water utilities are small; 94% of the country's 51,651 drinking water supplies serve communities with fewer than 10,000 persons, and 80% of the country's 16,255 wastewater supplies serve fewer than 10,000 persons. Small and rural communities often have difficulty providing safe, affordable drinking water and sanitation due to limited economies of scale and lack of technical expertise. Similarly, when it comes to providing safe water and compliance with federal standards, small and rural communities have a difficult time due to their limited customer base. This is compounded by the fact that small and rural communities often have lower median household incomes and higher water rates compared to larger communities. As a result, the cost of compliance is often dramatically higher per household.

NRWA's Regulatory Committee (members attached) is chartered to make policy recommendations to the entire association. Over the past year, the Committee has identified a number of policy improvements to the national drinking water program that have been approved and adopted by NRWA. The purpose of this memorandum is to identify the policy recommendations that could be implemented by EPA under the

Attachment E

agency's executive authority (i.e. without a change in federal water statutes) and urge you to adopt these policies to improve the national water safety and quality programs. We believe certain current EPA policies are unnecessarily alarming the public regarding the safety of its drinking water, are causing the public to unnecessarily avoid public drinking water, and are unnecessarily costly for the public. We hope you can implement modifications to current EPA regulatory policy to improve the national water program, enhance public health and better protect the environment. We look forward to working with you on these suggestions.

NRWA Water Policy Recommendations

Senator Wicker Tier 2 Public Notification Issues: The Senator's June 11, 2015 letter to you inquires if any Tier 2 public notices (PN) should be eligible for e-reporting or annual notice (similar to Tier 3 PNs). Your July 29, 2015, response to Senator Wicker did not answer this question. NRWA urges the agency to consider reclassifying disinfection by-products (DBPs) MCL violations as Tier 3 public notices or allow for e-reporting of the current DBP Tier 2 public notices. For fiscal year 2014, EPA lists 2,135 maximum contaminant level (MCL) violations of DBPs standards: 477 of those exceedances include no recorded level; 110 of the 416 violations for the haloacetic acids standards (HAA5) are for exceedances equal to or less than 5 parts per billion (PPB); and 174 of the total 1,252 violations for total trihalomethanes standards (TTHMs) are for violations equal to or less than 5 PPB. It is our understanding this category of DBP violations requires Tier 2 PN (direct mailing of the violation to consumers with mandated alarming language specified by EPA) which often results in alarming the public to the point they are afraid to drink the water. For example, after a DBP violation of one-half of a part per million, the local news station in Menominee, Michigan (WFRV, 4/3/2015) reported, *"Residents in Menominee, Michigan are Questioning the Safety of their Drinking Water... Last week, [a consumer] got a notice in the mail saying the Menominee city water system recently violated a drinking water standard. The supply tested high for trihalomethane, a disinfection by-product. 'It was kind of a slap in the face when I got this and I thought, here I'm paying for a commodity and I'm not really sure that it's safe,' explained [the consumer. 'I don't think I'm the only one in the city that feels that way... I'm actually looking into getting a whole house water filtration system,' she added. 'I don't trust our water anymore...'"* What the public wants to know most is whether there is a public health significance difference between 60 parts per billion and 65 parts per billion of THMs occurring in their water. Some states have been compelled to issue additional public notices to warn consumers of the EPA mandated warnings (Kentucky Department for Environmental Protection, May 9, 2005). The EPA reply to Senator Wicker also states that the Safe Drinking Water Act (SDWA) does not allow for consideration of *de minimis* public health risks above the MCLs. Regarding this conclusion, we urge the agency to review SDWA variance and exemptions sections that authorize the exceedance of MCLs under certain circumstances and only if the exceedance "will not result in an unreasonable risk to health." Senator Wicker's letter clearly raises this concern.

Attachment E

De Minimis Violations and EPA Enforcement Policy: The agency is implementing a new approach for enforcement targeting under the SDWA for public water systems. According to EPA, "The new approach includes a revised Enforcement Response Policy (ERP) and new Enforcement Targeting Tool (ETT), designed to identify public water systems with violations that rise to a level of significant noncompliance by focusing on those systems with health-based violations and those that show a history of violations across multiple rules... This system-based approach uses a tool that enables the prioritization of public water systems by assigning each violation a 'weight' or number of points based on the assigned threat to public health. Points for each violation at a water system are added together to provide a total score for that water system. Water systems whose scores exceed 11 are considered a priority system for enforcement." A simple analysis of some of the "worst" violators shows no correlation to severity of violation and public health threats. For example, Virginia's ETT database lists small communities with some of the highest or worst ETT scores in the country:

Public Water System Name	ETT Score	Pop.	On Path to Compliance?	SDWIS
HOBSON ARTESIAN	100	70	Not on Path	Fluoride 4.7 PPM
RESCUE WATERWORKS	99	203	Not on Path	Fluoride 4.4 PPM
BIRDSONG WATER COMPANY	97	71	Not on Path	Fluoride 5.3 PPM
WILLING WORKERS CLUB	59	31	Not on Path	Fluoride 4.1 PPM
CAPTAINS COVE SUBDIVISION	47	840	Not on Path	Arsenic 13 PPM
HOLLAND SUBDIVISION	37	405	Not on Path	No record
SPRINGFIELD DOWNS	36	120	Not on Path	Fluoride 5 PPM
LONGVIEW ACRES	36	168	Not on Path	Fluoride 4.9 PPM
CHERRY GROVE ACRES	36	108	Not on Path	Fluoride 4.8 PPM
BARREN SPRINGS WATER	33	146	Not on Path	Monitoring
MARSH RUN MOBILE HOME	31	1128	Not on Path	Arsenic 11 PPM
SHENANDOAH UTILITY	30	55	Not on Path	Monitoring
CRICKET HILL APARTMENTS	27	88	Not on Path	Monitoring

We urge the agency to modify its enforcement policy to better correlate for threats to public health, target technical assistance, acknowledge the limitation of funding for disadvantaged communities, and consider *de minimis* risks to public health. One of the "worst" violators of the SDWA (i.e. highest ETT score) is Rescue Waterworks in Virginia whose water has less than one-half a part per million of fluoride, a naturally occurring element in groundwater, above the MCL. Enforcement is not the appropriate approach to small communities in non-compliance that simply don't have the resources to afford compliance and have a violation of questionable health concerns. None of the non-compliance is a result of disregard for the rules; it is always a result of lack of resources. This can be especially acute in economically disadvantaged communities, when compliance is very costly, or when the violation is not actually related to public health. Most all SDWA violations that EPA identifies as "health based" are for naturally occurring substances, for total coliform which EPA no longer considers a violation or health threat, or a result of disinfecting the water. For fiscal year 2014, EPA lists 9,906 total health based violations: 2,648 violations are for total coliform (TCR); 1,176 violations are for the

Attachment E

arsenic rule, 297 of which are for an exceedance equal to or less than 2 parts per billion (PPB); 232 violations are for the fluoride rule, 221 of which are for an exceedance equal to or less than 2 parts per million (PPM); 331 violations are for the gross alpha standard, 204 of which are for an exceedance equal to or less than 10 pCi/L; 428 violations are for radium 226/228, 206 of which are for an exceedance equal to or less than 2 pCi/L; 262 violations are for the uranium standard, 58 of which are for an exceedance equal to or less than 10 picocuries per Liter (pCi/L); and 2,135 violations are for disinfection by-products standards, many of which are only slightly above the MCLs. Any modification in enforcement policy should include a workable variance policy.

Total Organic Carbon (TOC): One of the more frustrating requirements to operators of surface water treatment plants is the total organic carbon (TOC) percentage removal requirement. Compliance with this requirement is not only uncertain, but the costs of monitoring, reporting, and public notice are substantial. And then there is the public's reaction to the public notice for a rule violation that is not related to adverse health effects. Analysis conducted by the Kansas Rural Water Association finds that the level of precursors, that is organics as measured by TOC, is not an appropriate compliance surrogate. There are treatment plants that meet the THM and HAA MCLs but do not meet the TOC percentage reduction requirement. There are also treatment plants that do not meet these MCLs but do meet the TOC percentage reduction requirement. So there is not necessarily a correlation between MCL compliance and meeting the TOC percentage reduction requirement. Also, Kansas Rural Water Association found there are many situations where a treatment plant will have both a higher TOC concentration and lower THMs and HAAs in the drinking water than another plant source that has lower TOC concentrations and higher THMs and HAAs. We urge the agency to modify the rule to allow for TOC to be an operations measure but not a compliance indicator.

This issue of correlation, along with the concern about regulating a substance that has not been identified as a public health risk according to the Safe Drinking Water Act (1414(b)(i)), was initially raised by Senator Inhofe (Comments to EPA, 9/7/2005). Reform of the current public notice requirement for TOC violations would likely result in the public receiving more accurate information on the safety of their water. Consider the example of the City of Atchison, Kansas, where a TOC violation public notice motivated consumers to find alternatives to the public water and inspired the following comment from a consumer, *"The Atchison water system is kind of notorious for not being the best, so this is our effort to bring healthier solutions to the school."* (The Circuit, 2/10/2012)

Point of Use (POU) Technology: The federal standards promulgated under the SDWA are contingent upon feasible technology identified by the agency available to achieve compliance (§1412(b)(4)(E), *"Each national primary drinking water regulation which establishes a maximum contaminant level shall list the technology, treatment techniques, and other means which the Administrator finds to be feasible for purposes of meeting such maximum contaminant level, but a regulation under this subsection shall not require that any specified technology, treatment technique, or other means be used for purposes of meeting such maximum contaminant level."* Under §1412(b)(4)(E)(ii) of the SDWA, Congress determined that point of use (POU) technology does achieve compliance with federal standards, *"The Administrator shall include in the list any technology, treatment technique, or other means that is affordable, as determined by the*

Attachment E

Administrator in consultation with the States, for small public water systems... and that achieves compliance with the maximum contaminant level or treatment technique, including packaged or modular systems and point-of-entry or point-use treatment units."

Contrary to the SDWA, some states prohibit, discourage or will not approve the use of POU technology for compliance with federal standards. We urge the agency to provide a "safe harbor" from enforcement of federal standards for any public water system not provided all the available compliance options in the SDWA including POU technology. Furthermore, we urge the agency to make this a primacy requirement for states requesting primacy.

Public Sensitive Water Utility to the Internet: NRWA supports the May 26, 2015, Association of Metropolitan Water Agencies' (AMWA) letter to you regarding the "concerns about EPA making water treatment plant location data more readily available for public access via the internet." Similar to AMWA's position, NRWA is concerned about the posting of information on the internet that could increase risk to water utilities because it conveys a message that the information is not sensitive and that protecting it is not necessary.

Source Water Protection: In response to recent crises such as Charleston, West Virginia, we urge the agency to adopt new initiatives to enhance source water protection that allow for some immediate protection and do not require any grand spending program or any expansion of federal unfunded mandates. This suggestion relies on the advancement of information technologies to educate and empower the public to protect their own resources. In a novel governmental experiment a few years ago, Congress provided a small package of funding to the state agencies that protect ground water to design and publish on the internet a public disclosure database of all chemicals used in hydraulic fracturing events. This experiment proved to be widely successful. As it was created by the states, it was more accountable to state priorities and supported by local governments. For a small federal investment, this data-system could begin to publicly disclose all watersheds, all potential threats within those watersheds, the list of all communities that have adopted protection plans, copies of each protection plan, and a grading system for communities taking action. Communities could populate the data-system with their localized information. All of this would provide direct access to environmental data, governmental response information, and governmental accountability to the public. In addition, it would create a climate of peer pressure or polite competition for communities to highlight their initiatives. We can all agree that every city and state thinks it is doing the best job, and this system would allow the public to make sure their claims are accurate. Large communities and states would likely have the resources to complete plans and showcase their successes. Additional technical assistance could be provided to assist smaller communities that lack technical resources; 94% of community drinking water systems serve a population of fewer than 10,000 people.

Cyber Security Implementation in Water Utilities: Based on recommendations from the Department of Homeland Security (DHS - Sophisticated Cyber Threat Actors Target Industrial Control Systems), NRWA has been promoting that water systems should: isolate ICS networks from the internet, minimize network exposure for all control systems

Attachment E

devices, locate control system networks and devices behind firewalls, isolate control systems from the business network, employ secure methods such as Virtual Private Networks, remove, disable, or rename any default system accounts wherever possible, and implement account lockout policies in the coming weeks. We urge you to initiate a partnership with small and rural communities to secure the country's drinking water and sanitation supplies from cyber attacks. By collaborating with the water sector and utilizing the existing network that water supplies rely on for security initiatives and education, the Cybersecurity Framework could: (1) rapidly assess each water supply's efficacy in protecting its cyber infrastructure, (2) develop reasonable protocols to enhance protection, (3) provide assistance to any inadequate cyber protection plan, and (4) document the state of cyber-protection in all water supplies. Upon adoption/completion of a cybersecurity plan, each community will have a documented security plan that could be verified and open to review as appropriate. Federal, state and local authorities could easily track which communities have taken the initiative to secure their cyber infrastructure. The contents of each plan could be combined with each community's vulnerability assessment and emergency response plans. Local support and responsibility is essential to ensure security protection because only local experts can identify the most vulnerable elements in the community and detect immediate threats. A national collaboration on water cybersecurity should result in communities enthusiastically focusing on enhancing local security based on local risks.

The existing Risk Based Data Management System (RBDMS)/FracFocus information system should be used to launch this effort for a water "CyberFocus" for the water sector to make all water utility cyber-plans available to the public, continually updated, and quantifiable. DHS' Sophisticated Cyber Threat Actors Target Industrial Control Systems would be the foundation of the water utility cyber-security plans. Any additional data could be collected and shared with the feds for their analysis similar to what RBDMS is currently sharing with the Department of Energy for energy analysis.

Unregulated Contaminant Monitoring: Small and rural communities have been frustrated by the confusion that has resulted from EPA's requirement to list monitoring reports from their Unregulated Contaminant Monitoring (UCMRs) in their Consumer Confidence Reports (CCRs). We urge the agency to allow public water systems to make UCMR results publicly available (online) but not part of the consumer confidence reports. To put this request in context, all 70 PWSs sampled to date in South Carolina during UCMR3 had UCMR detections and thus require public notification. Many of these systems had detects found in each sample at every sampling point triggering numerous notifications, thus creating a lengthy CCR regardless of the absence of violations in their routine monitoring and operations. Specific to strontium, 68 of the 70 systems sampled had detects of strontium at a range of .31–1400 ug/L. Therefore no systems detected strontium under UCMR 3 at concentrations above the current HRL of 1500 ug/L. However, all of these systems were required to report strontium detects on their CCR. The following is excerpted from the statement that was submitted by Charles Gray of the Chesterfield County Rural Water (South Carolina) for consideration during the recent UCMR forum in June, 2014, *"We found positive detects for the following substances: Hexavalent Chromium (.058 – 1.0 ug/l), 1,4 Dioxane (0.123 – 0.589 ug/l), Strontium (12 – 47 ug/l), Vanadium (0.12 - 0.45 ug/l), Chlorate (100 – 130 ug/l) and 1, 1 Dichloroethane (38 – 38 ug/l)... These are, by definition, unregulated elements and/or*

Attachment E

compounds found in water samples. The term "contaminant" has a negative connotation for customers, when another, less alarming and more accurate term could be used if a utility is going to be required to report findings... It is unclear and apparently undefined as to the concentration of the elements or compounds that may cause some detrimental impact on public health. As such, it seems reporting these findings without clear determination of what accepted levels are considered unsafe concentrations is premature and unwarranted. It also leaves the public without the information they most want to know; what levels of these substances are safe or not safe. We don't think EPA should override the locally preferred public disclosure policy without providing this basic information to the public... Consumer Confidence Reports are intended to inform the public about the safety of their drinking water and system operation. A system can have flawless performance and meet all the guidelines of the Safe Drinking Water Act (SDWA), and yet have "hits" on unregulated contaminants and appear to consumers that issues exist with system operations... Does the SDWA mandate that unregulated contaminants be reported in CCRs? If not, why was this required? If this reporting is not required by EPA, water utilities should be allowed to publicly disclose the information in a manner more reflective of public health relevance."

Regulation of Storage Tanks: EPA is proposing new regulations for "Finished Water Storage Facility Inspection Requirements Addendum to the Revised Total Coliform Rule" (a.k.a. Inspection of Finished Drinking Water Storage Facilities NPDWR, Docket No.: EPA-HQ-OW-2008-0878). According to the agency, "EPA is planning to propose an addendum to the Revised Total Coliform Rule (RTCR) to strengthen public health protection by including finished water storage facility inspection (SFI) requirements. In the preamble to the July 2010 proposed RTCR (75 FR 40926)." NRWA urges the agency to withdraw this proposal for the following reasons: First, a uniform regulation for tanks will result in unintended consequences and unnecessary requirements in some communities and discourage local officials from staying vigilant for threats unique to their storage and distribution system. Encouraging local governments to be vigilant in monitoring their systems would be more effective because each community's threats/vulnerabilities are unique. Second, the SDWA does not authorize such a rule; it authorizes rules such as National Primary Drinking Water Regulations (NPDWRs) only after a finding of contamination, not for prevention of contamination unless explicitly authorized like the Surface Water Treatment Rule or Groundwater Rule. Third, many tanks don't need consultant-type inspections. Local education and technical assistance would be more cost effective, locally supported, and protective. Finally, NRWA's representative of the Federal Advisory Committee reviewing the Revised Total Coliform Rule (RTCR), David Baird, commented that this proposal "violates the agreement in principle that NRWA and EPA negotiated and agreed to implement... Tank inspections are addressed by the systems as part of sanitary surveys and routine system operation and maintenance. The RTCR was specifically designed so that when there was a positive coliform hit, the system would need to investigate (through a self assessment) and not just rely on up and downstream samples as was the case under the old rule. Ultimately, the systems would investigate potential sources of the positive hit based on the design and operation of their individual systems. This was considered to be an improvement over the old rule, because systems had to look for the source of positive hit. It was up to the water system as to how they conducted the assessment."

Attachment E

This proposed action by is moving into the territory of a 'Distribution Rule.' At the beginning of the RTCR process, EPA presented information as to why a Distribution Rule should be developed as part of the RTCR. The RTCR committee clearly rejected any Distribution Rule component. EPA attempted to bring this up during the 2 years of FACA meetings and the committee continued to oppose."

Watershed Pollution Trading Policy: Most all small communities comply with modified National Pollution Discharge Elimination System (NPDES) permits influenced by EPA's Total Maximum Daily Load TMDL program without ever considering a trading component that could be more environmentally beneficial and more economical (most all of these small communities are not aware of the trading option - and most states don't encourage trading). There is currently no successful effort, incentive, or locally available triggering authority to allow for a trading option or even trading consideration to occur. Legal challenges in federal/state court by small communities to allow for trading compliance schemes are not possible in these situations because small communities can't afford the legal costs, don't know it is possible, and don't understand that process.

As more TMDLs and state nutrient plans are implemented, we expect to see more communities adversely impacted that could benefit from the trading option. This concept also applies to recent agency initiatives to reduce nutrient pollution in addition to NPDES compliance such as initiatives emanating from the recent Toledo, Ohio crisis. A number of our members within the Chesapeake Bay TMDL are interested in a trading option that would expand local digester capacity to treat more agriculture and dairy livestock waste and convert the waste to renewable energy and benign solids. Such a proposal would reduce nutrients to the Chesapeake Bay more than the prescribed reductions in their point-source effluent for less cost (the bulk of the nutrient pollution in the waters is coming from the farms not the cities). However, there is no available process for these communities to adopt such an innovative compliance alternative. One municipality (Cortland, New York) wants to increase the capacity of their digester and consider changing the location so that it could treat animal waste from the surrounding farms at no cost to the farmers (some of whom have non-working digesters or land-applying manure). The resulting energy could pay for the transportation of the animal manure.

We urge the agency to adopt a new trading policy to allow for some type of third part certification (i.e. conservation districts) to authorize, calculate, or propose trading schemes. This would assist small communities and state agencies by removing the administrative burden of proposing trading programs. Additionally, every community facing more stringent NPDES compliance due to TMDLs should be provided an opportunity to propose a trading compliance option before an enforcement action is taken.

Affordability and Environmental Justice: In order to prohibit small communities from utilizing economical treatment options (so-called small system variance technologies) under the Safe Drinking Water Act – the EPA must make a finding that their rules are "affordable" [(42 U.S.C. 300g-1(b)(15)(A)]. To determine affordability, EPA adopted a policy that families can afford annual water rates of 2.5% of median household income (MHI). NRW has commented to EPA that the use of MHI computed as a national

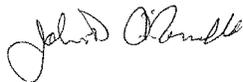
Attachment E

aggregate as the sole metric for determining affordability has many problems and should be revised to be reasonable for small communities and allow access to affordable compliance treatment options. After a Congressional directed review, EPA concluded the following in March, 2006, "Some stakeholders have argued that the current criteria are too stringent and fail to recognize situations in which a significant minority of systems within a size category may find a regulation unaffordable. After seven years of experience with the current criteria, EPA agrees it is time to consider refinements to address the situations of communities with below average incomes or above average drinking water and treatment costs (FR p.10671 – March, 2007)." EPA has not finalized a new policy after making this declaration in 2006. EPA has stated that the purpose of their affordability determination is to "look across all the households in a given size category of systems and determine what is affordable to the typical, or middle of the road household" [Federal Register (Jan. 22, 2001) 6975- 7066]. EPA's MHI standard does not consider the quantity, concentration, rural demographics, and financial abilities of low-income families or disadvantaged populations to afford the rule as required by the Agency's Environmental Justice policy [Executive Order 12898].

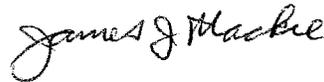
Lead and Copper Rule Revisions: We appreciate the invitation from EPA for John Sasur of Three Rivers Fire District, Massachusetts to represent small and rural communities on the National Drinking Water Advisory Council Lead and Copper Rule (LCR) Working Group. NRWA's priority issue in any new LCR is an alternative to in-home consumer monitoring. The current in-home monitoring is problematic (unworkable, unreliable, error-prone, and not an indicator of contamination) and needs to be replaced with a new scheme.

Thank you for your consideration of our concerns. Please contact NRWA staff member, Mike Keegan <keegan@ruralwater.org> with any questions.

Sincerely, NRWA Regulatory Committee



John O'Connell (Chair)
City of Cortland Wastewater Treatment,
New York



Jim Mackie
Willingboro Municipal Utilities Authority,
New Jersey



George Crum
Pennsylvania Rural Water Association



Bob Freudenthal
Tennessee Association of Utility Districts

Attachment E



Gary Williams
Florida Rural Water Association



George Hanson
Chesapeake Ranch Water Company,
Maryland



Jill Miller
South Carolina Rural Water Association



Wilmer Melton
City of Kannapolis, North Carolina



John Sasur
Three Rivers Fire District,
Massachusetts



Earl McKinney
Wyoming Association of Rural Water

Daniel Wilson
North Carolina Rural Water Association

Addendum (March 17, 2016)

Emergency Generators and Peak Shaving Program: The 2010 National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines ("RICE NESHAP") specified that small emergency electric generating units used for peak shaving must meet the emission standards for non-emergency engines. An emergency generator that is compliant with the new rule (tier 4 generator) is double the cost of the status quo generators (tier 3 generator). For example, a tier 3--150 kilowatt generator costs approximately \$50,000 and a tier 4 unit of similar size costs around \$100,000.

The EPA found that the operation for peak shaving does not come under the definition of emergency use as it is designed to increase capacity in the system rather than responding to an emergency situation such as a blackout or imminent brownout. The rule allows for emergency units to operate up to 100 hours-per-year or more for testing, maintenance, etc., including 50 hours-per-year for non-emergency situations – but specifically not for peak-shaving purposes. Peak shaving programs involve minimal hours of operation, thereby having the potential not to add to the allowed 100 annual hours of operation contained in the rules. Therefore, continuing the use of peak shaving programs would not cause additional public health risks or environmental harm beyond those already contemplated in the final rule.

According to the National Rural Electric Cooperative Association (NRECA), *"Elimination of peak-shaving programs, however, would require the procurement of additional central station capacity and potentially the addition of transmission and distribution line capacity to service the demand increase. While peak-shaving programs do not generate income for the distribution cooperative, they do produce economic benefits by reducing the level of demand on their electric power suppliers, resulting in reduced demand costs. These reduced costs, in turn, are shared with the owners of these small emergency generating units that participate in peak shaving programs: a win-win arrangement that helps hold down power costs for the owners of these units, as well as for the cooperatives other consumer-owners."*

In light of the minimal environmental effects and significant benefit from having these small stationary emergency units available, the restriction of the operation of these emergency units for peak-shaving and demand reduction programs should be eliminated. This change would not result in any additional run-time above the 100 hours of operation that is already provided for in the rule.

Senator INHOFE. Well, thank you very much, Mr. Moore.
Mr. Arndt is from Pennsylvania and here representing the American Water Works Association.
Mr. Arndt.

STATEMENT OF AUREL ARNDT, FORMER EXECUTIVE OFFICER, LEHIGH COUNTY AUTHORITY, PENNSYLVANIA, ON BEHALF OF THE AMERICAN WATER WORKS ASSOCIATION

Mr. ARNDT. Good morning, Mr. Chairman, Ranking Member Boxer, and members of the committee. I want to thank you on behalf of the 50,000-plus water professionals that make up the membership of the American Water Works Association, or AWWA, for this opportunity to provide comments on the critical issue of affordable financing for our water infrastructure, and in particular what the Federal role should be.

AWWA has had two longstanding policies which bear on infrastructure financing: first, that water service should be provided by utilities that are self-sustaining from local rates and other charges, and second, that water infrastructure can best be financed with a multifaceted toolbox, recognizing that there is significant diversity among water systems in our country and their infrastructure needs also differ widely.

I would like to provide some context for the suggestions that I will make in a few minutes, because I think they are important to set the stage for the circumstances that we face.

There are many studies and reports out there which attempt to analyze or estimate what our country spends on average annually for water infrastructure, and those results vary widely. However, most of the results seem to home in in the vicinity of \$30 billion to \$50 billion per year, and it is important to recognize that that number fluctuates widely from year to year based on circumstances such as the general economy, interest rates, the regulatory requirements that are imposed, and also competing local demands in many of our communities.

What is very clear, however, is that the annual need for investment in our water infrastructure is going to grow dramatically in the coming decades. By most estimates, it will at least triple—and possibly even quadruple—by 2040.

In 2012, AWWA produced a report that is called “Buried No Longer: Confronting America’s Water Infrastructure Challenge.” That report addressed one narrow area of our water infrastructure. Specifically, it looked at our aging water mains. And what that report concluded is that we will require an investment of \$1 trillion over the next 25 years just to replace the water mains that will become obsolete during that timeframe. That number includes nothing for other growing drinking water needs, nor for CSO or SSO or other wastewater types of issues. Clearly significant numbers when you compare to what we are currently spending.

Another important feature to recognize, that water services are the most capital intensive of all the utility services that we provide in our country. What this means is when we invest bigger dollars, more dollars in that water infrastructure, it is going to have a big impact on rate, and in turn will have a big impact on the affordability of those water rates to the consumers.

We believe, given these circumstances, that we have to do two things, and we have to pursue these efforts relentlessly. First, we need to preserve existing sources of water infrastructure capital and add new sources to the toolbox to address those needs that are unmet by current tools. We also need to find ways to reduce the cost of the capital that is available for water infrastructure.

In our written testimony, we identify four areas where we believe that the Federal Government has an important role. Specifically, they include tax-exempt bonds, the Water Infrastructure Finance and Innovation Act, the State Revolving Loan Funds, and private activity bonds.

In my remaining comments, I am going to address the first two—not because the other two are unimportant, but I believe those other two will be addressed by other panelists here today.

With regard to tax-exempt bonds, it is important to recognize that tax-exempt bonds are currently the largest source of funding for water infrastructure. Between 75 and 80 percent of our annual investment is currently funded via that vehicle, and tax-exempt bonds are used by approximately 70 percent of the utilities across the country.

We acknowledge the concerns and the scrutiny on tax-exempt bonds that is currently under discussion, but we believe that concern is wholly inappropriate considering that they are used, in the case of water infrastructure, to finance essential public services. As water utilities, we need billions of dollars annually for water infrastructure, and we need to have lenders who can provide those billions of dollars. Recognizing the tax treatment, the steady stream of revenue, and the security of the investment, investors willingly accept a below market interest rate, and that interest rate is passed along to the utilities who use those tax-exempt bonds. In turn, those savings on the financing are used to reduce the rates to customers or maintain the rates to customers and improve the affordability of rates.

If we take away this financing, the cost of capital and the customer rates that follow will rise to unprecedented levels and create unprecedented difficulties for affordability, particularly in our older cities.

With regard to WIFIA, first of all, I want to thank the committee for their role in enacting WIFIA as part of the WRDA bill in 2014 and more recently removing the ban on using tax-exempt bonds to provide the local match for WIFIA loans. We think that is a great step forward.

WIFIA is clearly one of those tools that can expand the pool of—

Senator INHOFE. Mr. Arndt, you are quite a ways over your time. Please wrap up.

Mr. ARNDT. OK.

Senator BOXER. But I like what he is saying.

Senator INHOFE. I am listening to what he is saying.

Mr. ARNDT. I will wrap up very quickly.

Senator INHOFE. That has been another one of our mutual projects, by the way.

Senator BOXER. Yes. Very proud of that.

Mr. ARNDT. We have four recommendations with regard to WIFIA and they are in our testimony, but most importantly we need an appropriation so that program can be launched and that money can be put to work for water systems across the country.

Thank you for your attention.

[The prepared statement of Mr. Arndt follows:]



American Water Works
Association

Dedicated to the World's Most Important Resource®

**The Federal Role in Keeping Water
and Wastewater Infrastructure Affordable**

**Presented by
Aurel Arndt
Chair, Water Utility Council
American Water Works Association**

**Before the Senate Committee on Environment and Public Works
April 7, 2016**

Good morning, Chairman Inhofe, Ranking Member Boxer and members of the committee. My name is Aurel Arndt, and I am chair of the Water Utility Council of the American Water Works Association. Established in 1881, the American Water Works Association is the largest nonprofit, scientific and educational association dedicated to managing and treating water, the world's most important resource. With approximately 50,000 members, AWWA provides solutions to improve public health, protect the environment, strengthen the economy and enhance our quality of life.

AWWA deeply appreciates this opportunity to offer input on the critical issue the subcommittee is addressing today: water infrastructure financing and innovative tools to meet national and local needs.

As for my background, I recently retired as CEO of the Lehigh County Authority based in Allentown, Pennsylvania. Lehigh County Authority is a municipal utility providing high-quality, affordable and reliable water and sewer service to more than 50,000 customers in Lehigh County and Northampton counties. I worked for the Lehigh County Authority for more than 40 years, and served as CFO for 27 years during my employment there. Throughout my career, which includes service on the Executive Board of the Government Finance Officers Association, then the board of the Pennsylvania Infrastructure Investment Authority (PennVest), and now on the Water Utility Council of AWWA, I have focused my efforts and interest on water infrastructure finance. I am here today representing AWWA and its members across the United States.

Water infrastructure is vital to our nation's well-being for a variety of reasons. Most obviously, water infrastructure protects public health and the environment, supports local economies, protects us from fires, and brings us a better quality of life. Moreover, the US Department of

Commerce Bureau of Economic Analysis (BEA) estimates that for every dollar spent on water infrastructure, about \$2.62 is generated in the private economy. And for every job added in the water workforce, the BEA estimates 3.68 jobs are added to the national economy.

The recent events in Flint, Michigan, have highlighted how vital it is to operate, maintain and reinvest in our nation's water infrastructure.

Back in 2012, AWWA released a report titled, "Buried No Longer: Confronting America's Water Infrastructure Challenge," which revealed that restoring existing water systems as they reach the end of their useful lives and expanding them to serve a growing population will cost at least \$1 trillion over the next 25 years. Please note that this \$1 trillion is only for buried drinking water assets. Above-ground facilities, waste water, storm water, and other water-related investment needs are at least as large, and must be added to reflect the true magnitude of the water investment needs before our country. I am providing copies of that report to members of the committee. We are currently working on a similar report that will provide an estimate for wastewater infrastructure wastewater needs.

AWWA has a long-standing policy that communities are best served by water utilities that are self-sustaining through local rates and charges. However, the current sources of funding are woefully inadequate to finance our future water infrastructure needs, leading to the difficult question of how to do that.

Often a large investment in infrastructure is required that is too large to be accommodated affordably in a short time frame only through those local rates and charges. These larger investments are often driven by the critical, large-scale need to replace or upgrade a treatment plant or a pipe network that has reached the end of its lifespan or also when new drinking water regulations require new facilities and those costs are super imposed on communities where water charges and other utility and tax rates are nearly or already beyond the means of the community and its residents. Often, a large amount of a utility's operating costs are dedicated to debt service. Reducing the cost of these necessary expenditures through a variety of financial mechanisms which lower the cost of debt service should be the goal of all responsible water utility administrators and elected officials.

AWWA has long supported the adoption and use of a multi-faceted toolbox of water infrastructure finance tools to address the widely varied water infrastructure investment challenges that water systems face currently and in the the future. In addition to preserving and growing the existing sources of capital, other finance tools must be identified, developed, implemented and applied to fulfill our responsibility to the water ratepayers and consumers across the country. Clearly the federal government has a significant role in maximizing the availability and value of some of these tools, including tax-exempt municipal bonds, the Water Infrastructure Finance and Innovation Act (WIFIA) program, state revolving loan funds (SRFs) and private activity bonds. Remember that municipal bonds, WIFIA loans and private activity bonds are fully repaid through those local rates and charges. SRF loans are generally repaid the same way, but do offer features such as principal forgiveness and negative-interest loans to assist more financially challenged communities.

Primarily, we need to expand the available amount of water infrastructure capital and minimize its cost. Effectively, the result will be significant acceleration of needed water infrastructure investment and making it more affordable for utilities and their customers. Lowering the cost of infrastructure investment pays dividends in other ways as well. Most fundamentally, it makes it possible to do more with less, that is, to rebuild more infrastructure at the same or at a lower total cost.

Tax-Exempt Municipal Bonds

Tax-exempt municipal bonds have been an invaluable tool for water utilities, and at least 70% of U.S. utilities rely on them to some degree. They provide lower interest rates than commercial bonds and provide relatively quick access to capital. They are often the core funding source to finance many water infrastructure projects.

The lower the interest rate on such bonds, even by just a few percentage points in a multi-million dollar loan can amount to significant reduction in the cost impact of an infrastructure project to ratepayers. For example, lowering the cost of borrowing by 2.5 percent on a 30-year loan reduces the lifetime project costs by almost 26 percent, the same result as a 26-percent grant.

We know that in the current fiscal climate, all tax issues are on the table here in Washington. One of those may be the degree to which higher-income earners can utilize the tax-exempt features of municipal bonds. On the surface, this might have some appeal, but I don't think it stands up to serious scrutiny. In my experience and in the experience of fellow utility managers at AWWA, a large share of the purchases of tax-exempt municipal bonds are made by those very higher-income earners, but they accept a lower interest rate in exchange and water utilities and their customers directly benefit from those lower rates. If they are denied tax-exempt interest, the result for utility finance would be devastating. Moreover, no other financing vehicle is as flexible for utilities as these bonds. We must preserve this particular tool in the finance toolbox, and so AWWA joins organizations representing locally elected officials in urging you to protect the current tax exemption of municipal bonds.

The Water Infrastructure Finance and Innovation Act

AWWA and its colleagues in the water sector thank the Congress and this committee in particular for its leadership in seeing through enactment of WIFIA as a part of the Water Resources Reform and Development Act in 2014. As you know, WIFIA has tremendous potential to help municipal and privately held water utilities fill a significant gap between what current water infrastructure tools can do and what needs to be done.

WIFIA would assist communities in meeting water infrastructure needs in a manner that would have minimal to the federal government while complementing existing financing mechanisms, maintaining the current federal role, leveraging private capital and creating vital manufacturing and construction jobs.

As you know, WIFIA would access funds from the U.S. Treasury at long-term Treasury rates and use those funds to provide loans, loan guarantees, or other credit support for water infrastructure projects. WIFIA can provide loans too large or outside the scope of the SRF program. While the SRF program does an excellent job of helping primarily small-to-medium-sized communities facing the most direct threats to public health in water, WIFIA can finance larger-scale projects that help communities prevent their becoming at risk for regulatory compliance and the consequential hazards to public health and safety. That said, the SRFs can package a number of loans to small and medium-sized systems to access WIFIA funding, and WIFIA allows loans to small systems at lower project-size thresholds than required for other systems.

Under WIFIA, funds will flow from the Treasury, through WIFIA, to funding recipients to enlarge their pool of capital. Loan repayments – with interest – and guarantee fees would flow back to WIFIA and thence into the Treasury – again, with interest.

Eligible water infrastructure projects include drinking water, waste water, storm water, water reuse and desalination, and similar projects, and associated water infrastructure replacement.

A key feature of the draft proposal for WIFIA, as in TIFIA, is the minimal cost to the Federal Government. Under the Federal Credit Reform Act, a federal entity can provide credit assistance to the extent that Congress annually appropriates budget authority to cover the "subsidy cost" of the loan, i.e. the net long-term cost of the loan to the Federal government. In this way, Congress directly controls the amount of lending – but the budgetary impact is also minimal because it reflects the net long-term cost of the loan. As you may know, virtually all water-related loans are repaid in full. In fact, Fitch Ratings, a top credit rating agency, determined that the historical default rate on water bonds is 0.04 percent. Indeed, water service providers are among the most fiscally responsible borrowers in the United States. Moreover, those states that leverage their SRF programs have no history of defaults, placing them among the strongest credits in the country. Consequently, WIFIA – because it involves loans that are repaid with interest – involves minimal risks and minimal long-term costs to the federal government. TIFIA is able to leverage federal funds at a ratio of approximately 10:1. With the water sector's strong credit ratings and history, that ratio should be even greater for WIFIA. We've heard discussions in Congress estimating the leverage ratio for the water sector could be 1:50, which would mean a tremendous amount of low-cost finance could be available to help address the nation's water infrastructure challenges. That also means that because of the sector's strong credit rating and history, the "subsidy cost" called for by the Federal Credit Reform Act would be minimal.

In short, WIFIA will allow our nation to build more water infrastructure at less cost. And on top of that, we will get a cleaner environment, better public health and safety and a stronger foundation for our economy.

- **Recommendations for WIFIA**

- We urge Congress to fully fund WIFIA at its authorized level of at least \$35 million in Fiscal Year 2017. We understand this is not an appropriations committee, so we ask that you communicate the need to more fully invest in our nation's water infrastructure to your colleagues on those committees. So far, Congress has only appropriated \$2.2 million in each of the previous two fiscal years for EPA to set up the program. The time has come for EPA to be able to issue WIFIA loans.
- WIFIA was enacted as a five-year pilot program. As mentioned above, the first two years have been lost to setting up the program. We urge Congress to at least extend the pilot test for another two years. However, given the success of TIFIA, we do feel Congress would be justified in making WIFIA a permanent program as well.
- We deeply appreciate Congress not only enacting WIFIA, but last fall removing the ban on the use of tax-exempt finance for a project receiving support from WIFIA. To fully realize WIFIA's potential, we urge Congress to remove the 49 percent cap on WIFIA support of a project, which was adopted from TIFIA. Transportation projects receive funding from a variety of local, state and federal sources, so we understand where this cap came from. However, water utilities are a much safer risk and this cap will push communities toward applying for a variety of financial instruments, thus increasing administrative and financing costs for a project significantly.

State Revolving Loan Funds (SRFs)

Created in the 1996 Amendments to the Safe Drinking Water Act, the drinking water state revolving loan fund has been an excellent tool for providing funds for water infrastructure, primarily for small to medium-sized utilities facing compliance challenges. The Clean Water SRF has existed since 1988. AWWA supports robust funding of the state revolving loan fund programs for drinking water and wastewater.

The drinking water SRF in particular was authorized to support infrastructure projects necessary for regulatory compliance and must give highest priority to projects where there is the most immediate threat to public health. However, this can tend to put a lower priority on replacing aging infrastructure unless there is a compliance challenge, and leaves out expanding infrastructure to address growing populations. The latter is a particular issue in the South and the West, where many communities are still growing. Finally, because annual appropriations for the SRF are divided up among the 50 states, the body of funds available for loans is over-subscribed in most states. We realize there are exceptions here and there, but in surveying SRF loans, we find that the typical cap on a drinking water SRF loan is about \$20 million. In one state in the Pacific Northwest, our members have been told not to bother applying if the loan is to be above \$6 million. These factors led to our support for WIFIA, but we do not want support of WIFIA in Congress to come at the expense of the SRFs.

- **Recommendation for the SRFs**

We urge Congress to appropriate at least \$1.3 billion each for the drinking water and

wastewater SRF programs. We have known for years that the infrastructure needs for drinking water and wastewater are roughly equal, and investment in the SRF ought to reflect that. We understand there is interest in reauthorizing the SRF programs. Indeed, authorization for the drinking water SRF expired in 2003 and that gives us concern. We offer the experience and expertise of our members as Congress considers this important issue.

Private Activity Bonds

Another tool that could help meet our water infrastructure investment needs is greater use of private activity bonds (PABs). Currently, municipal bonds that meet certain private use tests are considered private activity bonds and become subject to state-by-state volume caps. This severely limits the amount of PABs that can be issued for water facilities. To encourage public-private partnerships and reduce financing costs, PABs for community water systems could be exempted from the state volume cap, just as PABs for publicly owned solid waste facilities are currently exempted. We urge Congress to take that step.

Summary

To help provide for sound water infrastructure across the country for communities of all sizes, AWWA urges Congress to

- fully fund WIFIA at its authorized level of \$35 million in FY2017;
- remove the 49 percent cap for WIFIA support of a project;
- extend WIFIA at least for two more years;
- preserve the current tax-exempt status for municipal bonds;
- maintain funding for robust drinking water and wastewater state revolving loan fund programs; and
- remove the annual volume caps for private activity bonds for water infrastructure projects.

We thank the Environment and Public Works Committee for the leadership it has taken today and over many sessions of Congress in addressing the nation's water infrastructure needs. We are eager to help in any way we can to advance your work on all aspects of water infrastructure.

Thank you again for the opportunity to appear today. I will be happy to answer any questions or to provide you with any other assistance I can, now or in the coming months.

American Water Works Association
Government Affairs Office
1300 Eye Street NW
Suite 701 W
Washington, DC 20005-3314
T 202.628.8303
www.awwa.org

Senator INHOFE. Thank you. That was excellent.

Mr. Gysel is here from Phoenix, Arizona, representing the National Association of Water Companies.

Mr. Gysel.

STATEMENT OF JOE GYSEL, PRESIDENT, EPCOR WATER (USA), INC., PHOENIX, ARIZONA, ON BEHALF OF THE NATIONAL ASSOCIATION OF WATER COMPANIES

Mr. GYSEL. Good morning, Chairman Inhofe, Ranking Member Boxer, and members of the committee. My name is Joe Gysel, and I am the President of EPCOR Water and serve as the current President of the National Association of Water Companies representing the regulated private water industry. I am pleased to join you today to talk about water infrastructure actions the Federal Government can take to advance innovative and sustainable solutions in meeting the Nation's needs.

NAWC members span the Nation and range in size from large national and regional companies serving millions of customers to individual utilities serving less than a few hundred connections. Private utilities have existed in the United States for well over 100 years. We are regulated by State utility commissions and have one of the best compliance track records in the industry. Collectively, we serve more than 73 million Americans.

NAWC believes that by embracing the powerful combination of public service and private enterprise we can improve water infrastructure by investing in plant, improving customer service and reliability, and creating jobs. We applaud this committee for bringing water infrastructure issues to the forefront and your leadership in advancing necessary changes to preserve and enhance water infrastructure.

This morning I would like to emphasize a few points regarding private water's role as part of the solution to our infrastructure and resource needs.

It is unfortunate that our aging and deteriorating public water systems threaten the economic viability and public health. Communities nationwide are faced with massive fiscal challenges and competing priorities to replace critical infrastructure, as was evidenced in Flint, Michigan.

The American Society of Civil Engineers gives U.S. water infrastructure a failing grade of D, with a current funding gap estimated to be as high as \$1 trillion. Addressing these needs requires innovative funding solutions to include the private sector, as Federal funding alone will not be able to bridge the growing investment gap. This will require Congress to examine all future related funding policies to ensure that the private water industry is part of the solution.

The private water sector continues to help communities with significant capital investment. NAWC's six largest members, which service about 6 percent of the U.S. population, are collectively investing approximately \$2 billion annually in their systems. This is significant when compared to the latest annual Federal water appropriation funding of only \$2.25 billion. Clearly, the private sector has the financial capacity, resources, and expertise to assist in the

Nation's water infrastructure challenges that plague many of our cities.

Sustainable water management also requires innovative technologies and strategies for long-term resource planning. NAWC members operate in multiple jurisdictions and are uniquely qualified to deliver strategies and solutions for long-term resource development and security. These range from water conservation programs to developing wastewater recycling and recharge facilities, or long-term public-private regional water agreements such as the one EPCOR recently signed to utilize renewable resources when shifting from ag to municipal applications.

Further support in funding the Nation's water challenges can also be achieved through public-private partnerships. Our member companies have experience with P3s, which have benefited communities in delivering superior water service while freeing up scarce municipal funds for competing priority projects. These same models can also be applied to broader water augmentation and infrastructure projects to serve large, multijurisdictional or State water projects to address growing water scarcity requirements.

Unfortunately, current rules and regulations create impediments that restrict many municipalities from entering into cost saving partnerships with private water companies. Federal policy plays an important role in establishing incentives for water investment. Congress and the Administration can act to remove barriers to access the vast potential of private capital in much-needed water infrastructure projects.

To succeed, NAWC recommends the following actions: removal of State volume caps on private activity bonds for water projects, allowing for increased private investment in water systems and the alignment of our critical infrastructure with airports, high speed rail, and solid waste disposal; second, clarify the Internal Revenue Code to avoid defeasance of beneficial P3s so that long-term concession agreements are no longer penalized; third, expansion of State Revolving Funds and their eligibility so private water utilities are no longer limited in their use of clean water funding; in addition, fully implement the WIFIA program to facilitate private investment in water infrastructure and ensure private companies have equal opportunity to participate and fully leverage those same programs; finally, establish a centralized office to navigate the complex P3 terrain, providing professional services to assist all municipalities with this model.

Mr. Chairman and committee members, thank you again for the opportunity for the NAWC to address you today. We are committed to work with you, our industry colleagues and stakeholders to meet the challenges of sustainable water infrastructure, and I am happy to answer questions after.

[The prepared statement of Mr. Gysel follows:]

Testimony of Joe Gysel, President of EPCOR Water USA, Inc. and
President of the National Association of Water Companies (NAWC)

“The Federal Role in Keeping Water and Wastewater Infrastructure
Affordable”

Presented On behalf of NAWC
Before the Senate Environment and Public Works Committee
April 7, 2016

10 AM
410 Dirksen Senate Office Building

Good morning, Chairman Inhofe, Ranking Member Boxer and Members of the Committee. I am Joe Gysel, President of EPCOR Water USA, Inc. and the current President of the National Association of Water Companies – the association that represents the regulated private water service industry, as well as professional water management companies. I am pleased to join you today on behalf of NAWC to talk about water infrastructure and the actions the federal government can take to unleash innovative and sustainable solutions to meet this nation’s water infrastructure needs. NAWC believes that by embracing the powerful combination of public service and private enterprise - we can improve water infrastructure in communities across the country. The NAWC applauds this Committee for bringing water infrastructure issues to the forefront and for providing us with the opportunity to discuss the transformational solutions that the private water industry can bring to the table.

NAWC members are located throughout the nation and range in size from large companies that own, operate or partner with hundreds of systems in multiple states to individual utilities serving a few hundred customers. Through NAWC’s various innovative business models, private water and wastewater professionals serve more than 73 million Americans, nearly a quarter of our country’s population.

EPCOR Water USA is an Arizona-based water and wastewater utility providing service to over 350,000 people in Arizona and New Mexico across 22 communities and seven counties, with more than 125 years of history in the business and care of water resources and systems.

I. Private Water Companies

Private water systems have existed in the United States for well over 100 years. In fact, NAWC’s oldest member utility, York Water in Pennsylvania, is celebrating its 200th anniversary this year. The private water utility sector is highly regulated both by the state Public Utility Commissions (PUCs) which set the water rates that may be charged, and by the EPA for water quality. Private water companies consistently uphold the Clean Water Act and Safe Drinking Water Act standards to ensure quality drinking water and/or wastewater services for the communities they serve.

In fact, NAWC members have the best compliance track record in the industry. A 2011 survey by *American Water Intelligence* of EPA Safe Drinking Water Act violations for the previous five years found over 2,900 sites in violation among government-owned systems—only 14 violations were found among regulated private utilities. Given the private industry’s expertise and exemplary compliance record, NAWC members are often asked by state regulators to revitalize non-compliant public systems.

Our members meet all regulatory requirements and are 100% in compliance on vulnerability assessments and emergency response plans as required by law. They go beyond these federal mandates by advancing preparedness and resiliency measures, voluntarily investing heavily in extreme contingency measures and conducting frequent updated bio-terrorism assessments; develop business continuity plans; and generate successful, innovative and forward-thinking resiliency measures so that the communities they serve are protected and have access to the safest drinking water in the face of extreme weather events or terrorism.

The private water utility sector focuses on long-term planning by making the appropriate and necessary investment for our nation's communities. Such investments and strategies are required by Public Utility Commissions in the ratemaking process throughout the United States. As a result, private water companies are generally more fiscally responsible and consistently perform with measurable efficiency gains over municipally owned utilities.

Investor-owned water utilities operate on a larger scale and serve multiple communities, thus they have the ability to leverage economies of scale unavailable to public systems and can competitively bid operational and capital projects. Investor-owned companies maintain highly specialized staffs of scientific experts and engineers – across multiple water systems in a variety of geographic settings. This gives the private sector an edge over most public systems, and is thus well positioned and prepared to play a substantial role in meeting our nation's critical infrastructure needs.

II. Water Infrastructure Today

Our water infrastructure systems are the backbone upon which communities survive and thrive. Water service is a critical part of the physical platform of the U.S. economy. Not a single business in any community can survive, nor be established, without a sustainable water supply. Communities must have reliable and resilient water infrastructure systems to attract and retain industry, business, and qualified workers. Simply put, capital investment in water infrastructure means job creation across the country. The Associated General Contractors and the U.S. Conference of Mayors have stated that \$1 billion in water infrastructure investment will support 28,500 jobs. Clearly, water plays an essential role in any thriving community and our nation's economy.

Unfortunately, aging and deteriorating public water systems threaten economic vitality and public health, and communities nationwide are faced with massive fiscal challenges to replace critical water and wastewater infrastructure and effectively manage their systems, as was evidenced in Flint, Michigan. On average there are 650 water main breaks every day across the country and two trillion gallons of treated water is lost every year due to leaking pipes at an estimated cost of \$2.6 billion. The estimates for maintaining, replacing, upgrading and operating the nation's water infrastructure are staggering. The U.S. EPA and the Government Accountability Office (GAO) estimate that the current water infrastructure funding gap to be as high as \$1 trillion. The American Society of Civil Engineers gives U.S. water infrastructure a D grade. The nation clearly faces a significant challenge in replacing aging infrastructure. Water related services require miles of complex underground systems and extensive treatment plants. The complex nature of the water industry makes it twice as capital-intensive as electricity and three times as capital-intensive as natural gas. In this context, the importance of bringing in private capital cannot be underestimated.

EPCOR Water continues to proactively replace aging and failing water and wastewater infrastructure across its service territory. Our long-term capital investment plan includes over \$500 million dollars of investment in the next 10 years. This includes replacing drinking water wells that were originally placed into service before WWII and as far back as the Depression era. We believe that this level of investment is vital to continue to provide safe and reliable water and wastewater services to our customers.

Water systems are the most expensive asset a municipality must maintain. Many municipally owned utilities today cannot afford to improve their systems, or issue bonds to finance improvements. They have a limited taxpayer and revenue base which must service all the needs of the community, not just water and wastewater services. The expense associated with maintaining water systems is making cities not in financial difficulty consider choosing to partner with the private sector, or to sell some or all of their water systems – Miami-Dade County is one example.

Addressing these dramatic needs will require focused, dedicated and robust participation by both public and private sectors. Thus, it is important that the federal government look to all sources of capital – both public and private – to invest in water infrastructure. Federal funds alone will not bridge the growing investment gap. As Congress examines future funding for drinking water and wastewater programs, NAWC recommends that all policies be examined to ensure that the private water industry is not disadvantaged and in fact, be incentivized to add additional resources to this effort.

Challenges Bring Opportunities

The challenges we face to protect and maintain our water and wastewater systems and make the investments needed for continuing growth and new public health and environmental standards are vast, but they are not insurmountable. As the Johnson Foundation, in collaboration with American Rivers and Ceres, says in the report, “*Financing Sustainable Water Infrastructure*”, released on January 26, 2012, as part of its Charting New Water initiative:

These challenges can be viewed as drivers of much-needed change in how we finance and develop our water systems to meet future demands. New financing models and pricing flexibility, which are necessary to pay for new infrastructure and to support legacy systems, provide enormous opportunity for positive transformation necessary to keep pace with the rapid changes being experienced by counties, municipalities and investor owned utilities.

The guiding questions that the Johnson Foundation asked of the diverse group of experts it convened for the report were: 1) “What new financing techniques can communities use to pay for integrated and sustainable infrastructure approaches?” and 2) “How can we direct private capital toward more sustainable water management projects?”

III. Private Utility Role in Today’s Water Sector

The private sector is already helping the water sector in the following ways via: 1) substantial private capital investment in water; 2) the use of innovative technology, and 3) successful partnerships between the public and private sectors.

Investment

Ensuring the high standard of quality private water delivers requires extraordinary amounts of capital investment. NAWC estimates that its six largest members are collectively investing more than \$2 billion each year in their systems – and these six companies provide service to about six percent of the U.S. population. NAWC’s largest member utility, American Water, alone invested \$1.2 billion in 2015 and

plans to invest \$1.3 in 2016 in community water and wastewater systems across the country. This is significant when one notes that the total federal appropriation for the clean water and drinking water state revolving fund (SRF) programs for the current fiscal year was approximately \$2.254 billion. While a number of other financing sources and programs are being used to invest in water and wastewater infrastructure, several groups estimate that there is a significant lag in total industry spending compared to what is actually needed.

Innovations to Conserve Water and Address Supply Challenges

Effective, sustainable water supply management in the 21st century require innovative technologies, innovative strategies for long-term resource planning and regional solutions. Given that NAWC Member operate in multiple political subdivisions, and oftentimes multiple regions, they are uniquely positioned to develop such solutions. Innovative technological and regional solutions are key to addressing aging infrastructure, urbanization, resource shortages, emerging contaminants, sustainable development, demographic changes, and obtain greater value for customers, more efficient operations and less waste.

Technology.

- American Water and EPCOR Water have implemented water loss programs and leak data collection systems that actively locate leaking water services and water mains. Once identified, repairs or replacements are made immediately. By identifying and fixing water leaks quickly we can begin to reduce the waste of this precious resource.

EPCOR Water is proud to have an average water loss below 10%, which is lower water loss than most of our municipal partners. This saves money on infrastructure investment and ultimately saves money for customers.

Resource agreements to address water supply challenges.

- EPCOR Water recently entered into long-term public-private water resource agreements in Arizona and New Mexico local communities to develop a water leasing program where farmers or private well owners can sell water to EPCOR. This shifts water use from agriculture to municipal use, reducing withdrawals from strained sources and creates partnerships that share risk and expedite construction timelines for public benefit.
 - Both parties make capital investments – farmers are required to invest in their wells and EPCOR invests in the installation of transmission lines and pays the private well owner for the water, maintenance and operations of the well.

Innovative agreements like these are vital to long-term resource planning, an area of expertise for EPCOR and one of particular importance as arid states grapple with the effects of water scarcity and lingering drought. These unique programs could be replicated across the nation by leveraging the technical, operational and long-range planning expertise of investor-owned utilities.

Regional Planning.

- California Water Service (Cal Water), a large NAWC member company that has operations in multiple western states operates and maintains the distribution system of West Basin Municipal Water District's Edward C. Little Water Recycling Facility. Today, the distribution system includes approximately 100 miles of pipeline that cross multiple political subdivisions in southern Los Angeles County, and the facility itself produces about 40 million gallons of recycled water every day that is retailed to Cal Water's customers across its service area. This regional approach has worked incredibly well, and Cal Water has expanded the model and has entered into a partnership with the City of Sunnyvale, the Santa Clara Valley Water District, and Apple to bring more than 150,000 gallons per day of recycled water to the new Apple 2 Campus in Cupertino.

Maximizing the use of existing sources of supply through recycling.

- Cal Water engaged in an aggressive research strategy to identify the most cost-effective treatment technology after the state set a new chromium-6 standard for drinking water. Cal Water secured a \$5 million grant to support a full-scale demonstration of treatment utilizing strong-base anion-exchange resin to remove chromium-6 from drinking water. In addition to reducing compliance costs, the technology minimizes the amount of waste generated from the treatment process by recycling a portion of the salt brine regeneration stream. This solution saves Cal Water's customers hundreds of thousands of dollars each year, and provides water utilities across the state with a model to cost-effectively meet the state's new standard.
- The San Gabriel Valley Water Company recently established a recycled water expansion project which delivers non-potable recycled water to the City of South El Monte for large landscape irrigation purposes. This saves precious drinking water and avoids the need to purchase costly imported water from distant sources like Northern California and the Colorado River.

Partnerships with Municipalities

We know that neither government nor any one sector, whether public or private, can solve the nation's water challenges on its own. It is far more efficient to work together, and we believe the financial tools that are discussed later in this testimony will benefit us all. Incentivizing capital formation through public-private partnerships (P3s) can be a critical tool in addressing the infrastructure challenge. NAWC Members partner with municipalities in the following ways: 1) we provide management and operating services; 2) we enter into long-term lease or concession arrangements, and 3) sometimes we purchase municipal water systems.

IV. Public-Private Partnerships in the Water Sector Explained

Our member companies have longstanding experience with public-private partnerships (P3s) which deliver benefits to communities by combining the best practices, skills, assets, and resources of both government and private sectors to deliver superior water service or efficiently maintain a water facility to meet the growing demands of citizens. P3s can reduce municipal costs and shift debt burdens allowing municipalities the ability to address other important city priorities. Three basic P3 models exist in the

water space today. Under the first two models, the governmental entity contracts day-to-day management, operation and maintenance responsibility to a private partner under a fee arrangement. Private companies have entered into more than 2,000 such P3s.

- a) Servicing/Consulting Arrangements (1-5 years);
- b) Operations and Maintenance Agreements, which include qualified management contracts (5-20 years); and
- c) Long-term concession-lease agreements (30 years or longer).

Yet, due to the complicated nature of operating water systems the structuring of P3s in this space require lengthy analysis, contractual negotiations, and oversight, which can overwhelm and burden municipalities from the onset and be a significant diversion from the core services they provide to the communities they serve. There are ways to find efficiencies and reduce this burden.

Benefits of P3s with long-term lease contracts

The concession-lease agreement is a relatively new model in the U.S. water sector but has been used effectively for other types of infrastructure projects. There is a growing interest among local governments today in entering into these long-term lease agreements as a means of improving the management and financial and operational condition of their drinking and wastewater systems. Water utilities are, by far, the most capital intensive services that a local government manages and is the most expensive asset to maintain and this model offers considerable benefits to debt-constrained cities or townships. The private entity assumes responsibility for all water system operations and for providing financial capital for infrastructure maintenance and upgrades, along with an upfront payment to the city in the beginning of the contract (a fee for the real property interest in return for the right to operate the facility or system for a specified long-term period (usually 30 years or longer). The payment may consist of one upfront payment or a stream of periodic payments, such as lease rents, over the life of the agreement, which allows the local government to shore up its municipal balance sheet. At the same time, the public authority continues to retain legal ownership of the assets and contractual oversight.

- Two recent concession projects show the significant capital investments that are made in communities under these agreements. In Bayonne, NJ, SUEZ along with KKR is investing \$110 million over 40 years to modernize the city's drinking water, wastewater and storm water systems while in Rialto, CA, Veolia and its partners are investing \$41 million over 30 years in the city's drinking water and wastewater systems.

A concession agreement provides local governments with the ability to realize value from their water and wastewater assets which helps restore their budgets for other important public expenditures and allows the municipality to avoid adding to its own long-term debt obligations. All this occurs while they continue to grow their tax base since concession agreements ultimately create new jobs as a result of the water system upgrades that ensue as part of the transaction.

Given the current state of the US economy, and that infrastructure planning is deferred to state and local governments, leaders are challenged to think in new ways to improve their financial flexibility to address

other important municipal priorities and to ensure critical infrastructure investment in their water systems. To do this, they look to the private sector for assistance. Municipalities sometimes make a determination that their water service can be provided more effectively either by selling to or partnering with a private water company that has greater resources and expertise and thus is more efficient than the municipality in providing the same service

Barriers to P3s with long-term contracts

Current tax rules and regulations have the practical effect of barring many municipalities from entering into cost saving and efficiency driven partnerships with private water companies for the operation of municipal water supply and treatment facilities. These tax regulations can impose a significant added financial price tag to long-term concession transactions on municipalities that sell or lease their water system to a private company when the municipality has outstanding tax-exempt debt related to the water system. As a general rule, the tax exemption on such bonds is lost if a private-sector business acquires a long-term interest in the project. A long-term concession arrangement is designated by the IRS as “private business use”. When a municipality has outstanding tax exempt debt on the water system such “private business use” designation triggers a loss of tax exempt status on the bonds – i.e., tax on interest received by the bondholders. This means that the tax exempt status of the debt would shift to a taxable status, and the interest on that debt becomes taxable. It is this shift which causes the price of an otherwise beneficial transaction to become 15-20 percent higher.

Treasury rules offer alternative approaches or remedial actions that could be taken to avoid shifting the tax exempt debt to taxable status. However, these approaches were developed 3 decades ago and they are infeasible in today’s economic environment.

Alternative Approaches Under Current IRS Rules Not Feasible Today

Defeasance. One such alternative approach is referred to as “defeasance”. The defeasance remedy, however, was established decades ago when interest rates were higher; but in today’s low-interest-rate environment it is prohibitively expensive as it requires outlays of 15-20 percent more of the outstanding principal amount of the bonds. This issue is discussed more thoroughly in Section V under Recommendation 2.

Issuing private activity bonds (PABs). Another remedy Treasury offers for avoiding the shift to taxable status is to obtain from the state an allocation of PABs sufficient to cover the principal amount of the outstanding bonds. PABs are municipal bonds secured by facilities in which a private business has a significant interest; such bonds are under a state volume cap. This means there is no assurance that at the time a municipality starts planning and negotiating a P3 transaction—which can take 2-4 years from start to finish—a sufficient allocation of PABs (which are under volume cap) will be available when the transaction is completed. Thus, the volume cap requirement can be an insurmountable hurdle to the long-term P3 arrangement. Further, in certain states the applicable volume cap allocation legislation or process seems not to permit volume cap to be used for bonds previously issued as regular municipal bonds. Thus, even though the volume cap has, for the most part, been plentiful in recent years in many states, there is no assurance at the time of the P3 decision-making process that there will be sufficient volume of PABs

available for the municipality in order to make its “go or no go” decision. The problem with a volume cap on PABs for water projects is discussed more thoroughly in Section V under Recommendation 1.

V. Federal Role in Stimulating Investment in Water

Although 98 percent of investment in water is made at the local level, federal policy plays an important role in establishing incentives for water investment. Congress and the Administration can act to remove barriers to unleash the vast potential of private capital in much-needed water infrastructure improvement projects. NAWC believes the fundamental goal of any federal program should be to fill market gaps and leverage federal funds and private co-investment to provide additional investment in America’s water infrastructure. All federal program supporting local drinking water and wastewater systems should require that the project be procured and delivered efficiently on a life-cycle basis and delivers the greatest value for the money invested by federal taxpayers. Below are five recommendations that could release private capital and allow for more efficient partnerships to go forward. NAWC seeks two principal tax code changes. Both play a supporting role in engaging in productive and beneficial public-private partnerships (P3s).

Recommendation 1:

Remove state volume caps on private activity bonds (PABs) for water projects

One of the most effective financing tools of the federal government for long-term, capital-intensive infrastructure projects is the private activity bond (PAB)—tax exempt financing granted to the private sector for public-purpose projects, like water. The PAB is a critical tool water and wastewater systems need and use for drinking water and wastewater projects. PABs make infrastructure repair and construction more affordable for municipalities and ultimately for users or customers. The use of PABs spurs capital investment in public projects during a time when governmental budgets are tight; and investors prefer PABs because interest accrues tax-free.

The Sustainable Water Infrastructure Investment Act (introduced in the 114th Congress as S. 2606) recently introduced in the Senate by Senators Menendez and Crapo would remove water projects from state volume caps for private activity bonds and thus spur increased private investment in systems throughout the country. A removal on bond caps for water projects will bring financing of this piece of the nation’s critical infrastructure in line with airports, high-speed rail and solid waste disposal, all of which are currently exempt from existing caps. This same legislation received extraordinary bipartisan support in the 112th Congress, garnering 101 bipartisan co-sponsors spanning the full political ideological spectrum, and was supported by dozens of business and other groups from the Clean Water Council to the U.S. Chamber of Commerce to Operating Engineers and Laborers’ Unions and the U.S. Conference of Mayors because of the measure’s undeniable merit.

The economic and public health benefits of using PABs for water and wastewater infrastructure improvement projects are noteworthy.

- Generates \$2 billion in new investment each of the first few years and grow to several times that as the market opens up.
- Increased state and local tax revenue up \$400-500 million.
- Increased jobs up to 142,500 in the first 2-3 years.
- Minimal cost to the federal government: only \$354 million over 10 years.

NAWC believes that greater access to PABs by removing state volume caps for PABs used for community water projects is an approach that makes considerable sense.

Recommendation 2:

Clarify Internal Revenue Code (avoid defeasance) for Beneficial P3s

Most municipal infrastructure projects are financed by tax-exempt municipal bonds. As a general rule, the tax exemption on such bonds is lost if a private-sector business acquires a long-term interest in the project. However, the IRS has issued rules meant to give state and local governments a reasonable path for preserving the tax-exempt status of these bonds in such an event; though governments can take certain prescribed remedial actions to preserve the tax exemption. Unfortunately, as currently drafted, these remedies are not practicable for water utility projects and, thereby, deter beneficial water P3 projects.

Remedies to preserve tax-exempt bond status under Section 141

- a) One remedial action is to reissue the outstanding bonds as private activity bonds; but the tax code places an annual volume cap on such bonds and a state may have no available volume.
- b) A second remedial action is defeasance of the bonds, but defeasance is prohibitively expensive in the current low interest rate environment; defeasance imposes costs of up to 15-20 percent of the project costs.
- c) The third remedy is for the state or local government to use all cash proceeds received in the transaction from a sale of a bond-financed water system only for other public purposes, such as other infrastructure needs.

Only the third remedial action is realistic, but Treasury guidance is needed to clarify that cash proceeds from a P3 transaction—such as a concession/lease agreement—would also qualify under this action. The Treasury rules currently refer only to the disposition of proceeds from a sale, but not from a lease.

NAWC seeks a narrowly tailored modification to the third remedial action under Section 141 of the Internal Revenue Code. Specifically, NAWC has asked Treasury to revise its rules under the third remedy to provide that long-term concession agreements also be included in the description of cash proceeds. (The Treasury already applies such a rule in the case of the sale of bond-financed water systems.) NAWC simply requests that this remedy also apply to long-term leases (as upfront cash payments are usually the norm in these arrangements). Thus, as long as the municipality in a P3 uses any of the funds it receives in the transaction for governmental services or investments, the bonds can remain outstanding and remain tax exempt (thus avoiding defeasement). We believe this change can be done in a manner that reasonably protects the tax policy concerns of the Treasury.

Recommendation 3:
State Revolving Funds and Eligibility

NAWC supports the State Revolving Fund (SRF) program. However, we strongly hold that any federal program be established fairly so that all taxpayers benefit. Since drinking and waste water systems are a necessary public good and serve the public, the taxpayers in territories serviced by private water providers should benefit equally from the same government loan and grant programs extended to municipally owned water systems. Currently, private water utilities are limited in their use of Clean Water SRF funding. Although EPA has construed the 2014 WRRDA amendments to allow limited use of CWSRF funding for “resiliency” projects by private utilities, these amendments did not put to rest the long-standing discrepancy pertaining to private utilities’ access to CWSRF funding for centralized wastewater treatment.

We, therefore, ask Congress to fix this arbitrary and unnecessary impediment that, if removed, would help to support many communities struggling to maintain their aging water infrastructure. Moreover, while the Safe Drinking Water Act gives states the option to make private water utilities eligible for the Drinking Water SRF, nearly half the states have not done so. We believe that the Congress and the EPA should encourage and incentivize them to do so.

Recommendation 4:
WIFIA

The 113th Congress approved an innovative financing approach for large water infrastructure projects via a pilot program under the Water Resources Reform and Development Act of 2014 (WRRDA), known as the Water Infrastructure Finance and Innovation Authority (WIFIA). A primary objective of this new program is to attract private capital to these projects, to be used along with state and local capital and a low-cost federal subsidy loan. NAWC believes this program will be truly innovative if it is implemented to encourage and facilitate significant new private investment in the nation’s water infrastructure. The aim is to lower the cost of water infrastructure investment by increasing availability of lower-cost capital to public and private utilities.

NAWC believes that both private companies should have an equal opportunity to participate in the program, to ensure that financing is adequately leveraged.

Recommendation 5:
Centralized Office to Navigate the Complex P3 Terrain

The EPA’s new Water Infrastructure and Resiliency Financing Center, for example, which was established to provide technical advisory assistance and professional services to assist small and rural municipalities and to link them up with potential private investors, might take Canada’s approach by expanding this Center’s focus to also advise on P3 formation. The Canadian P3 office has enabled Canada’s P3 landscape to evolve considerably. The office provides a source of P3 expertise to help navigate the complexities of P3s and has thus produced greater competition and lower costs for those entities in the public sector

entering into partnerships with private entities. As a result, Canada has become one of the more significant P3 geographies in both volume and size of capital transactions. NAWC believes it may be advantageous to consider expanding the EPA Water Finance Center to also address P3s.

Mr. Chairman and Members of the Committee – thank you again for inviting the National Association of Water Companies to testify today. Water infrastructure is critical to our economy and way of life. With your leadership on this issue, I am confident we will continue to make progress towards meeting the immense drinking water and wastewater needs across this country. The private water industry stands ready to partner with you and our industry colleagues seated with me at the table today, and I'm happy to answer any questions you may have.

Senator INHOFE. Very good. Thank you.
Mr. Olson is the Director of the Health Program for the Natural Resources Defense Council.
Mr. Olson.

**STATEMENT OF ERIK OLSON, DIRECTOR, HEALTH PROGRAM,
NATURAL RESOURCES DEFENSE COUNCIL**

Mr. OLSON. Thank you, Chairman Inhofe, and thank you, Senator Boxer and other members of the committee. It is an honor to testify this morning on behalf of the 2 million members and activists at the Natural Resources Defense Council, and I wanted to summarize. It has been more than 30 years I have been working on drinking water and water infrastructure issues, and we have been talking about deferred maintenance, about the failure to upgrade treatment and upgrade technology, steady deterioration of our water supply for many, many years; and I find myself in agreement, actually, with several of the points that have been made earlier, that we really need to be making these investments.

We have long known that wastewater and drinking water infrastructure are deteriorating, and frankly the chickens are coming home to roost. Where we are now is that what we have all taken for granted, which is safe drinking water, we can't really consider a given any longer. Flint really does remind us that the penny wise and pound foolish decisions to save a few bucks by not investing in our water infrastructure can really come home and harm public health, as well as harming the economy, and really erode public trust.

I think in these debates sometimes it is easy to forget the impacts of these decisions on real people, and this really came home to me a week or so ago when we were working on behalf of some of the citizens in Flint, and we were working with one mom, her name is Miriam. Her husband and her two kids live in Flint, and she has lived there most of her life, and when the water was switched in 2014 in Flint, she noticed that the water started to smell like rotten eggs, that it tasted awful, that it was brown. She wondered about it. They switched over to bottled water, but public officials kept saying, no, it is perfectly safe, don't worry about it, so they went back to tap water. It was really expensive. They are not wealthy people, and they switched back to tap water.

Unfortunately, Miriam's family started to suffer from some adverse health effects. In June 2014, Miriam had a miscarriage. She had never had a miscarriage before. She started getting skin rashes. Clumps of her hair started to fall out. A doctor prescribed treatments for her hair loss, which helped a little bit, but her skin rash continued. Her husband also had skin rashes and hair loss. Her son, who is 13, had a bad outbreak of eczema sores all across his back, and this happened after the water change, and it got far worse than it had ever been. They stopped using the Flint water for bathing and his skin rashes disappeared.

Miriam read that lead contamination can be linked to miscarriages and to complications in pregnancy, and she told us, "Just not knowing whether lead exposure may have caused my miscarriage is really painful." She worried about the possible health effects on IQ of her children and on their ability to learn, and she's

really worried about continuing to have to use bottled water for all of their purposes, for cooking and drinking. She takes her kids to her parents, who are on a different water supply, just to go bathing, which is quite an inconvenience. She says it has really taken an emotional toll on her family.

So the reason I mention this is that it is really easy in these policy debates to forget that we are really dealing with real people who are adversely affected. And unfortunately, we have a widespread problem with lack of investment in water infrastructure.

I think a lot of water utilities have done a fantastic job in improving our water infrastructure, but we have huge challenges. We do not want a two-tiered water system where wealthy people get good water that is clean and safe, and poor people get crummy water that is threatening their health. We have a real backlog, as we have heard, of investment in water infrastructure. We really need to fix this problem fast.

Infrastructure investments, the good news is, create a lot of good jobs, and we strongly support, as our testimony highlights, investments in this area.

I wanted to also point out that there are ways we can reduce the cost for citizens that are paying for water bills. I lay out several of them in the testimony, including protecting the water before it gets contaminated so polluters are paying to clean up, rather than consumers paying to take those contaminants out of their water. The National Drinking Water Advisory Council and Affordability Group, which I served on, had several recommendations, including low income water assistance program, affordable rates for low income consumers, targeted compliance assistance, and increased funding.

I realize my time is almost out, so I will just highlight the seven recommendations very briefly that we have in the testimony.

First, we need to fix Flint's infrastructure. We support Senator Stabenow et al.'s bill, 2579; second, we need to really invest in our water infrastructure. We support Senator Cardin's bill that would increase State Revolving Fund funding. We need to fix our source water protections; we need to address small system regionalization to cut costs; fix the lead and copper rule; and, finally, let citizens act immediately when there is an imminent and substantial endangerment to their health.

Thank you very much for the opportunity to testify. It is an honor.

[The prepared statement of Mr. Olson follows:]



**TESTIMONY OF
ERIK D. OLSON
DIRECTOR, HEALTH PROGRAM
NATURAL RESOURCES DEFENSE COUNCIL**

**BEFORE THE
SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
HEARING ENTITLED
"THE FEDERAL ROLE IN KEEPING WATER
AND WASTEWATER INFRASTRUCTURE AFFORDABLE"
APRIL 7, 2016**

Good morning Chairman Inhofe, Ranking Member Boxer, and members of the Committee. I am Erik D. Olson, Director of the Health Program at the Natural Resources Defense Council (NRDC). I have been fighting to improve our drinking water, clean water, and water infrastructure while working for NRDC, EPA, other nonprofits, and as a staffer for this Committee, for more than 30 years. I was deeply involved in the enactment of the 1996 Safe Drinking Water Act Amendments, and was an active participant in the debate over the 1986 Amendments to the Act. I appreciate the opportunity to testify today.

Deferred maintenance and the steady deterioration of the nation's water and wastewater infrastructure has been known to be a serious challenge for decades.¹ Calls have been made for well over two decades for modernization of the nation's often-aging and outdated drinking water treatment plants and distribution systems.² Similarly, we have long known that our wastewater and storm water treatment and collection systems are badly in need of updating. But the chickens are now coming home to roost.

As the drinking water crisis in Flint, Michigan has now brought into national focus, the safe drinking water that we all take for granted in the United States can no longer be considered a given. There are major public health and economic impacts flowing from our failure to make appropriate decisions and failure to invest in infrastructure.

In Flint, state-appointed officials decided to save a few million dollars by switching from Lake Huron-supplied Detroit city water, to the polluted and corrosive water of the Flint

River that wasn't treated to control corrosion. The results have been widely reported: serious corrosion damage to the city's already-challenged water pipes and infrastructure, and a string of public health crises including first bacterial contamination, followed by a violation of the standard for cancer-causing disinfection byproducts due to inappropriate disinfection practices, and a serious problem with lead contamination leaching from thousands of lead service lines because of the corrosive water.

Flint reminds us that penny-wise, pound-foolish decisions to save a few bucks can have huge costs to public health, enormous economic costs, and a corrosive impact on public trust of government.

The Human Dimension

We should make no mistake: while these infrastructure problems are usually out of sight and out of mind, they can have very real impacts on people. This has come home to me as we have been legally representing local citizens from Flint who are directly affected by that disaster.

As an example, let me briefly tell you what happened to Maryum, a mother in Flint whose family's water was seriously contaminated. She, her husband, and two children noticed in 2014 that their water "smelled like rotten eggs," tasted bad, and was brown. They switched to bottled water. But after a month of hearing reassurances of the water's safety from government officials, and because using bottled water was expensive and inconvenient, they went back to tap water.

During this time, Maryum's family suffered from a number of health effects. In June 2014, she had a miscarriage; she had no history of miscarriages. She developed a skin rash, began to get headaches, and "clumps of my hair began to fall out." Her doctor prescribed treatments which helped with hair loss somewhat, but she continues to be unable to get rid of a skin rash. Her husband also experienced skin rash and hair loss. Her son had a bad outbreak of eczema sores on his back after the water change, worse than he had ever had. When they stopped using Flint water for bathing, his skin improved.

Maryum says she has read that lead contamination can cause pregnancy complications including miscarriages, and that "just not knowing whether lead exposure may have caused my miscarriage is painful." She worries about the possible effects of lead contamination on her kids. Since December 2015, her family has only used bottled water. For a long time, there were lines and waits for water at distribution point at the fire station. Obviously, picking up and having to rely on bottled water also is very inconvenient. She takes her kids to her parents' house for bathing, which is on a different water system. She says the water crisis has "taken an emotional toll" on her and her family.

Widespread Health & Environmental Risks from Inadequate Water Infrastructure

Maryum's story is just one of thousands of similar stories in Flint. Her experience and that of other Flint residents illustrate the perils of focusing just on cutting costs and failing to focus on public health and on updating water infrastructure.

They also highlight that EPA cannot shrink from its oversight responsibilities under the Safe Drinking Water Act. When a primacy state is failing to ensure that the health of citizens is being protected from tap water contamination, it is EPA's obligation to use its oversight authority. While certainly EPA ideally should maintain a cooperative relationship with states, the agency's paramount obligation is to safeguard the public's health. If a state is not doing its job to swiftly address issues that are causing violations or threatening public health, EPA must promptly intervene and take enforcement action, rather than simply deferring to the state as a "partner" when the public is at risk.

Unfortunately, stories of contaminated water are not limited to Flint, although that may be an extreme example. Drinking water contamination incidents from lead, and from many other contaminants, are all too common. For example, according to EPA's most recent annual compliance report for public water systems, there were 16,802 "significant violations" of EPA's drinking water standards.³ The most common of these more than 16,000 violations were:

- Total coliform bacteria contamination, representing 48 percent of the significant health standard violations;
- Chemical contamination with synthetic organic, volatile organic, inorganic (except lead and copper) and radioactive contaminants, representing 22 percent of significant health standard violations;
- Lead and copper treatment technique violations, representing 5 percent of the significant violations;
- Disinfection byproduct contamination, representing 13 percent of the significant violations;
- Surface water treatment requirements (to control pathogens like *Cryptosporidium* and *Giardia*), representing 7 percent of the significant violations; and
- Ground water treatment requirements (to control for pathogens and fecal contaminants such as certain bacteria and viruses), which comprise 6 percent of the significant violations.⁴

Thus, although many water utilities certainly have made substantial progress in recent years in improving treatment, in too many cases the public is drinking water containing contaminants that are posing serious health risks. The public health threat from our failure to invest in our water infrastructure is enormous, including from lead, arsenic, bacteria and other pathogens, cancer-causing disinfection byproducts, the rocket fuel component perchlorate (which EPA has said contaminates as many as 16 million Americans' drinking

water systems, but which the agency still has not regulated), and many other contaminants, regulated and unregulated.

Moreover, our wastewater and storm water collection and treatment systems also are too often not up to the task. Combined sewer overflows (CSOs) are common, when domestic sewage mixes with collected storm water in combined sewers and during precipitation events, causes raw or minimally treated sewage to flow into lakes and streams. CSOs are, according to EPA, “a major water pollution concern for the approximately 772 cities in the U.S. that have combined sewer systems.”⁵ These CSOs and other shortcomings in our wastewater and storm water systems are often causing sewage contamination of drinking water source waters, beaches, and sensitive ecosystems.

Disproportionate Impacts of Infrastructure Inadequacies in Low-Income Communities, and Communities of Color

As is well-known, the Flint community is predominantly African American (57%) and has a high percentage of residents living at or below the poverty line (over 40%), or who are working but struggling to make ends meet. State officials were “callous and dismissive” of the concerns these citizens raised about the water, according to the governor’s independent Task Force on Flint.⁶

The obfuscation by government officials, and the denigration of community members and experts who raised concerns, illustrates a pressing nationwide problem. Communities of color all over this country often bear the burden of environmental contamination and the resulting health problems.

In recent years a series of peer-reviewed studies also have documented that unsafe drinking water often is disproportionately associated with lower-income communities of color.⁷ Examples include nitrate and other contaminants in drinking water in California’s San Joaquin Valley, contamination and substandard water infrastructure in U.S.-Mexico border *colonias* and some minority communities in certain Southern rural areas, and bacteriological and chemical contamination on some Native American lands.⁸ Balazs et al. have established that in areas of California “race/ethnicity and socioeconomic class were correlated with exposure to nitrate and arsenic contamination and noncompliance with federal standards in community water systems.”⁹

The Flint case is not an anomaly. There is a wide array of factors, including lack of access of lower income communities of color to resources and government political attention, that help to create a disproportionate and “persistent drinking water burden” in these communities.¹⁰ In sum, researchers have found that “unequal access to infrastructure drives unequal access to safe drinking water.”¹¹

No Two-Tiered Drinking Water System: Every American Deserves Safe Water

As Flint and many other examples highlight, there are clear challenges to ensuring that every American gets safe drinking water. We don't want to create a two-tiered system where the wealthy get water that is clean and safe for their families, and the less well-to-do get second-class water that poses risks to their health.

Thus, we need to create an infrastructure investment and structuring system that ensures that communities that cannot afford to upgrade their water infrastructure get a helping hand. Below, I discuss some of the recommendations of the National Drinking Water Advisory Council's Affordability Work Group, which toiled for many months to develop ideas for how to address affordability concerns.¹² Among other ideas, the Work Group recommended the creation of Low Income Water Assistance Program (LIWAP), modeled after the Low Income Heating and Energy Assistance Program (LIHEAP), which would help lower-income people afford their water bills if needed. Thus, rather than providing substandard water, all consumers should get top quality tap water, with some assistance to low income people if necessary. At bottom, the question is not how do we make water cheap, but how do we make it so everyone can afford clean, safe water for their families?

The Backlog of Overdue Investments in Infrastructure

There is a huge backlog of overdue investments in the nation's water infrastructure. The American Society of Civil Engineers (ASCE) has been ringing the alarm bell about our water infrastructure since at least 2001¹³, with its troubling report cards giving our water and wastewater infrastructure a grade of "D" or worse every four years.¹⁴ The engineers highlight serious problems that result from the lack of investment in our water infrastructure, noting that pipes and mains are often 100 years old and nearing the end of their useful life, causing frequent pipe failures and other problems.

The evidence of these problems is widespread. For example, there are about 240,000 water main breaks per year due to deteriorating and poorly-maintained underground drinking water pipes.¹⁵ Even more water is lost to unseen leaks and breaks that never reach the surface. Water losses waste not only enormous amounts of this precious resource, but they also can cause serious damage to roads and property, they can pose significant public health risks. For example, particularly when water mains are close in proximity to sewer lines, fecal contamination can get into the drinking water after a rupture or pressure loss, posing a threat of causing a waterborne disease outbreak.

In many cities, underground pipes are often a century old or more, and in too many cases municipalities are on track to take 200 years to replace their aging pipes.

We routinely lose an average of 14 to 18 percent of our drinking water to leaking underground pipes,¹⁶ although this is just an estimate, since standardized auditing and reporting of water losses is not required in most states.¹⁷ In some cases, such as Flint, water loss rates of 40 percent or more have been estimated. These leaks represent an enormous waste of water, energy, treatment chemicals, and money used to collect, treat, and pump the water. Moreover, points of leakage of any size can provide pathways for contaminants to enter the water system during short-term pressure fluctuations, known as “transients.” Thus, leaks can cause water pressure losses, which can, much like catastrophic pressure failures from water main breaks, allow pathogens to get into the drinking water, posing health risks. Improved pressure management is an important component of both infrastructure stewardship and public health protection.

Of course, as Flint also highlights, lead service lines are a significant remaining problem. Water industry experts recently published an estimate that there are over 6 million lead service lines still in use in the United States, serving 15 to 22 million people.¹⁸ While innovative techniques such as those being used in Lansing, Michigan have shown us ways to cut the cost of replacing these lead service lines, millions of them remain in the ground, posing a risk that at any time lead may leach from them into the water.

We applaud the American Water Works Association (AWWA), the nation’s largest drinking water utility trade association, for their support for complete removal of lead service lines across the country, recently announced by their Board of Directors.¹⁹ We agree that such replacement is needed as soon as possible, to mitigate or avoid more lead contamination incidents across the country. We have not derived a national cost estimate for such replacements, though recent lower-cost techniques for lead service line replacement such as those used in Lansing and elsewhere demonstrate that innovative approaches are bringing costs down.

The American Water Works Association estimates that it will cost \$1 trillion dollars to upgrade, repair and maintain our drinking water infrastructure to serve the population as it grows over the next 25 years.²⁰ Unfortunately, funding for drinking water infrastructure is not keeping pace with the needs. In recent years, Congress has appropriated about \$2.37 billion a year for water and wastewater infrastructure combined, funding a tiny fraction of the work needed.²¹ While states and localities will need to bear much of the water infrastructure costs as they have for generations, the current federal investment is not making a dent in the problem.

Infrastructure Investment Creates Good Jobs

The good news is that investing in our water infrastructure not only helps to rebuild the base of the nation's economy, which is highly dependent upon reliable, safe drinking water and wastewater service. But major investment in water infrastructure also will create hundreds of thousands or even millions of good-paying jobs.

A recent study found that an investment of \$188.4 billion in water infrastructure (an EPA estimate of wastewater-related infrastructure needs) spread equally over five years would generate \$265.6 billion in economic activity and create close to 1.9 million jobs.²² The study found, based on the economics literature, that such infrastructure investments "create over 16 percent more jobs dollar-for-dollar than a payroll tax holiday, nearly 40 percent more jobs than an across-the-board tax cut, and over five times as many jobs as temporary business tax cuts."²³

Protection of Water Sources Helps to Protect Health and Reduces Treatment Costs

We need a greater focus on source water protection. Ben Franklin's aphorism that "a penny saved is a penny earned" was never so true as it is in this case. Uncontrolled or poorly-controlled source water pollution from polluters remains a serious problem. Unregulated or poorly-controlled sources that can pose substantial pollution threats include agricultural runoff and factory farm pollution, groundwater and surface water pollution from oil and gas exploration and development, coal and mineral mining, certain industrial sources, and spills and leaks from above-ground hazardous substance tanks. State authorities and EPA could substantially reduce the public health and environmental threats from such polluters, and could reduce the costs of drinking water treatment, by better controlling these pollution sources.

The experience of Des Moines Water Works, which serves 500,000 Iowans with their tap water, is illustrative of how state or EPA intervention to ensure that source water is protected from upstream agricultural pollution could help to keep rates more affordable. As a recent statement from Des Moines Water Works notes,

Des Moines Water Works meets or exceeds regulatory requirements for drinking water established by the United States Environmental Protection Agency.... However, the costs and risks in doing so are increasingly high as Iowa's surface waters demonstrate dangerous levels of pollutants.

The increase in river nitrate levels is attributable to upstream agricultural land uses, with the largest contribution made by application of fertilizer to row crops,

intensified by unregulated discharge of nitrate into the rivers through artificial subsurface drainage systems.

“Iowa’s political leadership, with influence from industrial agriculture and commodity groups, continue to deny Iowa’s water quality crisis,” said Bill Stowe, CEO and General Manager, Des Moines Water Works. “Defending the status quo, avoiding regulation of any form, and offering the illusion of progress and collaboration, places the public health of our water consumers at the mercy of upstream agriculture and continues to cost our customers millions of dollars.”

Des Moines Water Works seeks relief against upstream polluters and agricultural accountability for passing production costs downstream and endangering drinking water sources. In addition, Des Moines Water Works is actively planning for capital investments of \$80 million, a cost funded by ratepayers, for new denitrification technology in order to remove nitrate and continue to provide safe drinking water to a growing central Iowa.²⁴

While Des Moines may be unusual for its candor, its problems with unregulated or poorly-regulated upstream pollution are hardly so. Problems ranging from routine spills of industrial pollutants on the Ohio River that have led Cincinnati and Louisville to install advanced water treatment facilities at significant expense to ratepayers, are also illustrative.

Similarly, EPA has failed to effectively regulate runoff of the widely-used herbicide atrazine which has caused drinking water systems across the country to find the chemical in their water, often at levels in excess of EPA’s standard during peak runoff season.²⁵ In light of EPA’s and states’ failure to control this problem, a large group of water suppliers sued Syngenta, the manufacturer of atrazine, because they were routinely being required to spend significant amounts to remove the chemical from their tap water.²⁶ They reportedly settled the case for \$105 million dollars, and according to lawyers involved as many as 3,000 water utilities may be eligible to recoup at least some of their treatment costs.²⁷

Another example, upon which this Committee held a hearing on February 4, 2014, was the spill/leak of toxic chemicals from a huge above-ground tank at Freedom Industries that contaminated the drinking water of 300,000 people in Charleston, West Virginia in January of that year.²⁸ EPA had been charged in the 1972 Clean Water Act with issuing rules to prevent spills and leaks from above-ground tanks storing hazardous substances, but has still not done so. Citizen organizations and NRDC recently entered into a consent decree with EPA to have the agency finally issue those long-overdue rules²⁹, though the list of hazardous substances required to be covered by such rules still has not been updated to include the chemicals that caused the Charleston disaster.

Many other municipalities have been forced to quietly install treatment to remove or protect against potential contamination from other contaminants from upstream polluters, without recourse against the polluters. A far better approach would be for Congress, EPA and states to crack down on uncontrolled or poorly-regulated pollution sources such as agricultural runoff and factory farms, mining, and oil and gas activities, to save ratepayers the expense of cleaning up after the polluters.

Protecting Waters of the United States Will Help Control Infrastructure Costs

As a result of confusing court decisions, millions of miles of streams and tens of millions of acres of wetlands lacked clear protection under the Clean Water Act. As a result, water sources that feed drinking water supplies for 117 million Americans were vulnerable to pollution. So were wetlands that filter contaminants and recharge groundwater supplies, while also providing important flood protection and wildlife habitat. If these waters are not protected against pollution by the Clean Water Act, downstream drinking water systems will have a very heavy burden of cleaning up the water to remove the contaminants, costs that—as in the case of Des Moines and so many other utilities—will be borne by ratepayers rather than the polluters.

EPA and Army Corps of Engineers finalized the “Clean Water Rule” in May 2015, which helps to clarify which waters were protected under the act—about 60 percent of the nation's bodies of water. The new rule helps to protect a variety of streams, ponds, and wetlands, including those streams that one in three Americans relies on for drinking water. It is important that we continue to protect these waters for current and future generations.

Restructuring and Encouraging Cooperation Among Small Systems Cuts Costs

Some states, including Kentucky and Connecticut, have made a major effort to encourage cooperation, regionalization, and in some cases physical or managerial consolidation, of small water systems.³⁰ Basically, this involves a broad range of approaches including:

- Ensuring that managers and staff from small water systems are in regular communication and cooperating with other utilities in order to learn ways to address compliance and infrastructure challenges as efficiently and effectively as possible; or
- Regionalizing management of multiple small systems so that overhead is reduced, expertise can be shared, and duplication of functions minimized; or
- Actual physical interconnection and consolidation of the pipes of multiple small systems to make them into a single system. These approaches can take advantage of

the economies of scale, and reduce costs and often improve compliance and water quality and reliability for customers served by small systems.³¹

EPA has studied this approach extensively. In many cases it is highly effective at improving compliance and reducing costs.

Increasing Challenges to Water Infrastructure from Extreme Weather, Droughts

With increasing challenges from extreme precipitation events, droughts, groundwater depletion, and saltwater intrusion in many coastal areas, our water infrastructure faces new and often unprecedented risks. We see this in the impacts of the California and Midwestern droughts, the steady depletion of the Ogallala Aquifer, and the intrusion of saltwater into the wells used for drinking water in many coastal areas in Florida and California, for example.

It has become crucial for water utilities to plan for these challenges by integrating their water and wastewater planning through approaches such as using “integrated water resources management” or IWRM. Some have referred to this approach as “sustainable integrated water management.” IWRM is “a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”³² Such integrated planning will become crucial as the impacts of climate change and other challenges become increasingly serious.

The National Drinking Water Advisory Council Affordability Recommendations

I had the honor to participate in an extensive and exhaustive process of discussing the best ways of ensuring that water bills are affordable, while not compromising public health. The National Drinking Water Advisory Council’s Affordability Work Group, which included state and local officials, drinking water utilities, NGOs, financing experts, and others, made extensive recommendations which we do not have time to go into here, but which I commend to members of the Committee.³³ Among the key recommendations³⁴ were:

- **Affordability Rates.** “EPA should provide information and examples pertaining to the use of affordability rates [for low-income customers] for systems to help make water affordable to low-income households. ... [A]ffordability rates can be an effective tool for many systems, both large and small, to allow for infrastructure improvements needed to meet regulatory requirements without the need for variance technologies. By EPA providing information and examples of such rate-making ideas to water systems, more systems may take advantage of this tool.”

- **Low Income Water Assistance Program.** Congress should adopt a “Low Income Water Assistance Program (LIWAP) as a means to assist low income households facing high drinking water costs, funded with Congressional appropriations similar to the funding for LIHEAP.”
- **Increased SRF Funding.** “DWSRF funding should be increased, with special consideration given to assisting small systems. In order to lessen the need for variance technologies, additional funding for the DWSRF, targeted to small systems, would be effective.”
- **State Disadvantaged Community Programs.** “EPA should encourage States that have not already done so, to establish a disadvantaged community program to address small system affordability issues. Such funding should be consistent with the principles in the DWSRF to encourage restructuring where viable.”
- **Targeted Compliance Assistance Funding.** “To ensure the most effective use of grant funding to help achieve affordable safe drinking water, targeting compliance assistance funding to the systems most in need should be a priority. It is important, however, that grants not be given to disadvantaged systems that, after the grant, will not have managerial, technical, and financial capacity to operate over the long term. Since restructuring can be the most effective tool in ensuring such long-term capacity, priority should be given to using the funds for such restructuring purposes.”
- **Funding Beyond SRFs.** “Provide additional funding beyond the current DWSRF funding for small systems to adopt cooperative strategies as broadly defined.... Cooperation between small systems can take many forms. It is one of the best methods for allowing small systems to achieve financial, managerial, and technical capacity for long-term sustainability as well as to meet compliance requirements without the need to use variance technologies.”
- **Other Federal Agency Funding.** “Explore and consider the use of other state and federal agencies, such as the U.S. Army Corps of Engineers and the Bureau of Reclamation, to assist small drinking water-related projects.”
- **State leadership to promote cooperation among small systems to cut costs.** “Cooperative efforts designed for an area or regions are essential if the cost of compliance is to be reduced. These efforts should be funded through new appropriations or through re-allocation of a portion of DWSRF funds....”
- **“Offering meaningful incentives for assessing whether cooperative efforts are feasible** and limiting financial and technical support for individual system compliance solutions to small systems that have assessed cooperative options and found them to be infeasible or not cost-effective.”

EPA’s “Four Pillars” to Promoting Sustainable Water Infrastructure

Under the George W. Bush Administration, in 2007 EPA developed what it called a “Four Pillars” approach to promoting sustainable water infrastructure, which generally is consistent with the principles espoused in this testimony. This approach includes:

1. **Better management:** “Widespread adoption of better management practices offers great promise to reduce costs and direct system investments using a risk-based approach.”
2. **Full cost pricing:** “Pricing that recovers the costs of building, operating, and maintaining a system is absolutely essential to achieving sustainability. Drinking water and wastewater utilities must be able to price water to reflect the full costs of treatment and delivery.”
3. **Water efficiency:** “EPA is focused on developing a program that takes a broad approach by setting water efficiency levels for products, in conjunction with manufacturers, utilities and other stakeholders; building partnerships with manufacturers, distributors, utilities and others to promote water efficient products; and promoting an ethic of water efficiency through promotional activities.”
4. **Watershed approaches:** “One of EPA’s highest priorities is using a watershed approach to address our impaired waters.... The focus is on making sound infrastructure and growth decisions within the context of how water flows through a watershed. Our success at restoring and protecting impaired waters requires strong partnerships between federal, state, and local governments. “

EPA emphasized that the tools available to assist communities in affording infrastructure include grants, loans, state financial assistance programs, institutional arrangements, electronic services, fees, and bonds.

Recommendations

There is an emerging bipartisan consensus that we need to increase our investment in infrastructure. NRDC has several recommendations for improving federal water infrastructure investments and controlling costs of such investments:

1. **Fix Flint.** Flint’s water infrastructure must be immediately repaired and replaced, and safe, reliable water (i.e. bottled water delivered to residents until tap water is fully confirmed as reliably safe) must be supplied in the meantime. In addition, we support the recommendations of the independent Flint Water Advisory Task Force, including the recommendation that there be a tracking system to ensure ongoing health protection for those exposed, and follow-up studies, treatment, and educational and nutritional intervention, among other important steps.³⁵ We also support the package of proposals included in Senator Stabenow and colleagues in the Drinking Water Safety and Infrastructure Act (S. 2579), including provision of urgently-needed resources for infrastructure improvements.

2. **Fix our National Water Infrastructure, Paying Special Attention to the Needs of Lower Income and Disproportionately-Affected Communities.** We need major investment in our water infrastructure, including:
1. Replacement of the 6+ million lead service lines;
 2. Adoption of standardized water loss auditing and reporting methods, as developed and endorsed by the AWWA,³⁶ to provide the foundation for cost-effective loss reduction and repair strategies;
 3. Accelerated replacement of deteriorating water distribution piping;
 4. Support for restructuring or consolidation of small systems having trouble complying or difficulty affording infrastructure improvements, so they can be more efficient and enjoy the economies of scale;
 5. Improvements to the process for treating of our drinking water. Far too many drinking water treatment plants in the U.S. continue to rely solely upon outdated technologies for treatment such as coagulation, sand filtration and chlorination. These technologies can work well to remove some basic contaminants like certain microorganisms, but cannot remove many of the modern contaminants such as pesticides, industrial chemicals, pharmaceuticals, and other chemicals that are widespread in water.³⁷ We need to invest in modernizing our treatment plants, as some leaders in the industry have done.
3. **Increase Federal Water Infrastructure Funding.** Current Congressional funding of \$2.37 billion dollars per year *combined* for Clean Water and Drinking Water infrastructure is paltry by comparison to the enormous need. As noted, we must invest in clean water infrastructure to better protect the source waters of our drinking water supplies, in addition to making investments in our drinking water infrastructure. These investments must be substantially increased, at least to the approximately \$8 billion per year combine level funded under the American Recovery and Reinvestment Act of 2009. I note that Senator Cardin has proposed legislation (S. 2532) that would more than triple Drinking Water and Clean Water SRF funding, a move we strongly support. As part of the funding strategy, EPA and state agencies managing these investments should prioritize funding (including grants) for water infrastructure improvements in low-income communities and communities of color since they are so often most at risk and have the greatest problems affording new investments. In addition:
- As part of this reinvigoration of the federal infrastructure investment, more flexibility (grants, loan forgiveness) in the SRF is needed for communities that don't have the ability to meet the criteria to pay back the loans but have serious health threats.
 - States and municipalities also must play a significant role and join in the investment.
4. **Protect Source Water to Reduce Infrastructure Costs.** The better we prevent source water pollution from a wide array of sources ranging from agricultural runoff, to factory farm pollution from manure, to oil and gas-related pollution, the less ratepayers will need to pay to clean up their drinking water. As we have seen

repeatedly in cases like Des Moines, the hundreds of water systems forced to sue the manufacturer of atrazine due to poor regulatory controls on runoff that caused widespread water contamination, and many other examples, an ounce of prevention is worth a pound of cure. A strong Clean Water Rule to protect waters of the United States is an important component of this strategy.

5. **Encourage Small Systems that are Having Affordability and/or Compliance Problems to Regionalize, Restructure, or Consolidate.** As discussed above, and as recommended by EPA and the National Drinking Water Advisory Council's Affordability Work Group, small drinking water systems can be inefficient and have difficulty complying and lack the economies of scale. Approaches to encourage cooperation, restructuring, regionalization or physical consolidation can often cut costs, improve compliance, and provide better drinking water to customers.
6. **Fix the Lead and Copper Rule.** Lead-contaminated drinking water remains a major problem around the country. The EPA's Lead and Copper Rule (LCR)—and the way states and EPA implement and enforce them—need a major overhaul. The LCR, at a minimum, should be fixed to: (a) require all lead service lines to be fully replaced; (b) more fully and fairly monitor problems, and prohibit gaming the system to avoid detecting or reporting lead contamination problems; and (c) require clear, ongoing, and culturally-appropriate public education and notification of lead problems.
7. **Let Citizens Act Immediately in Cases of Imminent & Substantial Endangerment to Health.** In cases such as Flint, citizens whose drinking water may present an imminent and substantial endangerment to health should be authorized under section 1431 of the Safe Drinking Water Act to immediately bring an action for relief when the government has failed them.

NOTES

- ¹ See for example American Society of Civil Engineers, 2001 Report Card for America's Infrastructure. Available online at <http://ascelibrary.org/doi/pdf/10.1061/9780784478882>
- ² See, e.g. Brian Cohen and Erik D. Olson, VICTORIAN WATER TREATMENT ENTERS THE 21ST CENTURY: PUBLIC HEALTH THREATS FROM WATER UTILITIES' ANCIENT TREATMENT AND DISTRIBUTION SYSTEMS, Natural Resources Defense Council, 1994.
- ³ EPA, PROVIDING SAFE DRINKING WATER IN AMERICA: 2013 NATIONAL PUBLIC WATER SYSTEMS COMPLIANCE REPORT, June 2015, available online at <https://www.epa.gov/sites/production/files/2015-06/documents/sdwacom2013.pdf>.
- ⁴ *Ibid.*
- ⁵ EPA, WHAT ARE COMBINED SEWER OVERFLOWS? available online at <https://www3.epa.gov/region1/eco/uep/cso.html>.
- ⁶ Flint Water Advisory Task Force, "Final Report," March 2016, p. 2, available online at http://www.michigan.gov/documents/snyder/FWATF_FINAL_REPORT_21March2016_517805_7.pdf.
- ⁷ Balazs C, and Ray I, The Drinking Water Disparities Framework: On the Origins and Persistence of Inequities in Exposure, *Am J Public Health*. 2014 April; 104(4): 603–611 (available online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4025716/>)
- ⁸ *Ibid*; see also VanDerslice J, Drinking Water Infrastructure and Environmental Disparities: Evidence and Methodological Considerations, *Am J Public Health*. 2011 December; 101(Suppl 1): S109–S114, available online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222486/>; Balazs C, Morello-Frosch R, Hubbard A, Ray I. Social disparities in nitrate contaminated drinking water in the San Joaquin Valley. *Environ Health Perspect*. 2011;119(9):1272–1278 (available online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3230390/>); Balazs CL, Morello-Frosch R, Hubbard A, Ray I. Environmental justice implications of arsenic contamination in California's San Joaquin Valley: a cross-sectional, cluster design examining exposure and compliance in community drinking water systems. *Environ Health*. 2012;11:84, available online at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3533865/>.
- ⁹ Balazs, *supra* note 8.
- ¹⁰ *Ibid.*
- ¹¹ *Ibid.*
- ¹² National Drinking Water Advisory Council, Affordability Work Group, RECOMMENDATIONS OF THE NATIONAL DRINKING WATER ADVISORY COUNCIL TO U.S. EPA ON ITS NATIONAL SMALL SYSTEMS AFFORDABILITY CRITERIA, July 2003, available online at https://www.nclc.org/images/pdf/energy_utility_telecom/water/recommendations_july2003.pdf.
- ¹³ American Society of Civil Engineers, "2001 Report Card for America's Infrastructure," <http://ascelibrary.org/doi/pdf/10.1061/9780784478882>.
- ¹⁴ American Society of Civil Engineers, "2013 Report Card for America's Infrastructure," <http://www.infrastructurereportcard.org>
- ¹⁵ *Ibid.*
- ¹⁶ NPR, As Infrastructure Crumbles, Trillions Of Gallons Of Water Lost, (Oct. 29, 2014), available online at <http://www.npr.org/2014/10/29/359875321/as-infrastructure-crumbles-trillions-of-gallons-of-water-lost>
- ¹⁷ See NRDC, "Cutting Our Losses," dedicated to tracking state policies requiring utilities to report leaks and losses of water from public water systems, at <http://www.nrdc.org/water/water-loss-reduction.asp>.
- ¹⁸ Cornwell D, Brown RA, and Via SH, A National Survey of Lead Service Line Occurrence, *J. of the American Water Works Association*, v. 108 no. 4, 2016. Available online at <http://www.awwa.org/publications/journal-awwa/abstract/articleid/57880483.aspx>
- ¹⁹ AWWA Board supports recommendation for complete removal of lead service lines, March 8, 2016, available online at <http://www.awwa.org/resources-tools/public-affairs/press-room/press-release/articleid/4069/awwa-board-supports-recommendation-for-complete-removal-of-lead-service-lines.aspx>
- ²⁰ AWWA, Buried No Longer: Confronting America's Water Infrastructure Challenge, <http://www.awwa.org/Portals/0/files/legreg/documents/BuriedNoLonger.pdf>
- ²¹ Congressional Research Service, "Funding for EPA Water Infrastructure: A Fact Sheet," (2015) <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43871.pdf>

²² Emily Gordon, Jeremy Hays, Ethan Pollack, Daniel Sanchez, and Jason Walsh, "Water Works: Rebuilding Infrastructure, Creating Jobs, Greening the Environment," produced by Green for All, American Rivers, Economic Policy Institute, and Pacific Institute, 2011, at page 1, available online at http://pacinst.org/wp-content/uploads/sites/21/2013/02/water_works3.pdf.

²³ *Ibid* at 3.

²⁴ Des Moines Water Works, DES MOINES WATER WORKS' 2015 DENITRIFICATION RECORD, January 4, 2016, available online at <http://www.dmww.com/about-us/news-releases/des-moines-water-works-2015-denitrification-record.aspx>

²⁵ See , Mae Wu, Mayra Quirindongo, Jennifer Sass, and Andrew Wetzler, POISONING THE WELL: HOW THE EPA IS IGNORING ATRAZINE CONTAMINATION IN SURFACE AND DRINKING WATER IN THE CENTRAL UNITED STATES, Natural Resources Defense Council, 2010, available online at <https://www.nrdc.org/sites/default/files/atrazine.pdf>.

²⁶ Ian Berry, "Syngenta Settles Weedkiller Lawsuit," May 25, 2012, Wall Street Journal, available online at <http://www.wsj.com/articles/SB10001424052702304840904577426172221346482>.

²⁷ *Ibid*.

²⁸ See e.g. Testimony of Erik D. Olson, NRDC, Before the Subcommittee on Water and Wildlife of the U.S. Senate Committee on Environment and Public Works, at the hearing entitled Examination of the Safety and Security of Drinking Water Supplies Following the Central West Virginia Drinking Water Crisis, February 4, 2014, available online at <http://www.epw.senate.gov/public/index.cfm/hearings?ID=8CCDAFF7-CDC6-8A6F-CA6E-A7017498083C>.

²⁹ NRDC et al., AFTER MORE THAN 40 YEARS, EPA WILL ACT ON HAZARDOUS INDUSTRIAL SPILLS ,available online at <https://www.nrdc.org/media/2016/160217-0>

³⁰ See for example EPA, Restructuring and Consolidation of Small Drinking Water Systems: A Compendium of State Authorities, Statutes, and Regulations, 2007, available online at <http://nepis.epa.gov/Exe/ZyPDF.cgi/60000L09.PDF?Dockey=60000L09.PDF>

³¹ See, *ibid*.

³² UN International Decade for Action Water for Life 2005-2015, INTEGRATED WATER RESOURCES MANAGEMENT (IWRM), available online at <http://www.un.org/waterforlifedecade/iwrm.shtml>.

³³ National Drinking Water Advisory Council, Affordability Work Group, *supra* note 12, available online at https://www.nclc.org/images/pdf/energy_utility_telecom/water/recommendations_july2003.pdf.

³⁴ *Ibid*, pp. 53-60, 95-96.

³⁵ Flint Water Advisory Task Force, "Final Report," March 2016, pages 10-12, available online at http://www.michigan.gov/documents/snyder/FWATF_FINAL_REPORT_21March2016_517805_7.pdf.

³⁶ *AWWA Issues Water Audit Challenge for World Water Day*, at <http://www.awwa.org/resources-tools/public-affairs/press-room/press-release/articleid/4097/awwa-issues-water-audit-challenge-for-world-water-day.aspx>.

³⁷ NRDC, "Report Finds Deteriorating Infrastructure, Pollution Threaten Municipal Drinking Water Supplies," 2003, <https://www.nrdc.org/media/2003/030611>; Erik Olson et al., NRDC, "What's on Tap?" 2003, <https://www.nrdc.org/sites/default/files/whatsontap.pdf>; Brian Cohen and Erik Olson, "Victorian Water Treatment Enters the 21st Century," NRDC, 1995.

Senator INHOFE. Thank you, Mr. Olson.

Mayor Berger, 27 years, is that right?

Mr. BERGER. Yes, sir. I am a slow learner.

[Laughter.]

Senator INHOFE. Well, there have been a lot of ideas here, a lot of testimony here, but the thing that seems to be missing is affordability and flexibility.

Now, you are here representing the U.S. Conference of Mayors, as well as a Mayor yourself. Can you tell us why the U.S. Conference of Mayors believes that the EPA's integrated planning policy isn't sufficient to address the Mayors' concerns about the affordability that we talked about?

Mr. BERGER. Thank you.

Senator INHOFE. It is meant to do that, but is it doing it?

Mr. BERGER. First of all, I can say for a fact that because Lima was the first city to actually negotiate successfully a consent decree involving integrated planning, that we would never have gotten to that point of actual agreement without the integrated planning policy. It does give us the flexibility that we need to proceed and move forward, and we actually are grateful for the fact that there were champions in headquarters at U.S. EPA that created the policy and actually worked through with us the negotiations with the regional office.

Our concern is the fact that it is a policy; it is not the law. Our concern is that it should be codified so that cities all across the country in fact have the opportunity to use it to do their long range planning and priority setting for their own systems.

We are coming up on a process—we are already in this process of actually electing a new President. Who knows what happens to that policy under the next Administration? So there is that transitional change that we are concerned about. But second, I can also tell you that the experience of cities around the country is that there is enormous resistance in the regional offices to actually implementing the integrated plan with cities.

As of this point, we know of really only four communities that have been able to successfully put in place integrated plans, that being Lima, Ohio, Evansville, Indiana, Springfield, Massachusetts, and Spokane, Washington. So our concern is that this is an opportunity that cities have but aren't able to successfully implement. It needs to be part of the law.

Senator INHOFE. Thank you. It was someplace in the U.S. Conference of Mayors that the word was used as prosecutors, that the EPA treats some of the small communities like prosecutors.

Mr. BERGER. Oh, I think that is a widespread experience for cities. We are treated as polluters; we are not treated as stewards, along with the State, for the public environment, for our systems. And it was very clearly the case that regional staff was dismissive. It took us 10 years to get to an agreement. And I believe that that attitude of, frankly, an arrogant, dictatorial attitude out of the agency is very real for most cities.

Senator INHOFE. Do you agree with that, Mr. Chow?

Mr. CHOW. Yes, sir, I do. First of all, Baltimore City, we also use integrated planning and basically try to manage our \$4 billion worth of capital projects.

Senator INHOFE. OK.

Mr. CHOW. But yes, we do experience that as we negotiate with our consent decree, SSO consent decree. We do get more favorable comments or support from the headquarters rather than from the region.

Senator INHOFE. Mr. Moore, this is Senator Wicker over here. He introduced S. 611, I think it was, and they passed his bill, and it is now law, and that establishes technical assistance under the Safe Drinking Water Act for small and rural communities, which you are representing. Do you think that bill should include also communities meeting wastewater mandates?

Mr. MOORE. Yes. The technical assistance end of this we certainly support a certain percentage of, you know, whether it is SRF or the WIFIA, to go to technical assistance to supply that assistance to the smaller systems that cannot go out, you know, and afford the engineers, or it puts a burden on them.

Senator INHOFE. You know, I understand that, because in our State of Oklahoma there are a lot of Madills around. We have a lot of communities that would say that you are representing them well. And I think these are some of the things that we can do in our committee.

Senator Boxer.

Senator BOXER. Thanks, Mr. Chairman.

Many say that in addition to bread, water is the staff of life, so you are dealing with something that is critical, and I thank you for all your passion about it, I really do, and dedicating your life to it. Everybody takes it for granted, we all do, until a kid gets violently ill or a woman has a miscarriage or there is rashes all over our body. Then we go what have we done wrong, all of us together. We are in this together; this isn't an us-versus-them situation. As Eric said, it is all about our families.

So when something goes wrong like that or when a child swims in a lake that has untreated sewage in it, Mr. Berger, and they get very ill because of it, everyone focuses on it. So today we are focusing on it. We are focusing on other things that I believe are secondary, because let me tell you something. We have spent, so far, \$2 trillion in the war in Iraq, OK? I care about this country. I care about our kids being safe. And to say, oh, we can't afford it, baloney. We could afford the war. Thank God not with my vote, but we could afford the war. So we can afford this.

I mean, I really appreciate all of you coming here today to help us figure out how we can do this and not harm our people physically, mentally from this problem, and also in their pocketbooks.

So I want to talk about a few of those things, but first I wanted to ask Mr. Olson are frequent discharges of combined sewage overflows and sanitary sewer overflows, are they a concern? Because we are focused on lead, as we should be. What about these overflows, with the bacteria?

Mr. OLSON. Yes, these are definitely a concern. These are definitely a public health concern, as well as an environmental concern. From a public health standpoint, very often raw sewage is actually dumped into lakes and streams, and that can cause massive contamination. We see beaches being closed; we see people getting

sick, waterborne disease from swimming in it, from being exposed to it.

Senator BOXER. So it is a problem that should be addressed, in your opinion?

Mr. OLSON. It is definitely a big problem in hundreds of communities across the country.

Senator BOXER. Because that is what the studies are now showing. It is disgusting, and we have to fix it. And we can argue over everything. We have to fix it.

Now, Mr. Berger, I want to be your partner. The first part of your testimony I agreed with it, but the rest of it I found very disturbing. First of all, you mentioned my State, and you talk about what it costs. I want you to know that my State has tougher environmental laws than the Federal Government, A. That is what the people there want. OK? B, no one in L.A. ever called me to complain, so who is it you talked to specifically that I can contact and say what are the problems?

Mr. BERGER. Well, the Conference of Mayors published a study of 33 cities—

Senator BOXER. You mentioned Los Angeles.

Mr. BERGER. That is correct.

Senator BOXER. Who told you they are upset about this? Because I want to contact them.

Mr. BERGER. We will give you the published study with those names.

Senator BOXER. I am not asking for a study. You talked about L.A. Because you do not represent L.A., I do. So you tell me who is complaining. And I would really appreciate it if you present it in writing.

Now, Mr. Berger, in your testimony you complain that EPA resists flexibility. This could be true. We want to make sure they don't. We want to get it done just as much as you do, with maximum flexibility. And insists on unrealistic timetables for meeting water quality requirements. Yet, your consent decree provides the city 24 years to come into—

Mr. BERGER. Yes, ma'am.

Senator BOXER. Let me ask my question.—to come into compliance with the Clean Water Act. This consent decree comes after years of the city failing to comply with water quality requirements. And it is also my understanding that you have one of the longest consent decrees in the country.

Is 24 years an unreasonable timetable?

Mr. BERGER. That is why we agreed to it, because it is not.

Senator BOXER. So it isn't. So then why, on the other hand—

Mr. BERGER. But it took us 10 years of negotiation in order to be able to deal with the agency.

Senator BOXER. Well, you didn't mention the fact that your efforts paid off. And let the record show you got a 24-year consent decree.

Now, let me ask you, Mr. Berger, do you think it is appropriate for cities to make improvements to stop the discharges of raw sewage into waterways that are used by our kids?

Mr. BERGER. I believe that it is appropriate for us to take reasonable measures, whether it is with combined sewer overflows or sanitary sewer overflows, to minimize those kinds of problems.

Senator BOXER. Good.

Mr. BERGER. But there are also instances, and many instances, where the requirements are not realistic.

Senator BOXER. I understand. You said that.

Mr. Chow, would increased funding of the programs that you say are helping you, will increased funding help the communities facing affordability issues? We all care about that.

Mr. CHOW. Yes, it definitely would. With the fact that we are forced to use local money to pay for the rehabilitation of our infrastructures.

Senator BOXER. Thank you.

Mr. CHOW. So Federal dollars certainly would be very helpful.

Senator BOXER. OK. Well, I will close because I know my Chairman wants me to. I will. But I want to thank Mr. Arndt for your kind statements about WIFIA, because we are excited about it. We have to fix it to meet some of the real needs, and we will, but we are very excited about it. We think it is a new tool, and we think the leverage is going to be fantastic for you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator.

Senator Wicker, now that I have teed you up with your legislation, you are recognized.

Senator WICKER. Thank you, Mr. Chairman. I have so much to say, and 5 minutes is inadequate, but I will do my part.

It is a fact that EPA has used its discretion to actually reduce the availability of technical assistance to small communities by 75 percent. This has eliminated two full-time circuit riders in my State of Mississippi. And I do appreciate the Chair mentioning the legislation which Senator Heitkamp and I championed last year, the Grassroots Rural and Small Community Water Systems Assistance Act. This was signed into law by the President on December 11, 2015.

Let me just tell you what we are facing in Mississippi. The town of New Hebron has 400 people. They are being told they have to spend \$3 million to comply with the EPA. How are they going to do that? Lawrence County Water system, with approximately 2,000 persons, needs half a million for a new well. The Town of Como, population 1,200, is facing overwhelming water challenges and failing to meet the current EPA permit. They just finished paying approximately \$1 million loan. Now they have to spend another \$1 million. The town of Utica, with a population of 850 persons, is facing \$1 million compliance upgrade.

I don't know why anybody runs for city councilman or Mayor in these small towns. My hat is off to them for trying to make small town and local government better.

The small town of Shaw, 1,900 people, was under a boil water order because of a broken chlorinator that they couldn't afford to fix. The city of Mound Bayou has approximately 2,300 persons; \$87 million to pay for a new sewer treatment facility that EPA is mandating on them because of nitrogen and phosphorus discharges.

Senator Heitkamp and I had hoped that, at a very minimum, the legislation that the President signed would result in a return of circuit riders in rural areas instead of increasing regulatory requirements. Sadly, the circuit riders have not returned to my State with the assistance that they have so capably provided to us.

Mr. Moore, we see the burden of Federal unfunded mandates increasing and EPA assistance decreasing. Is EPA insisting on a Cadillac for these communities when actually a used Chevrolet would do all right? Is there a middle ground there? I am very concerned about the horror stories that Senator Boxer mentioned. I think we all are. Lead in the water, completely unacceptable; children swimming in lakes polluted by raw sewage, absolutely unacceptable anywhere, particularly in the United States of America in the 21st century. But is there a balance there that the regulators who come in and treat you like they are prosecutors, rather than partners, is there a balance there that we are missing? And what can you tell us in that regard? What do you say to these small towns?

Mr. MOORE. Well, first, I would say that even as a small community or a small rural water system, it is our top priority to put out safe water. We will not put out water that is in any way unsafe.

Senator WICKER. Absolutely.

Mr. MOORE. Talking about comparing a Cadillac system or something that a big municipality would need, you know, compared to us, we have to have the facilities that create that safe water, and there is only so much, you might say, bells and whistles that go on some of the bigger water treatment plants that maybe we don't need.

What was the other part of your question?

Senator WICKER. Mr. Berger, how can these small communities, these small towns and municipalities, pay for these mandates?

Mr. BERGER. Well, Senator, I think that part of it has to do with what the requirements are, and I think the opportunity for technical assistance is essential to be able to make certain that they have proper technical advice about what is appropriate. When it comes to the actual affordability issue, there is no question that the Federal Government needs to become a major funder in the form of grants. Grants are now made to States, and States turn around and loan those moneys to cities. That impacts the affordability and makes it unaffordable. So I think that the Federal Government needs to look back at the time of the Clean Water Act first being implemented and the Safe Drinking Water Act and look at the successes that were achieved when the Federal Government had skin in the game in the form of direct assistance to localities.

Senator WICKER. Thank you very much.

Senator INHOFE. Thank you, Senator Wicker.

Senator Cardin.

Senator CARDIN. Thank you, Mr. Chairman.

I want to thank the entire panel.

My good friend, Senator Wicker, I want you to know that I visited the water treatment facility plants in my State. I was just at the Ashburton facility in Baltimore City this past Monday, I was at the WSSC plant also on Monday, and I am very proud of the commitment that the local governments of Maryland have made to

make sure that we have safe drinking water, and we do. But it is not a Cadillac; it is not a used Chevy. We are rebuilding the Model T. They are 100 years old. The plant in Baltimore was first built 100 years ago. It was state of the art, state of the art, and we are modernizing it, but it is still the 100-year-old facility. So it is a struggle.

And obviously we all want to make sure that regulations are done as efficiently as possible, but the bottom line is we must make sure that there is safe drinking water for the people of our country.

What happened in Flint was absolutely outrageous, and I think we all understand that. There were some conscientious decisions made there that should not have been made. But we have problems throughout this country, let's make no mistake about it. In Washington, DC, in the early part of the last decade, lead leached into water of possibly 42,000 children; and nearly a decade ago, in my city of Baltimore, we have closed the drinking water fountains in all of our public schools, and the reason is not that the water isn't safe coming into the community, it is the connections into the facilities that contain lead that can't be used.

So we have serious modernization. Mr. Arndt, you indicated that your organization's studies showed in 2012, I think it was, that there is \$1 trillion of backed up water infrastructure improvements over a 25-year period that could be spent. The EPA did a study showing there is over \$600 billion in the next 20 years in order to modernize.

I was listening to each one of you, and you all said the capacity here just isn't there to do that. The ratepayers can't burden that type of amount. And when you look at the Federal tools, and there are several, including the tax-exempt authorities that you all would like to see and WIFIA, but if you look at the State Revolving Funds, it is one-third the level it was in 2009.

And I want to thank the Chairman, and I want to thank the Ranking Member, because they are trying to do something about that. We are going to try to reauthorize the State Revolving Fund, and that would be at a level, I hope, that reflects at least what the Federal partnership should be, and I thank our leadership on our committee because this committee, in a bipartisan manner, has tried to make more predictable water infrastructure Federal partnerships and a reasonable amount to deal with the needs that are out there. So we are going to continue to try to make those investments, and I have introduced some legislation, and I thank the leadership of this committee for their encouragement of the legislation that we are pursuing.

Mr. Chow, I want to give you an opportunity to respond to a point that you made in your statement, and that is recent findings of economic benefit analysis on the State Federal Revolving Fund. You indicate that the way this is scored doesn't always reflect the true economic cost and benefit of the Federal investment. Could you elaborate on that a little bit more?

Mr. CHOW. Sure, Senator. So, traditionally, when we are looking at the State Revolving Fund, we are looking at the money coming from the Federal Government and/or from the State, which is looking from that end, sort of one-sided. So, for example, the four States in the study showed that the total State and Federal invest-

ment for the years 2012 to 2014 amounted to about \$1.46 billion. So as a result, that study actually showed that combined investment generated about \$160,000 in terms of the Federal tax from that investment.

But if we are just looking at the Federal portion of SRF, which only amounts to about 23 percent of that total combined Federal and State, that every million dollars actually generates \$695,000 in terms of the Federal tax from those States.

So, in other words, \$695,000 in Federal tax revenue is generated by a Federal investment of 23 percent of \$1 million, so that is quite awesome.

Senator CARDIN. Thank you for underscoring that. Obviously, we are interested in clean, safe drinking water, but there is also an economic impact here, and I think the committee understands that, and I appreciate your testimony.

Senator INHOFE. Thank you, Senator Cardin.

Senator FISCHER. Thank you, Mr. Chairman.

And I thank the witnesses for being here today.

We need to discuss the real world implications of these unfunded Federal mandates, as well as the lack of flexibility and the fair penalties that many of our communities are facing. The affordability of water and wastewater infrastructure is a critical concern around the country. In my home State of Nebraska, the city of Omaha is faced with the challenge of addressing a \$2 billion unfunded combined sewer overflow mandated from the EPA, and the cost to the 600,000 residents in Omaha's sewer service area is a burden, and it is particularly hard on our low- and fixed-income residents.

So, Mr. Mayor, I would like to ask you a question. In your testimony you discuss the extensive and the costly process that your city endured to reach an agreement with the EPA's required CSO mandate. In your experience, what are the necessary tools that Congress can provide municipalities and communities to better equip themselves to comply with those mandates with the CSO?

Mr. BERGER. Thank you, Senator. I believe that, first of all, one of the critical elements of integrated planning is the opportunity to prioritize. For an example, we have SSOs in our communities that we demonstrated had no public health impact or environmental impact but which will cost us \$30 million to eliminate. We were able to push those off to a later time while we took on much more serious issues relating to the CSOs. That ability to prioritize is part of integrated planning. It needs to be part of the law. It shouldn't just be a policy.

The second issue really is around affordability, and the Conference of Mayors has developed proposals for how to, in fact, define affordability based upon not MHI, because median household income really masks the impact that these costs will have on low-income households. We believe that a definition of affordability, which absolutely respects the need to do something, but to do it within the affordable limits of a community's resources, is important to ultimately getting to solutions. And we think that additional time.

You know, the Clean Water Act just had, I think, its 42nd birthday, and what we have accomplished didn't happen overnight.

What has been accomplished to the Nation's waters in fact took 40 years to get to this point, and we are still making advances. So any expectations, which are there in the regional offices, that things must be accomplished in 10 or 15 years as the norm really are not realistic. So part of the challenge of dealing with affordability is allowing for the kind of time that communities need to accomplish it within their budgetary means.

Senator FISCHER. Right. Could you speak a little more on the necessity to address those high priority control measures and specifically what impact does that prioritization have on public health and water quality? How can we have Omaha be able to benefit from that prioritization flexibility?

Mr. BERGER. Well, I think that comes back to the technical assessment of where, in any system, there are places where things are happening at higher levels, more frequency events, and then there are places and systems which do not have that kind of frequency or impact. And I think assessments of the entirety of the solution and then plotting that over time for implementation is the key to ultimately getting to something that is reasonable for any given community.

Senator FISCHER. Thank you.

Mr. CHOW, the Mayor just spoke about the median household income, and in your testimony you spoke about the impact on EPA when the agency looks at the community's affordability to cover the unfunded mandates, and you specifically mentioned the benchmark that is used there. Could you explain why that median household income benchmark is harmful to our low- and fixed-income families?

Mr. CHOW. Sure. Of course, as I mentioned, Baltimore, 40 percent of our populations in the city are below median household income at this level, and 25 percent of the population is below the poverty line. So when you are looking at just the median household income, the curve is skewed; you are sort of looking at—

Senator FISCHER. So what should they look at?

Mr. CHOW. They should be looking at the low end, meaning the folks who are most vulnerable, because that is the greatest economic impact, is to that population. As we raise water rates, for example, we raise water rates across the board. So, in essence, what the local end up having to do is that we have to come up with programs that will assist senior citizens as well as low-income citizens to help offset. So looking at the low end would be more practical and more reasonable for us.

Senator FISCHER. Thank you.

You know, Mr. Chairman, we have a lot of low-income residents in Omaha, and people on fixed incomes who are being hit right now with their water and sewer bills, so anything we can do to provide that flexibility to help those folks, I would really appreciate it. Thank you.

Senator INHOFE. Senator Whitehouse.

Senator WHITEHOUSE. Thanks, Chairman.

Three quick points I would like to make. One is that when you are talking about wastewater, it is like talking about real estate: location, location, and location are the three keys, and very often what is reasonable is in the eye of the beholder; and there is a con-

flict, inevitably, between the upstream and the downstream. And I would say to Mayor Berger there are a whole bunch of municipalities up in Massachusetts who are up the Blackstone River from Rhode Island who probably think that they are doing what is reasonable for getting rid of their wastewater and their overflow into the Blackstone River, and they push back pretty hard against EPA trying to get them to clean it up, but the Blackstone River leaves their municipalities, and it comes down and flows through our municipalities in Rhode Island, and we have to deal with water that isn't clean because they haven't bothered to do the steps that we have undertaken actually in Rhode Island to protect our bay that they haven't done themselves.

So I hope we all remember that there is an eye-of-the-beholder issue here, and the downstreamers very often have a different opinion about what a good job the upstreamers are doing.

The second point that I would like to make is that for all of the mockery and scorn that conversations about climate change generate from that side of the committee, in Rhode Island the wolf is already at the door. This is not a hypothetical for us. And what we are seeing is the things that are most clearly connected with climate change, from a water point of view it is rain bursts, and from a general point of view it is sea level rise. Unless somebody wants to repeal the law of thermal expansion, the sea level is going to rise, and our coastal States are going to get it, and we are already seeing that. We had, in 2010, back-to-back 100-year storms. We had more than 10 feet above flood level flooding. Our towns of West Warwick and Cranston and Warwick all had their sewage facilities flooded out by the rising river. I remember stopping on a highway overpass near where 95 was flooded and looking down into the Warwick sewage treatment facility, and all you could see was the tops of the fences and the roofs of the buildings, and everything else, all the sewage was off and down and out into people's yards.

So if you are talking about how individual communities should pay for that, pretty tough to tell Warwick, by the way, you have to rebuild your thing entirely because suddenly rain bursts that you had no cause in, that 15, 20 years ago, when this was built, weren't anticipated, are suddenly drowning out your system.

And on our coasts it is actually even worse. Our sea grant program and our University of Rhode Island have identified 10 at-risk coastal wastewater facilities. Ten in little Rhode Island, where sea level rise plus stronger offshore storms mean that velocity zones and flood zones, treatment plants are now there. So who is going to pay to move that? You are going to ask little Narragansett, little North Kingstown to pay to completely build a new—I don't think they are capable of doing that. And again, they didn't cause the sea level rise; it wasn't something that years and years ago was anticipated. Now it is very, very clear.

So I urge my colleagues say what you want about sea level rise, enjoy your jokes and your mockery, but remember that for States like mine it is very, very real. It hits home.

And the last thing that I want to say is, to Senator Cardin's point, we are dealing with a lot of pretty old Model T stuff. You guys have seen these before, but I love to bring these out. Here is a pipe from a water repair that was done in Rhode Island. You can

see how big the pipe is. You know, I can barely get my finger through the little hole in the middle of it because it has been so filled up with sediments over the years. Here is a bigger version of the same thing. This was a nice big pipe at one point, but now you can see it got pretty clotted up.

In my lifetime, we have actually been removing wooden water infrastructure out of older Rhode Island communities.

So we have a big, big catch-up gap just in terms of this being this ain't a Chevy, this ain't a Cadillac, this is horse and buggy stuff, and we need to invest in building it so that we don't get the public health concerns that we have experienced.

And I thank the Chairman for his attention to this. I think that working with Chairman Inhofe on these infrastructure issues is a very positive thing, and I appreciate his interest in it, and of course the Ranking Member as well, who is terrific on these things. So thank you both very much for this hearing.

Senator INHOFE. Thank you, Senator Whitehouse.

Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman. I want to thank you and the Ranking Member for calling this hearing; it is a really important one.

And I want to commend the witnesses today. I have read through your testimony and really appreciate the diverse views and a lot of the insights that you are bringing to this hearing. I wanted to ask a couple questions that relate more to—and I appreciate the focus on the small communities, because that is one of the things that we struggle with in Alaska.

You know, a number of those Senators have been talking about the challenges of old infrastructure. I actually, in my State, have the challenge of no infrastructure. There is a big difference. So I am sympathetic with communities that have to get rid of pipes and deal with old aging infrastructure, but we are kind of unique in that we have entire communities with no infrastructure. So in rural Alaska there are over 30 communities, thousands of my constituents that have no running water, no flush toilets. They use what we call in Alaska honey buckets. And trust me, the honey buckets don't smell good. That is a euphemism.

So I am going to be looking forward to working with the committee. I have talked to the Ranking Member about this a little bit and trying to address some of these urgent issues.

As I mentioned, one in four rural homes in Alaska lacks running water or flush toilets. And as you know, particularly those from the rural communities, that can actually lead to very high levels of disease, third-world disease levels in some of these communities in America—in America. I think most Americans would be surprised. Yes, we have old infrastructure, but we have third-world conditions, and it is unacceptable.

I wanted to ask, Mr. Moore, you were talking about the small community paradox. I think it is a really important point that even if we did have infrastructure, or tried to get it or tried to upgrade it, in a lot of small communities, like you were talking about, there is no ability to bond, there is no ability to amortize financing on future projects just because of the lack of a population base that

hits critical mass. How do we address that? And I will start with you on that issue, then I really want to open it up to anyone else.

Mr. MOORE. Well, we address trying to reach out our water system to those around us, you know, that does not have, like you said, even access to water at this point, or they have wells that are marginal water quality.

Senator SULLIVAN. But I mean in terms of financing, should it be grant programs? I mean, if your community doesn't even have the ability to bond, there is kind of a different step you need to take. Anyone else see what I am talking about? It just seems like you are kind of stuck if you are not like L.A., where you can do a bond, or any big city. It is different for the small communities.

Mr. MOORE. The low interest loans, you know, combined with a grant is our best option.

Senator SULLIVAN. So you think the Federal grant program also has to be part of that option.

Mr. MOORE. Yes.

Senator SULLIVAN. Does everybody else agree on that?

Mr. ARNDT. Senator Sullivan, I think one of the things that we need to look at closely as it relates to small systems are the State Revolving Loan Funds. At least in my State in Pennsylvania, they have used a substantial part of their funding for the small system needs in the State of Pennsylvania, and certainly, given the volume of dollars that are available through the State Revolving Loan Funds, it is not like they can fund these major CSO and SSO issues and needs that are out there. So I think there is a direct linkage there, so robust funding for the SRFs is clearly something that is important.

The other thing I would say to you, like many, many problems, there is no silver bullet, but my authority over the last 40 years has acquired approximately 40 systems in Pennsylvania. Of those systems, all but two or three of them were small systems, and what we were able to do is leverage the presence of our core system to solve problems in those smaller systems, whether it is replacing supplies, upgrading mains. The fact that you have the ability to spread the cost over a broader customer base is an advantage. I recognize that may not be practical in Alaska.

Senator SULLIVAN. Let me just ask one final question. Mayor Berger, you raised it, and it has been in testimony. I think it is a really important issue. According to the U.S. Conference of Mayors, the EPA, with regard to these water issues, has moved from being no longer a "partner to local government that it once was. The agency has, instead, assumed the role of a prosecutor." And I couldn't agree more with that assessment. That is from the U.S. Conference of Mayors.

But Mayor Berger, you were alluding to this issue of moving from partner to prosecutor to one-size-fits-all to extremely onerous regs even for small towns like you mentioned Lima, Ohio. Can you go into that a little bit more? And is there anything we should be able to do from a statutory standpoint if the EPA has turned into a prosecutor, not a partner, which I fully agree with? They also don't abide by their own regs and law a lot of the time. What should we do in the Congress in terms of trying to change that attitude which you articulated so well?

Mr. BERGER. Well, in the consent decree process you have not just the agency, EPA, you also have the Department of Justice. This is a hostile setup. So the principal fix that can change that is to take it and transform it to a permitted process. This set of arrangements made between the State and Federal Government and locals doesn't have to be enforced through consent decrees; it can be built into permits that get renewed with a set of obligations that get attached to it over time. So changing it from a consent decree process to a permitted process would change that.

Senator SULLIVAN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator CAPITO.

Senator CAPITO. Thank you, Mr. Chairman, and thank the Ranking Member as well.

And I want to thank all of you for being here today.

I wanted to talk to you, Mr. Moore, about rural America. We heard our Senator from Alaska, some of the issues. Obviously, he has a much greater land mass and fewer people than anybody else in the United States, so those are particular challenges. But I think we found in rural West Virginia, at least, that the places that have the least amount of resources are still asked to comply at the same kinds of levels, and it is difficult because you have to go to the ratepayer first to try to see if you can—we have a public service commission, that is how ours is regulated—to see if the ratepayer can bear some of the burden, and a lot of times in these rural areas is where we are economically challenged at the same time.

So what kind of solutions do you see to be able to alleviate—maybe not alleviate the burden because we want clean water everywhere, of course, but to help rural areas get over this hump?

Mr. MOORE. Our Oklahoma Rural Water Association, through EPA funding, has circuit riders.

Senator CAPITO. Right. We have those too.

Mr. MOORE. And they are instrumental in our State at helping with compliance and getting the ideas there that hopefully can solve a problem, rather than bringing in millions of dollars of new equipment, because we just can't afford that.

Senator CAPITO. So when you are putting into an expansion or doing a replacement, what other resources are you looking at besides the ratepayer? I don't know if Oklahoma has a State infrastructure bank or anything of that nature.

Mr. MOORE. Yes.

Senator CAPITO. What other? If you could just enumerate them kind of quickly. Small cities block grant?

Mr. MOORE. Yes, we do have that, and the SFRs are administered through the Oklahoma Water Resources Board, and then the USDA rural development.

Senator CAPITO. Right.

Mr. MOORE. That is normally where—

Senator CAPITO. Where your resources are. OK.

Mr. Gysel, I would like to talk about public-private partnerships, because in the last bill we passed, the WIFIA, which we think has some promise in terms of being able to access public and private dollars to maximize the availability of resources, how do you see

that and are you familiar with it, No. 1? It hasn't actually been funded yet, so as soon as we have it funded maybe you would have a better answer, but what kind of promise do you think that has?

Mr. GYSEL. Thank you, Senator. We think it has a lot of promise in the fact that WIFIA—and we are assuming it is going to go ahead, hopefully—allows for both the blending of Federal funding as well as private money to come together and leverage that out properly. As we said in our testimony, the infrastructure gap is so great right now we don't think that Federal funding will be able to bridge that gap, and we have to bring in these other funding resources through public-private partnerships to do that.

A big part of public-private partnerships is not just the funding component, but is also the risk transference that happens between the municipality or the customer and the company taking on that risk. And we feel that through what we have accomplished through public-private partnerships, that risk transfer can generate incremental value to that customer as a definitive delivery of a model for fixed price and for fixed delivery over the life of the project. The infrastructure initially is very important, but the life of the project, the next 30 years of operations, before you turn that infrastructure back to the client, is very important as well.

Senator CAPITO. Right. I know on TIFIA, which is the transportation that has allowed a lot of PPPs to move forward, one of the things we are doing in our State through the creativity, I think, of our Governor and others is to have the company come in and sort of forward-fund the project, and then have the State reimburse over a longer period of time. So you cut not just the initial dollar that is needed at the public, but you also cut the timing, and you can front-end load it. Do you see that as having the same possibilities in these kinds of projects?

Mr. GYSEL. Very much so. Very much so.

Senator CAPITO. Your dollars are going to go farther.

Mr. GYSEL. They will. And our company is in the process of building the largest P3 project in Regina, Saskatchewan in Canada. It is a \$200 million wastewater treatment plant for compliance reasons, and they have a 30-year ongoing operation maintenance program for another \$600 million, and then they turn it back to the city at the end of the time.

Senator CAPITO. OK.

Mr. GYSEL. But the timeline, you are very correct, the timeline to crunch this down, to turn the financing and deliver the project is critical in these value generations.

Senator CAPITO. I am a big supporter of WIFIA. Thank you.

Mr. GYSEL. Thank you.

Senator INHOFE. Thank you, Senator Capito.

Senator Markey.

Senator MARKEY. Thank you, Mr. Chairman, very much.

You know, clearly Flint is the perfect example of how water policy can just go completely wrong. They had the highest bills and the worst water in times of quality simultaneously, and in a very poor community. And we know that communities that are poor are disproportionately harmed by this issue, and other environmental issues as well. So I have a group of questions I would like to ask, because as we saw in Flint, Michigan, the timeliness of reporting

water quality issues to the residents exacerbated the problem. It took too long for the proper agencies to receive notification of the extent of the problem and too long for the information to be relayed to the citizens of Flint.

Does anyone disagree that one way to get EPA the information would be to require States to inform the EPA about persistent violators or systems who have serious violations? Does anyone disagree with that?

Mr. BERGER. Senator, I believe they already are required to do that.

Senator MARKEY. They are already required?

Mr. BERGER. Yes, sir.

Senator MARKEY. OK. So none of you disagree with that it is already a requirement.

Does anyone disagree that public awareness of drinking water quality in their communities would be increased if it was online and reported electronically, instead of through annual paper reports?

Mr. GYSEL. We agree. In fact, our utilities are moving to that very online reporting as well.

Senator MARKEY. So would that be a reasonable requirement for communities to do it online, rather than paper reports?

Mr. GYSEL. That is what we are doing, yes.

Senator MARKEY. Does anyone disagree with that?

Mr. ARNDT. The only difficulty with going exclusively to an electronic-based report is that there are still elements of the community that are not accessible to that kind of information, surprisingly. So I think really the best way is to do it in both fashions.

Senator MARKEY. So you are saying that a Flint, Michigan, wouldn't have the capacity to be able to report that? A poor community would not have the capacity to be able to do it electronically, as opposed to on paper?

Mr. GYSEL. Not to speak for him. I think what he was saying is that the customers may not have the ability to receive that electronic information.

Senator MARKEY. But ultimately should a community have that capacity, even if individuals do not within it? Because even in a minority community you would have well over 50 percent who would have digital access that would make it possible for them to report.

Mr. ARNDT. I would think you would find general agreement in the water works industry that the electronic distribution is a preferred approach. But you also have to be careful so that you can reach every one of your customers.

Senator MARKEY. So there were clear communications issues between agencies with the Flint crisis. Does anyone disagree that the CDC and State and local public health agencies should be immediately notified if drinking water violations are found that could have an adverse effect on public health so that those public agencies can help to detect and respond to the illness or evidence of exposure?

Mr. CHOW. I think we are pretty much doing that as a part of our water quality permit requirement already, as is.

Senator MARKEY. Does anyone disagree that encouraging real-time monitoring of drinking water quality can ensure that potential

concerns which may have adverse effects on human health are handled in a timelier manner? Obviously, that was not the case in this situation.

Mr. Berger.

Mr. BERGER. Senator, real-time implies huge, sophisticated system for testing and evaluation. Again, I think that what is now required is a timely report, and I think Flint broke down not because of reporting but because there were some pretty bad decisions made, deliberate human decisions made, with a variety of circumstances that just built on itself. So my sense is that the regime in most places allows for the kind of notification and timeliness that you are seeking.

Senator MARKEY. Yes, sir.

Mr. OLSON. Senator, I think that there was a combination of problems in Flint. Some of it was a lack of swift reporting and adequate testing, and we certainly would strongly support immediately reporting of violations and providing that to public health authorities, particularly in cases of significant health threats. Frankly, blood lead levels aren't even automatically reported to CDC, and I know there is legislation Senator Cardin and others have proposed to address that.

Senator MARKEY. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator.

Senator BARRASSO.

Senator BARRASSO. Thank you, Mr. Chairman.

Mr. Moore, shortly after they passed the Clean Water Act in 1971, continuing to today, Congress has appropriated money to the EPA to provide nonprofit organizations with experience and with expertise in the water and wastewater industry to assist rural communities, to assist them in operations, in training, management, regulatory compliance for their water and their wastewater systems. But it seems to me that the EPA, over the last several years, has shifted a portion of that funding provided for this initiative away from this previous on-the-ground technical assistance in training to other methods that included funding entities with very little or no experience in the water industry with no established relationships with utilities that are being served. Things like Webinars were used as a primary tools to provide outreach and training rather than people on the ground.

Do we want communities and utilities to use a Web site or Webinar, or call some university automated help line to get help, or is it better to have them rely on experienced boots-on-the-ground technicians who can provide onsite training and technical assistance, especially during an emergency? I would just appreciate your thoughts on that.

Mr. MOORE. I do know that the circuit rider program has taken cuts in the last few years, and a lot of States have lost circuit riders. There is nothing wrong with Webinars, but in the State of Oklahoma we have many small rural water systems that may have 100 users. They operate out of an office in someone's home. They do not have access to the Webinars. Where the circuit riders can come in and they do a job, they are there face-to-face and they see

the infrastructure, they see the problem, and they normally have immediate response that they can implement.

Senator BARRASSO. And you think they have knowledge of what the system situation is on the ground?

Mr. MOORE. Yes.

Senator BARRASSO. Just because they live there, they are part of the community.

Mr. MOORE. Yes. And the circuit riders, they are there for that reason, and they have seen other systems, the neighboring systems, the systems across the State, and they have gathered that information, and they can bring that information that applies to your system and give it to you.

Senator BARRASSO. In your testimony you talked about the onsite technical assistance that allows communities to comply with the EPA rules. I just ask how valuable it is, this onsite technical assistance, especially to utilities that lack the capacity or the financial ability to have the expertise to comply with the EPA.

Mr. MOORE. It is critical that we fund these circuit rider programs. Like I said, on the very small rural water systems in the small cities, they rely very heavily on that technical assistance.

Senator BARRASSO. Thank you.

Mayor Berger, if I could ask you about a question that you might have some insight into. We have several small communities in Wyoming, Bridger Valley, Southwest Wyoming. They were in compliance with the EPA's arsenic maximum contaminant level standard until that level was changed from 50 parts per billion to 10 parts per billion a number of years ago. You know, these communities had arsenic levels in the mid to low 20s, but the EPA lowered the level from 50 to 10, so for decades the 50 parts per billion was an acceptable health level. Suddenly it has changed, and then it becomes very expensive, very cost prohibitive to implement the technology to get down to that 10 parts per billion. Some engineering quotes in the first years were in the millions to get that number down.

So the costs may have come down maybe \$100,000, but for a community of 200 to 400 people, that money is still out of reach when you think about the other issues that our Mayor has to deal with; other people clamoring for that same money, and you are seeing more bang for the buck with other things. So shouldn't we just be reducing the regulatory burden on communities to allow them to have the funds to address the immediate health and safety challenges of an aging infrastructure and give them the authority to make these decisions?

Mr. BERGER. Well, there is no question that the technology of measurement has changed dramatically over the last 40 years. Who could have imagined that we would ultimately be measuring things down to the nano level? And following the measurement, the regulations have become mandates to treatment levels. So the question becomes, for any given circumstance, when you are looking at a single regulation, how does that compare to the other public health challenges that a community has. And I think that often the regulators come in in a very siloed kind of way. They are charged with this particular mandate and ignore the rest of the mandates that a community might have. So I think, again, inte-

grated planning allows folks to be able to look at all the challenges in front of them and make choices and set priorities, and I think that is why it has to become a part of the law.

Senator BARRASSO. Thank you, Mayor Berger.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Barrasso.

Senator Carper.

Senator CARPER. Thanks so much. I apologize for arriving late. We had a classified briefing on another subject, and I needed to stay there through its conclusion. So thank you for still being here, and thank you for attending and giving us your thoughts and responding to our questions.

I would like to ask a series of questions, and I am going to ask these for each of you, and just yes or no answers, initially. Except I am not going to ask, Mr. Olson, you to respond to these questions, they are really more for folks that are representing a utility or maybe a city that provides water for its residents.

Here is the first question: Do you charge more for water when supplies are tight?

Mr. BERGER. No, sir.

Mr. MOORE. No.

Mr. CHOW. No, sir.

Mr. ARNDT. No, sir.

Mr. GYSEL. No, sir.

Senator CARPER. OK. Do you charge more for water used for, say, watering lawns or washing cars than for essential functions like drinking and bathing?

Mr. CHOW. No, sir.

Mr. BERGER. No, sir.

Mr. ARNDT. No, sir.

Mr. GYSEL. No, sir.

Mr. MOORE. We do have a tiered system that the water rights began at \$5 per thousand, and then when it gets over 10,000 it is \$7 per thousand.

Senator CARPER. OK. I think you may have just answered this question for yourself, Mr. Moore. Do you charge more per person for water use as people use more water?

Mr. MOORE. Yes, it is a tiered system.

Senator CARPER. That is for each of you.

Mr. BERGER. We do not.

Senator CARPER. OK.

Mr. CHOW. Actually, ours is a declining rate, so the more you use, the lower the unit rates become.

Senator CARPER. OK.

All right, go ahead, Mr. Moore.

Mr. MOORE. No, I was just saying ours is an escalating tiered system; the water cost goes up.

Senator CARPER. Just the opposite of Mr. Chow. OK.

Mr. GYSEL. Inclining.

Senator CARPER. Mr. Arndt, same question.

Mr. ARNDT. Lehigh County Authority has multiple different rate schedules depending on a service area, but in some cases we have a flat rate where the same rate is charged no matter what the use;

in some cases there is actually a declining block rate where there are lower rates as consumption increases.

Senator CARPER. OK.

Mr. GYSEL. We have an inclining block rates that are accelerated, so the largest tier is that much more of your bill as well. So not only increasing, but increasing it dramatically.

Senator CARPER. OK. Thank you.

Let me just ask, and this would be for all of you, including Mr. Olson, why can't or shouldn't we embrace time of use rates or price increases, when prices increase, demand increases, or similar to what we do, say, with electricity? And if you would just lead off, Mr. Berger. Why shouldn't we embrace time of use rates where prices increases, demand increases, like we do with electricity?

Mr. BERGER. I think it depends upon the stress of the system. If your system has plenty of water, then there is no need to impose those kinds of restrictions. We do have the authority under city ordinance that at the point of drought or other kinds of stress, shortages, we do and can impose limits on consumption.

Senator CARPER. OK, thanks.

Mr. Chow, just very briefly, please.

Mr. CHOW. No, we do not have restrictions set; however, we do get into that drought situation that Mayor Berger just spoke about.

Senator CARPER. OK.

OK, very briefly, why couldn't we or why shouldn't we not just do, but the rationale?

Mr. CHOW. Well, I think, first of all, water usage is really individual, so individual household, individual residents within the household, the usage pattern is different and so on. To sort of set a standard per person, how many gallons you can use per day, that may not be practical.

Senator CARPER. All right, thank you.

Mr. Moore. Real briefly.

Mr. MOORE. Especially on a residential rate, I have no problem escalating that rate because they use a certain amount for domestic use, and then everything above that goes on a lawn or something, that type of use.

Senator CARPER. Mr. Arndt.

Mr. ARNDT. I think one of the issues that relates to the technology, the availability of the metering capability to do this in a practical way. The other part of it is in our State we have what we call a uniformity clause that you have to charge the customer the same rate within a collect, so every residential customer needs to be treated the same. So if you have a customer who works night shift, and therefore perhaps uses water differently than someone who works day shift, you are actually creating a disadvantage or discrimination with a rate structure.

Senator CARPER. All right, thank you.

Mr. Gysel. Very briefly, same question.

Mr. GYSEL. I am sorry?

Senator CARPER. Very briefly, same question, please.

Mr. GYSEL. Yes. It is all about technology. We have metering that is just going from fixed full metering to AMR technology. We are now moving to AMI technology. We haven't advanced as far on

the technology side to measure the time of use, never mind to do the repository of all the data that would be required for—

Senator CARPER. OK, thank you.

Mr. Chairman, I have just one more yes or no question, if you would give me the opportunity.

Last question: Should water utilities consider inverted block pricing where prices increase with consumption? Again, should water utilities consider inverted block pricing where prices increase with consumption, yes or no?

Mr. BERGER. No.

Senator CARPER. OK.

Mr. Chow.

Mr. CHOW. It really depends on the driver in terms of are you trying to stimulate economy and/or are you looking at industry versus residential. So every municipality community might be different.

Senator CARPER. OK. Thank you.

Mr. Moore.

Mr. MOORE. I do recognize the difference, you know, in municipal water and rural water, but yes, I do think we have the right to set those rates.

Senator CARPER. Mr. Arndt.

Mr. ARNDT. It should be an option, but I think it is very much driven by the specific circumstances of each system whether it is workable or not.

Senator CARPER. OK.

Mr. Gysel and Mr. Olson, then I am done.

Mr. GYSEL. I would agree with the caveat that the cost structures of utilities are usually inversely related to the revenue structures, and by that I mean that 70 percent of our costs are fixed, but usually 70 percent of the revenues are a risk on consumption. If you have inclining or increasing block rates, that last blocks, and it is large enough, represents a real threat to the utility recovering the true cost of delivering the water service.

Senator CARPER. OK, last witness, Mr. Olson.

Mr. OLSON. And I would agree that generally it makes sense to increase the rate with more use; it encourages conservation and helps low-income people pay a lower rate.

Senator CARPER. Thank you all. Thanks very much.

Thanks, Mr. Chairman.

Senator INHOFE. Thank you, Senator Carper.

We have had good participation today, and I just would like to conclude by, first of all, recognizing that there is a very significant thing that came from Madill, Oklahoma. It is the wife of the Speaker of the House. So we want to recognize that.

I would like to also just make a comment. You get mixed reports from the media as to what is going to happen with the WRDA bill. I have every conference. I am in the leadership; I have talked to the leadership on our side, Barbara has done the same thing on her side, and I am anticipating that we will be able to do this, get this out of committee, on the floor during this work period.

And I also acknowledge that there are a lot of problems that we have, but there are a lot of solutions just from members of this committee. Senator Cardin's SRF legislation and his proposal for

grants to replace lead service lines, Senator Booker's trust fund ideas, Senator Boozman's alternative water supply bill, rural water ideas. So we are working on ideas, and it has been very helpful to have you folks coming in from your different perspectives and levels to give us a better idea from hometown what the problems are.

Senator Boxer.

Senator BOXER. Thanks, Senator, so much.

Let me be brief but take a couple of minutes to thank each and every one of you. I want to thank Senator Carper. Those questions were fascinating to the Senator from California, where we have such a terrible drought. So for us to hear, well, you pay less when you use more, it is like culture shock. But I completely understand that every district and every State is quite different from the next, and I think that is a critical part of the discussion.

But as we move to the WRDA bill, which I am following the leadership of my great Chairman here, you don't know how bad it gets until you have a severe drought and then you don't have enough water. So I am going to be looking at desalination and other kinds of ways we can help.

Very briefly, all of you want to see more grants rather than loans, and I completely get it, and I will work toward that as best we can, given resources. If you look at the history of Federal grants on water, it is very interesting, Mr. Berger, because when the program started it was 100 percent grants, until 1987, and Ronald Reagan worked with the Congress because they were putting pressure on Federal spending, and it changed to the State Revolving Fund, where now there was more of a partnership in terms of funding.

But what is important is, and we have the SRF, it was added to drinking water later. The States can come in to pick up the matching, too. So your States could really help you as well. I want to make that point. And I think as we look at public-private partnerships, if it is done right, that is another level of funding we can count on.

But I want to close with this, and hope that you will answer this in writing, all of you. We heard some pretty harsh words about the EPA and the EPA being a prosecutor. What is interesting to me is I look at Flint. I wish to heck they had been. They were very soft. They wrote little notes behind the scenes: problems, problems. They were quiet. They weren't aggressive enough.

So I still don't dismiss the point that you feel like they are prosecutors, but I hate that broad brush comment. And I think what is very important is that you write to us and tell us the cases of specifically, specifically where they were.

Now, some of you may not agree that they are prosecutors, but I know a couple of you do. So please give me that in writing, because if that is going on, that isn't good.

So I will say to all of you thank you very much, thank you to my Chairman, and I am so looking forward to another WRDA bill. Mr. Chairman, we have just dwindling time on our partnership here. You will be here forever, but I won't. So as long as we are a team and we have proven we can do it, I am counting on you. Do you have any words of advice?

Senator INHOFE. We are going to be doing it. You know, it is funny, because we don't agree on a lot of things.

Senator BOXER. Really?

Senator INHOFE. For example, I think one of the reasons that I disagree with her last statement was that I sat on that side of the table for a long period of time and I know what bureaucratic intimidation can mean, and I have been suffering from that.

But on things I really believe Government is supposed to be doing, our highway bill, we wouldn't have had a highway bill if she and I hadn't worked together to make this happen. And I would say the same thing with the WRDA bill. It is very significant what is coming up. So we are going to be working together.

And we are adjourned.

Senator BOXER. Thank you, everybody.

[Whereupon, at 12 p.m. the committee was adjourned.]

[Additional material submitted for the record follows:]

Statement of
The Associated General Contractors of America
to the
Committee on Environment and Public Works
U.S. Senate
For a hearing on
**“The Federal Role in Keeping Water and Wastewater Infrastructure
Affordable”**

April 07, 2016



Building Your Quality of Life

AGC is the leading association in the construction industry. Founded in 1918 at the express request of President Woodrow Wilson, AGC now represents approximately 26,000 firms in nearly 100 chapters throughout the United States. Among the association's members are approximately 6,500 of the nation's leading general contractors, more than 12,500 specialty contractors, and more than 13,000 material suppliers and service providers to the construction industry. These firms engage in the construction of buildings, shopping centers, factories, industrial facilities, warehouses, highways, bridges, tunnels, airports, waterworks facilities, waste treatment facilities, dams, hospitals, water conservation projects, defense facilities, multi-family housing projects, municipal utilities and other improvements to real property.

THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
2300 Wilson Boulevard, Suite 300 • Arlington, VA 22201 • Phone: (703) 548-3118 • FAX: (703) 548-3119

**Statement of
The Associated General Contractors of America
Committee on Environment and Public Works
United States Senate
April 07, 2016**

The Associated General Contractors of America (AGC) is pleased to write today to explain the many possible tools that could and should be active in the water and wastewater infrastructure financing toolbox.

AGC is the leading association representing more than 26,000 firms, involved with architectural, engineering and construction (AEC) services. Our membership includes over 6,500 leading general contractors, and over 9,000 specialty-contracting firms, as well as over 10,500 service providers and suppliers through a nationwide network of chapters. Our members are engaged in all forms of the design and build process including commercial, industrial, and community use buildings, infrastructure, and other improvements to real property. Many of these firms regularly undertake construction for the Environmental Protection Agency's (EPA) State Revolving Loan Fund Program (SRF) and the Department of Agriculture's Rural Utilities Service. Most are small and closely-held businesses.

Even before the economic downturn, many of our cities and towns, which include large urban and small rural communities, had experienced substantial challenges repairing and replacing water infrastructure that is quickly reaching the end of its useful life. Many communities do not currently have the financial resources to make the necessary investments to meet federal water quality standards and face significant practical and political challenges enacting rate structures to raise adequate capital and make the improvements that are needed. Water infrastructure needs continue to multiply as chronic underinvestment in federal water infrastructure financing programs is compounded by an evolving and expanding regulatory landscape. Clean water and drinking water agencies will continue to bear the brunt of this double-edged problem. EPA projects between \$400 to \$600 billion is needed in infrastructure improvements over the next 20 years simply to keep pace, yet consistent dwindling of federal commitment to the SRF programs has resulted in a gap in funding of more than \$20 billion annually. Independent analyses of the water and wastewater infrastructure needs put the numbers well over \$1 trillion. The federal government began a massive commitment to secondary water treatment systems in the Clean Water Act's Construction Grants program over 40 years ago. Much of the infrastructure that was put in place during that period has reached or passed its design life or capacity. This is creating a water infrastructure crisis at the local government level.

When the federal government began mandating quality standards for drinking water and wastewater discharge through legislation like the Clean Water Act and Safe Drinking Water Act, it also recognized that forcing local governments to spend billions of dollars to upgrade facilities and equipment to comply with regulatory burdens was impractical. The EPA's SRF program is the vehicle the government uses to avoid foisting the burden of maintaining national water standards onto local ratepayers alone. Given that it is in the federal interest to set water quality standards, then so too must it be in the federal interest to provide financing help to operators so they can meet those standards. This is even more salient now with the sharp drop-off in State

revenues and lack of budgetary flexibility most states have due to balance provisions in state constitutions. Federal investments in infrastructure also are often the best way to ensure the health, safety and economic vitality of sparsely populated rural communities. Many rural communities, indeed many rural states, lack the resources needed to finance the construction of major infrastructure projects like advanced wastewater treatment plants or safe drinking water filtration systems. The federal government is uniquely suited to supporting infrastructure investments in these rural communities, especially when so much of our nation depends on the commercial traffic that travels through them and the agricultural products that come from them.

Potential Tools in the Toolbox

There are several infrastructure financing options that have been suggested or have been in use at one time, but none that have remained consistent over the last several decades. There needs to be stability and predictability for state and local governments, which would allow them to create long-term construction plans, which in turn give stability and predictability in the water and wastewater construction markets. Giving municipalities and their contractor partners access to all the tools in the infrastructure financing toolbox will help achieve this.

The first and most immediate solution is simply to halt the assault on the annual appropriations to the federal water infrastructure financing pathways - such as EPA's SRFs and USDA's Rural Utilities Service. Congressional appropriations for water infrastructure projects have been diminishing steadily over the years while our needs are increasing. Despite of the investments made in the Recovery Act and significant increased levels of appropriations for fiscal year 2010, AGC of America believes that a more stable revenue stream is required to ensure that we are adequately investing in our water infrastructure. This would also help to ensure that the reforms enacted in the 2014 Water Resources Reform and Development Act (WRRDA) that make SRF loans more flexible to administer and go farther (with options like principal forgiveness and negative-interest loans) are being used to their fullest potential.

While increased appropriations would go a long way toward alleviating the short-term problem, they would not solve the long-term problem of market stability and predictability. With the volatility inherent in the annual appropriations process, a sustainable, long-term funding mechanism is needed to provide market certainty for construction firms and local water authorities. This new long-term funding mechanism should be multi-year and utilize the existing SRF framework to move funds from the federal to state and local levels. This long-term mechanism should also embrace the "user pays" concept that other infrastructure funding mechanisms have implemented with success to create a budget-neutral, user-fee financed, clean water trust fund. The best long-term solution would be to establish this national clean water trust fund, to be financed by a wide array of small broad-based user fees at the manufacturer level.

There is ample precedent for dedicated federal trust funds to tackle problems too big for states to handle alone. The GAO has identified more than 120 federal trust funds in operation. These trust funds help ensure funding for other critical projects, including Highways, Airports, Harbor Maintenance, even Oil Spill cleanup. A dedicated long-term, sustainable, off-budget source of funding for water infrastructure such as a trust fund would create market certainty in the water and wastewater markets.

Polling has shown that 86 percent of Americans support legislation by the U.S. Congress that would create a long-term, sustainable, and reliable federal trust fund for clean and safe drinking water infrastructure. The Government Accountability Office (GAO) in 2009 released a report entitled "Options for a Clean Water Trust Fund" which acknowledges that our nation faces tremendous challenges in replacing and rehabilitating our water infrastructure. As the GAO's report states, a trust fund for water infrastructure may not be the only solution to our water infrastructure needs in America but it would establish a multi-year commitment to address the nation's pressing water needs.

Additionally, while a trust fund would be the best solution, it is still only one tool in the toolbox of financing and funding mechanisms that Congress should make available for use by state and local governments. Alternative and creative methods of financing water infrastructure must be embraced in these tough times. As traditional methods of funding fall out of favor, it is important to seek fresh and creative approaches. However, it is crucial to note that these creative and alternative mechanisms should supplement, rather than replace, the traditional financing mechanisms, such as the SRF, which are already proven to work.

One such creative mechanism is the highly successful, but short lived, Build America Bonds (BAB) program in the Recovery Act. BABs are taxable bonds for which the U.S. Treasury Department pays a 35 percent direct subsidy to the issuer to offset borrowing costs. The program financed nearly \$38 billion in water and sewer infrastructure projects over the two years it was active. That's more than ten times the combined amount appropriated to the SRFs for FY2010 (the best year for SRF appropriations not adjusted for inflation).

Another important financing mechanism is the new Water Infrastructure Financing and Innovation Authority, or WIFIA based on the one of the success stories of the Surface Transportation Program, the Transportation Infrastructure Finance and Innovation Act program (TIFIA). This national program is designed to give direct loans and loan guarantees to water infrastructure projects could help take some of the pressure off municipalities with large needs. One of the major benefits of this approach would be that money appropriated can be leveraged on the open market at rates ranging from 10:1 up to 30:1 to drastically increase the length that the federal dollar will go. While this program was created in the 2014 WRRDA, it has yet to see prime time appropriations and has not yet been put to use.

A final method of directing funds to water infrastructure would be to secure access to private investment in water infrastructure. Private activity bonds (PABs) can be an important tool for financing infrastructure investments in our communities by providing long-term financing for capital-intensive infrastructure projects. PABs are a form of tax-exempt financing available to entities like state or municipal governments that want to partner with a private party to meet a public need. Interest paid on bonds issued by State and local governments generally is excluded from gross income for Federal income tax purposes, which allows the interest rates on such bonds to be lower. This, in turn, lowers the borrowing costs for the beneficiaries of such financing.

Congress controls the total volume of tax-exempt bonds by limiting issuance in each state with an annual cap – for example, in 2016 the volume cap for a state is the greater of either \$100 per capita

or \$302.88 million. Water and wastewater projects should be removed from this annual volume cap, allowing those projects to no longer have to compete with the dozens of other categories of public spending these bonds finance. Exceptions from the volume cap are currently provided for other governmentally owned facilities such as airports, ports, high-speed intercity rail, and solid waste disposal sites.

PABs employ the best features of successful public-private partnerships, spreading risk and encouraging innovation. By reducing a government's project management burdens and its risk (with PABs, the private entity assumes much of the financial risk and administrative responsibility), multi-year projects and a broader project load become more feasible as the government has more resources to allocate. Also, PABs do not affect the municipality's bond rating, an important benefit of PABs for municipalities. There is considerable private capital that could and would be invested in water infrastructure if the proper mechanisms were available, with some Wall Street estimates putting that value between \$2 and \$5 billion per year in new private spending.

Concluding Remarks

AGC thanks the Committee for the opportunity to submit this statement for the record. The SRF program is highly successful, but is in danger of being underfunded out of existence or actively de-funded. AGC of America believes the approach outlined above must be taken to give every locality – from the smallest rural towns to the biggest urban centers – the widest range of possible mechanisms to fund water and wastewater construction. Many of these options have been sporadically available in the past and remain good ideas waiting to come off the shelf. A true solution to the water infrastructure financing crisis would include making all of these options available all the time. Permanent long-term solutions are the only way to avert further crisis, let municipalities and contractors plan for the future, and truly safeguard our environment and health.



**ASSOCIATION OF
METROPOLITAN
WATER AGENCIES**

LEADERS IN WATER

1620 I Street, NW, Suite 500
Washington, DC 20006

P 202.331.2820 F 202.785.1845
amwa.net

April 7, 2016

The Honorable James Inhofe
Chairman
Environment and Public Works Committee
United States Senate
Washington, DC 20510

The Honorable Barbara Boxer
Ranking Member
Environment and Public Works Committee
United States Senate
Washington, DC 20510

Dear Chairman Inhofe and Ranking Member Boxer:

The Association of Metropolitan Water Agencies (AMWA) appreciates the opportunity to submit comments for the record of today's hearing on "The Federal Role in Keeping Water and Wastewater Infrastructure Affordable." As an organization representing the nation's largest publicly owned drinking water utilities, our members are well aware of the challenges communities face in balancing water rate affordability with the need to pay for necessary improvements to water infrastructure. We are eager to work with the committee to explore how the federal government may be able to better assist communities in meeting this objective.

The ongoing water crisis in Flint, Michigan has led Congress to increase its focus on water systems, but a comprehensive response to Flint should recognize that America's water infrastructure challenge goes far beyond the need to address lead service lines. EPA's most recent Drinking Water and Clean Water Needs Surveys show that the nation's water and wastewater infrastructure requires more than \$650 billion worth of investments over the next two decades just to maintain current levels of service, but even those estimates may be too modest. The American Water Works Association has estimated that it may cost drinking water systems alone approximately \$1 trillion over the next 25 years just to upgrade and expand buried water infrastructure, and AMWA and the National Association of Clean Water Agencies have projected that water and wastewater utilities could spend a similar amount over 40 years as they adapt to changing hydrological conditions such as extreme drought, more frequent intense storms, and rising sea levels.

While we believe that local water infrastructure should primarily be paid for through local water rates, there is a role for the federal government to play in facilitating access to affordable financing and offering assistance to communities in need. Fortunately, there are several new and established federal programs and policies in place to help cities and towns deliver clean and safe drinking water.

BOARD OF DIRECTORS

PRESIDENT

Scott Peter
Nashville Metro Water
Services

VICE PRESIDENT

Mac Underwood
Birmingham Water Works
Burst

TREASURER

Michael Wallis
East Bay MUD

SECRETARY

Steve Schneider
Saint Paul Regional Water
Services

VICE SECRETARY

Irene Cannitter
Chicago Department of Water
Management

VICE SECRETARY

John Carman
Fort Worth Water Department

Jan Chang
Houston Public Utilities Division

John Eisenberger
Las Vegas Valley Water District

Ray Hoffman
Seattle Public Utilities

Julia J. Hunt
Trinity River Authority of Texas

Robert Hunter
Municipal Water District of
Orange County

Carrie Lewis
Milwaukee Water Works

Angela Licata
New York City DEP

James S. Laebhead
Denver Water Department

Ron Lovan
Northern Kentucky Water
District

Sue McCormick
Great Lakes Water Authority

Chuck M. Murray
Fairfax Water

William Stowe
Des Moines Water Works

John P. Sullivan, Jr.
Boston Water and Sewer
Commission

Douglas Yoder
Miami-Dade Water and Sewer
Department

**CHIEF EXECUTIVE
OFFICER**

Diana VanDe Hei

The Honorable James Inhofe
The Honorable Barbara Boxer
April 7, 2016
Page 2 of 4

The Drinking Water State Revolving Fund

Authorized by Congress in 1996, the Drinking Water State Revolving Fund (DWSRF) is the most well established federal program to aid in the financing of drinking water infrastructure. Each year after Congress appropriates DWSRF funding, EPA distributes a share of the funds to each state, following a formula based on each state's identified drinking water infrastructure needs. States add 20 percent match to their share of funding, and then use the proceeds to provide loans and other assistance for eligible projects in their state, with a focus on addressing the most significant threats to public health. According to EPA, as of 2014 the DWSRF had provided more than \$27.9 billion in funding assistance to communities nationwide through approximately 11,400 individual loans – an average of \$2.4 million per project.

While the DWSRF has been a great success, the program also is in need of a renewed commitment from Congress. The DWSRF has never been reauthorized, and annual funding levels have steadily decreased since 2010. Even President Obama's FY17 budget request of \$1.02 billion for the DWSRF falls more than \$100 million below the amount the administration sought for the program in 2016.

In response to the nation's well-documented water infrastructure needs, AMWA supports efforts in Congress to provide \$2 billion to the DWSRF in FY17, along with an additional \$2 billion for the Clean Water State Revolving Fund. Should this funding level not be possible in the current fiscal environment, at minimum we urge Congress to avoid cutting total SRF funding below its current level, and to ensure the total SRF investment is equally divided between the Drinking Water and Clean Water programs. AMWA also encourages the Environment and Public Works Committee to consider legislation to formally reauthorize the SRF programs.

The Water Infrastructure Finance and Innovation Act

The federal government's newest water infrastructure financing program was established two years ago in large part due to the efforts of the Environment and Public Works Committee. Enacted as part of the Water Resources Reform and Development Act of 2014, the Water Infrastructure Finance and Innovation Act (WIFIA) pilot program is an innovative financing mechanism that will help communities nationwide pay for large-scale water and wastewater infrastructure projects. Through WIFIA, EPA will loan Treasury funds to cities and towns to carry out qualifying projects, but at a lower interest rate than the community would likely obtain on the bond market. All WIFIA loans will be paid back to the federal government with interest over the period of 35 years following substantial completion of the project – thus providing affordability to local ratepayers and a return on investment to the U.S. Treasury.

Importantly, WIFIA will complement, not compete with, the existing SRF programs. Unlike the DWSRF, which typically delivers modest-sized loans to help communities respond to public health risks, WIFIA is intended to help communities finance large-scale water infrastructure improvements that may not be positioned to benefit from SRF assistance. For example, because

The Honorable James Inhofe
The Honorable Barbara Boxer
April 7, 2016
Page 3 of 4

the DWSRF gives preference to projects that address the most serious risks to human health, a significant portion of DWSRF loans often flow to small communities that require help to improve drinking water quality. But other projects that are not directly tied to SDWA compliance or health protection – such as investments to replace or upgrade aging infrastructure or to enhance the reliability and security of water supplies, particularly in metropolitan areas – often struggle to obtain SRF assistance in amounts that will meaningfully reduce total project costs.

A wide range of drinking water, wastewater, stormwater, water reuse, recycling, and desalination projects expected to cost in excess of \$20 million are all eligible for WIFIA loan assistance – with WIFIA funding able to cover up to 49 percent of the total project costs. WIFIA also accommodates smaller communities faced with lower-cost projects, as the program will offer loans to a project costing as little as \$5 million in a community of 25,000 people or fewer.

The next several months will mark a critical time for WIFIA. EPA is in the final stages of drafting the program's rules, and the agency has announced plans to issue the first WIFIA loans during the 2017 fiscal year. In preparation of this the Obama Administration's FY17 budget request for the first time sought funding for WIFIA loans. AMWA urges Congress to fund WIFIA in its fully authorized amount of \$35 million in 2017. Assuming a conservative leveraging ratio of 10:1, this sum could be leveraged into at least \$350 million worth of water infrastructure loans next year. Some have even suggested the leveraging ratio could reach as high as 60:1, which would translate into \$2.1 billion worth of loans following an initial \$35 million investment.

The Environment and Public Works Committee should also look to the upcoming Water Resources Development Act as an opportunity to extend the WIFIA pilot program, which is currently scheduled to end in 2019. Because the pilot program is not expected to be operational until the first two years of its authorization (2015 and 2016) have passed, there will remain only three years for the government and communities to explore opportunities with WIFIA. While we are confident that WIFIA should be authorized as a permanent program, at minimum the next WRDA bill should extend the pilot phase for at least two years to make up for the time lost while EPA developed the program's operational rules.

Tax-Exempt Municipal Bonds

The most critical federal water infrastructure financing assistance mechanism is perhaps also the most overlooked during policy discussions. Since the federal tax code was established in 1913 interest earned on municipal bonds has been exempt from federal income taxes. According to the Congressional Research Service, tax-exempt municipal bonds are the most prevalent water infrastructure financing mechanism, with at least 70 percent of U.S. water utilities relying on them to pay for infrastructure improvements. In 2014 alone, communities issued \$34 billion in tax-exempt municipal bonds to finance water, sewer, and sanitation projects.

The Honorable James Inhofe
The Honorable Barbara Boxer
April 7, 2016
Page 4 of 4

Municipal bonds make infrastructure investments more affordable for communities because the lack of federal taxes on interest payments leads investors to charge lower interest rates than they otherwise would. These lower interest rates directly translate to lower financing costs, and thus more affordability for local water and wastewater ratepayers. One study by AMWA and the National Association of Clean Water Agencies found that fully taxing municipal bond interest in 2012 alone would have increased water infrastructure financing costs nationwide by \$9 billion.

Unfortunately, even as members of Congress and the administration increasingly speak of the importance of affordable water infrastructure financing, proposals are circulating to tax municipal bond interest. For example, the President's FY 17 budget request proposes to phase out the tax exemption on municipal bond interest for certain high-income taxpayers. While the plan is framed as making high-earners pay their fair share of taxes, in reality the plan would prompt investors to demand higher interest payments on tax-exempt bonds – meaning higher borrowing costs for local communities investing in infrastructure. This would directly translate into increased costs borne by water utility ratepayers – especially low-income individuals and families who are already struggling to pay their water bills. Higher water infrastructure financing costs could also lead communities to look to the federal government to close the gap, thereby increasing stress on federal water infrastructure financing programs.

As Congress may consider a comprehensive tax reform proposal as early as next year, AMWA encourages senators who prioritize affordable water infrastructure investments to stand up in defense of tax-exempt municipal bond interest. Maintaining tax-exempt municipal bond interest is the simplest step Congress can take to ensure affordable water infrastructure financing well into the future.

Conclusion

Again, AMWA appreciates the opportunity to submit these comments on efforts to keep water infrastructure affordable. Continued investment in the DWSRF, the funding and extension of WIFIA, and the preservation of tax-exempt municipal bond interest are all policies that will help our nation achieve this goal.

Thank you again, and AMWA looks forward to continuing to work with you on this issue.

Sincerely,



Diane VanDe Hei
Chief Executive Officer



National Association of Clean Water Agencies
Written Statement for Senate Environment and Public Works Hearing On
The Federal Role in Keeping Water and Wastewater Infrastructure Affordable
April 7, 2016

The National Association of Clean Water Agencies (NACWA) represents the nation's public clean water utilities, with nearly 300 public agency members that collectively treat the majority of the nation's wastewater and manage large quantities of the nation's stormwater. NACWA respectfully requests the following statement to be submitted as part of the record for the Senate Environment and Public Works hearing on "The Federal Role in Keeping Water and Wastewater Infrastructure Affordable."

This hearing is indeed timely as policymakers grapple with recent water-related crises in Flint, MI, the ongoing drought in the West, and other water issues that have placed the national spotlight on the state of our water and wastewater infrastructure. More importantly, these crises have raised questions about the federal water policy in place to ensure all Americans have access to safe and clean water.

Affordability Concerns and the Clean Water Act

There is little doubt that our nation's water quality has significantly improved since enactment of the Clean Water Act (CWA) in 1972, largely due to investments in wastewater infrastructure made by Congress and America's ratepayers. In fact, since the law's enactment, the number of fishable and swimmable waterways has increased nearly 50%. Yet improvements in water quality have largely plateaued as sources of pollutants have grown more complex and the age of many of our wastewater collection and treatment systems reach the end of their useful life. At the same time, the current structure of the CWA, which hasn't been significantly reformed in over thirty years, continues to lead to a buildup of costly regulations for local ratepayers.

Paying for clean water services has primarily rested with local ratepayers, who have seen water and sewer bills increase nearly twice the rate of inflation each year for the past decade. Today, 40% of households across America are paying more out of their disposable incomes for wastewater management than what EPA says is affordable. The affordability of water and wastewater services is becoming so acute for lower-income ratepayers that some view it as a significant civil rights and environmental justice issue.

Despite the decrease in federal spending on water infrastructure over the past 20 years, NACWA believes there is still a significant federal role in ensuring water and wastewater services remain affordable to all Americans. Specifically, NACWA recommends that Congress pursue three main policy approaches to address the affordability challenge:

NACWA Written Statement
Senate EPW Hearing
Federal Role on Keeping Water and Wastewater Rates Affordable
April 7, 2016
Page 1

- Significantly increase funding for the Clean Water State Revolving Fund (CWSRF) program and ensure investments in municipal bonds remain tax-exempt so that communities continue to have access to low-cost financing for capital investments in water and wastewater infrastructure;
- Modernize the Federal Clean Water Act to ensure that the regulatory framework remains affordable to ratepayers and effective for meeting today's clean water challenges; and,
- Ensure lower-income ratepayers who struggle to pay water and sewer services have the financial support to continue accessing safe and clean water.

Renew the Local, State and Federal Clean Water Investment Partnership

On average, water and wastewater ratepayers are spending nearly \$100 billion annually for water and wastewater services. Despite this investment, EPA's quadrennial needs surveys for drinking water and wastewater treatment systems indicate that well over \$600 billion in additional spending will be needed over the next twenty years for water and wastewater treatment needs. Ratepayers cannot be expected to shoulder this burden alone.

Except for the years just after the 1972 enactment of the CWA when Congress provided grant financing to meet obligations under the Act, ratepayers have financed wastewater infrastructure largely through the use of low-cost loans provided by the Clean Water State Revolving Fund (CWSRF) Program and/or by issuing tax-exempt municipal bonds. Since the CWSRF was established in the 1980s, over \$100 billion has been leveraged and invested in wastewater infrastructure; and just since 2003, over \$250 billion of tax-exempt municipal bonds have been issued for water and wastewater infrastructure investments. By establishing these programs, Congress recognized that the federal government has a critical role to play in providing communities a way to pay for water and wastewater infrastructure affordably.

The CWSRF and tax-exempt municipal bonds have been exceedingly successful and are key pillars in helping clean water agencies maintain affordable rates for wastewater treatment services. However, in recent years, both programs have been at risk as federal discretionary spending for the CWSRF has been reduced and proposals to curtail or eliminate the tax-exempt status of municipal bond investments have been proposed. For Fiscal Year 2017, the President had proposed over \$400 million in cuts for the CWSRF – cuts that Congress should roundly reject.

In order to ensure that communities can continue to access low cost capital to pay for capital improvements in wastewater treatment, Congress must renew its commitment to the CWSRF and provide significantly more funding for it. NACWA calls on Congress to establish a long-term sustainable funding mechanism to provide annual capitalization grants for the CWSRF that do not rely on annual discretionary spending caps and ensure that investments in municipal bonds remain fully tax-exempt.

Modernize the Clean Water Act to Affordably Meet Today's Clean Water Challenges

Today's most pressing water quality challenges are no longer the result of conventional pollutants discharged by publicly-owned treatment works, but rather pollutants from a variety of diffuse sources such as nutrient run-off from farms, air deposition of mercury and nitrous oxide from vehicles and other sources, emerging contaminants from pharmaceuticals and personal care products, and stormwater runoff from urban areas. Exacerbating these challenges is climate change, which poses significant new infrastructure challenges for water and wastewater systems. Communities in wetter regions must deal with unpredictable yet devastating storms, and communities in more arid regions must cope with diminishing water supplies caused by persistent drought. Yet the municipal clean water sector continues to confront a list of costly CWA regulatory requirements based on an antiquated statute that no longer reliably leads to significant improvement in local water quality, but that nevertheless saps ratepayer resources to confront current water quality challenges in new and more innovative ways.

NACWA believes there are common sense reforms to be made to the CWA that will lead to better water quality outcomes and help municipalities deal more affordably with today's water infrastructure challenges. These include reforms that incentivize more efficient targeting of ratepayer resources, investment in innovation and new technologies, watershed-based approaches, and partnerships.

Many of these reform proposals are outlined in recently introduced legislation by Senator Sherrod Brown of Ohio. Senator Brown's *Clean Water Affordability Act* includes such things as extending National Pollutant Discharge Elimination System (NPDES) permit terms, codification of integrated planning approaches, and enabling use of lower cost treatment technology designed specifically for managing extreme wet weather events. If adopted, these proposals will save ratepayers money, enable communities to develop more resilient infrastructure, and lead to greater water quality gains because ratepayer resources would be targeted toward investments that have the greatest water quality benefit. More importantly, the cost of delivering clean water services can be stabilized without jeopardizing water quality.

Ensuring Clean Water Access for Lower-Income Ratepayers

Even with adoption of these recommendations, lower-income ratepayers whose wages have stagnated for the past several decades may continue to experience hardship in paying for water and wastewater services. NACWA, along with several other water associations, are examining the potential use of alternative rate structures and other forms of ratepayer assistance programs that may be available to help this population continue to afford water and wastewater services. The advantage of these programs is that they provide much needed financial support for low income households while also allowing utilities to raise the revenues necessary for clean water infrastructure investments.

Several communities already have assistance programs in place to aid low-income ratepayers, and Congresswoman Marcia Fudge (D-OH) has proposed a pilot program at the national level to further explore this idea and potentially provide a solution to this challenge. At the same time, Congressman Earl

Blumenauer (D-OR) has introduced bi-partisan legislation with Congressmen John Duncan (R-TN) and Richard Hanna (R-NY) to study whether a national ratepayer assistance program for water and wastewater services is viable. NACWA strongly supports these efforts.

Conclusion

It is clear that the current prescription of rate increases and expanding municipal debt loads to pay for the investments needed in our water and wastewater infrastructure is not sustainable. Simply stated, absent a renewed approach to federal investment in water and wastewater systems coupled with reforms to the CWA regulatory compliance framework, the future of maintaining – let alone adding to – the record of water quality gains is at risk.

**Commissioner Todd Portune
Board of County Commissioners
Hamilton County, Ohio
On Behalf of the “Perfect Storm” Communities Coalition**

**Written Testimony for the Hearing Record
Senate Committee on Environment and Public Works**

“The Federal Role in Keeping Water and Wastewater Infrastructure Affordable.”

April 7, 2016

Chairman Inhofe, Ranking Member Boxer, and Members of the Committee:

My name is Todd Portune, and I serve as a Commissioner on the Hamilton County, Ohio (County) Board of Commissioners. I am submitting this written testimony for the hearing record on behalf of the County and the “Perfect Storm” Communities Coalition (Coalition). The Coalition is made up of communities dealing with a “perfect storm”: combinations of high unemployment, high home foreclosure rates, stagnant economic growth, and an exodus of business and industry, while being mandated to meet expensive combined sewer overflows (CSOs)/separate sewer overflows (SSOs), wet weather consent decrees and stormwater regulations.

Hamilton County and the Coalition very much appreciate the Committee holding this hearing on the Federal role in keeping water and wastewater infrastructure affordable for the ratepayers who we represent with this testimony. Much of the necessary investments that need to be made in water and wastewater infrastructure are being required to meet water quality improvements mandated by the federal Clean Water Act (CWA) administered by the U.S. Environmental Protection Agency (EPA).

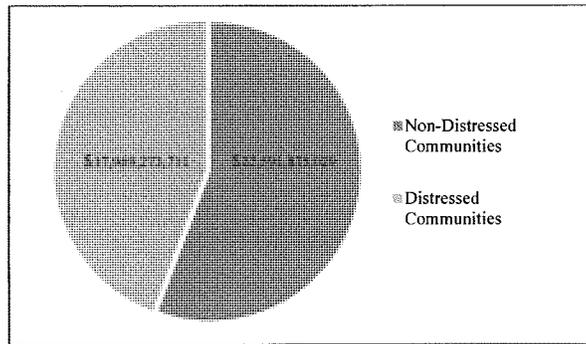
Across the Nation, affected communities recognize the need to effectively manage their wastewater and stormwater, and desire to improve local water quality, but at a cost that is more affordable to local residents. We understand that ignoring wet weather issues, such as combined sewer overflows and stormwater runoff, can contribute to damaging floods, extensive erosion and the release of pollutants into water bodies.

Yet, given the tremendous unnecessary costs associated with traditional gray-build infrastructure (e.g. stormwater retention tunnels) versus allowing more innovative and adaptive approaches (e.g. green infrastructure) to control wet weather events, communities must be allowed to prioritize investing their limited resources in the most cost-effective, accountable solutions that can result in the greatest immediate water quality benefits for local watersheds.

The stakes are huge for the hundreds of communities beset with the massive costs of complying with EPA mandates for CWA compliance, from court-driven consent decrees, administrative orders, and permit compliance mandates. Over the last ten years alone, over \$40 billion in mandated wastewater and stormwater upgrades have been required of communities large and small across the nation, with many of these communities located in regions continuing to experience some of the worst economic conditions in decades.

The costs to the ratepayers of traditional gray-build water treatment methods to meet federal CWA wet weather mandates are enormous. Some of these investments cost billions of dollars per community and lead to massive rate increases for local ratepayers. Under normal economic conditions, these mandates are often not affordable; but in the current economy, incurring these costs will have long-term negative economic and societal impacts. In fact, almost \$18 billion, or 44 percent of the total clean water compliance action costs (Figure 1), falls on these distressed communities.¹

Figure 1: Distribution of Compliance Action Costs



In Hamilton County, for instance, our poverty rate for individuals living in the County escalated by over 70 percent from 2000 to 2014,² translating into nearly 38 percent of County households (in 2014) bringing in less than \$35,000 in total household income per year.³ And, almost one in ten households in the County made less than \$10,000 annually in 2014.⁴ These are the families that will be hardest hit by the astronomical sewer rate increases set for the future in my County. These are the families who will pay 350-percent more (gray-build) for sewer in the next 30 years.

¹ The analysis considers the costs to distressed communities, using the following Economic Development Administration (EDA) economic distress criteria:

- Unemployment rate: A region that has an unemployment rate that is, for the most recent 24-month period for which data are available, at least one percentage point above the national unemployment rate.
- Per capita income: A region that has a per capita income that is, for the most recent period for which data are available, 80 percent or less of the national average per capita income.

Source: Case Data from the Integrated Compliance Information System (ICIS) Federal Enforcement and Compliance (FE&C) Dataset. Unemployment data are from the April 2014 Current Population Survey. Income data from the Bureau of Economic Analysis and are for 2012.

² U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE), 2000 and 2014

³ U.S. Census Bureau, American Community Survey 5-Year Estimates (2010-2014), income and benefits in 2014 inflation-adjusted dollars.

⁴ Ibid.

Communities, like mine, that have been dealing with the impacts of a combination of high unemployment, housing foreclosures, declining water and sewer use, and economic challenges now must also face the enormous burden of complying with mandated gray-build sewer upgrades. While the federal government used to provide hefty grants for prior CWA mandates in the past, no such grant programs exist today to help cover these new mandates. In fact, unless major changes are made in how EPA allows communities to solve these clean water problems, my county alone will have to spend hundreds of millions more for future, mandated gray-build solutions than if we were allowed to adopt adaptively managed, green-build infrastructure and watershed approaches over the next several decades.

We believe that by using these innovative green-build approaches to correct CSOs, SSOs, and stormwater impacts during wet weather events, we can provide significant savings to our ratepayers over the long-term. Communities must be able to develop alternative wet weather management approaches to lessen the financial impact, and have found that they can achieve the same or better water quality results at a lower cost using locally-driven solutions that combine watershed approaches, green infrastructure, low impact development, gray-build infrastructure, and other innovative techniques to reduce wet weather impacts.

Communities must be allowed the flexibility to try new, innovative approaches in meeting the objectives of the CWA in a way that can both ensure these investments are made intelligently and to minimize the impact on our already stressed ratepayers. In fact, the EPA in May 2012 released their final Integrated Municipal Stormwater and Wastewater Planning Approach Framework (Framework)⁵ to allow for better flexibility and prioritization of a community's resources in dealing with the variety of compliance and permitting requirements under the CWA.

While we believe the EPA Framework could prove to be a solid approach towards providing more flexibility under the CWA, we question the EPA's willingness, absent specific legislative direction, to apply their Framework consistently, through changing leadership inevitable over time, in a long-term, broad, transparent, programmatic, fair, and balanced manner. This is why my county and the Coalition wholeheartedly supports the enactment of S. 2358, the "Clean Water Compliance and Affordability Act", as introduced by Sens. Rob Portman and Sherrod Brown on a bipartisan basis.

S. 2358 requires the EPA Administrator to carry out a program to work cooperatively with, and facilitate the efforts of specifically identified pilot showcase communities to develop and implement integrated plans to meet their wastewater and stormwater obligations under the CWA. These pilot programs would focus on cost-effective and flexible compliance methods consistent with the EPA's Framework.

The bill directs the EPA Administrator, in consultation with state regulators, to select at least 15 pilot showcase communities to participate in the program over five years. It sets forth selection factors, including prioritizing those communities with a history of knowledgeable, detailed, and comprehensive efforts to develop integrated and adaptive clean water management practices. It is important to highlight that those communities wishing to revise their existing Long Term

⁵ The Framework is available here: https://www3.epa.gov/npdes/pubs/integrated_planning_framework.pdf

Control Plan to include a more cost effective and innovative approach to compliance would be eligible for relief under this pilot program.

S. 2358 would provide standards for approval of a municipality's integrated plan under the pilot program. This would provide community planners with the basic transparency regarding the EPA's expectations, thereby alleviating mounting frustration in what many local leaders characterize as a guessing game of regulatory expectations. The existing uncertainty of the EPA's approval criteria forces communities such as Hamilton County to incur unnecessary and redundant expenditures to develop both a preferred long-term plan and a costly contingency plan as a precautionary measure.

Instead of finding the EPA as a fully engaged partner, too often communities incur unnecessary planning expenditures because the agency does not clearly tell them what they expect in these adaptive plans, and default to non-adaptive approaches of big cement pipes buried deep underground (i.e. gray-build). By instructing the EPA to be an active partner with pilot showcase communities, S. 2358 could immediately help reduce overall project costs by eliminating the uncertainty that produces such costly contingency planning requirements.

In addition, S. 2358 includes financial capability criteria, prioritization of obligations under the CWA, and the use of innovative and flexible approaches to meet clean water obligations. The bill also allows priority to be given to municipalities seeking to develop and implement approaches that adapt to changed or uncertain future circumstances.

Finally, the bill, in carrying out the pilot program, would provide additional authorities to the EPA Administrator regarding extending the allowable National Pollutant Discharge Elimination System (NPDES) permit term from five years to up to 25 years, modifying the implementation terms of a consent decree, and providing additional regulatory flexibility in approving and implementing an integrated plan that includes adaptive approaches.

Enacting S. 2358 would allow the EPA to provide communities like mine and those of the Coalition with the flexibility to meet these huge regulatory challenges in a more affordable and cost-effective manner, but still remain consistent in achieving the environmental requirements of the CWA and existing regulations. S. 2358 would provide congressional authorization, direction, and guidance in implementing the EPA's own Framework, which, unfortunately, the EPA has heretofore failed to fully implement.

An important component of the Framework would enable communities to more readily apply green infrastructure technology to storm water management. Unlike traditional gray-build projects, which are removed from the public eye and serve a limited function, green infrastructure projects also provide the public additional social, economic, and environmental benefits as a return on their clean water investment.

Not only does this technology offer a far more cost effective investment, but it also offers communities continued savings in reducing the overall amount of water that enters the system and that must be processed. And, the transparency of naming showcase communities as required

by S. 2358 would offer a promising opportunity to generate large quantities of meaningful data on green infrastructure and how it could best be optimized.

Enactment of S. 2358 would encourage the EPA to commit to a broader, more programmatic approach for using their Framework process. By directing the EPA to name at least 15 specific communities as pilot showcase communities over the next five years, Congress would ensure this commitment through the open and transparent demonstration of the Framework's newly authorized flexibility.

In our opinion, S. 2358 will provide the legislative foundation for EPA to provide additional flexibility that equates to more affordable, common sense approaches to meeting CWA wet weather requirements by promoting innovation and adaptability, and not simply mandating the most expensive up-front solutions available.

In our view, CWA tools like integrated planning, ongoing adaptive management approaches, and innovative watershed-based permits and pollution controls all mentioned in the Framework will not be successfully implemented unless the EPA is committed (financially, legally, and technically), from the EPA headquarters out to the Regions, to make them work. Through the enactment of S. 2358, we believe that the naming of pilot showcase demonstration communities would ensure swift and thorough implementation of the Framework and ensure measurable long-term successes for these more flexible and affordable approaches.

Additionally, communities that invest their scarce resources in developing integrated plans under the Framework must have a long-term commitment from the EPA in order to ensure the regulatory certainty is in place to make these innovations work under the CWA. S. 2358 encourages and authorizes long-term investments in innovative approaches under the EPA Framework, activities that can only be successful if given enough time to work. S. 2358 ensures that pilot showcase demonstration communities are identified and that the EPA is on record as approving such integrated plans, along with the related CWA permits or consent decrees necessary over the long-term.

Hamilton County, Ohio and the "Perfect Storm" Communities Coalition believe that S. 2358, if enacted, can help to further the use of these innovative, cost-effective approaches in complying with the CWA. We encourage the Senate Environment and Public Works Committee to take up and approve S. 2358. We look forward to working with this Committee, the Congress, and the EPA in enacting and implementing S. 2358.

We also look forward to the transparent and accountable implementation of the EPA's Integrated Municipal Stormwater and Wastewater Planning Approach Framework in developing flexible, innovative approaches in meeting water infrastructure affordability challenges, including the creation of pilot showcase communities. And, through such a legislated programmatic commitment to the Framework, the EPA could assist communities like mine and those of our Coalition in complying with the CWA using cost effective alternative approaches to better address expensive wet weather water quality challenges.

Thank you for the opportunity to provide this testimony for the hearing record and I would be happy to answer any questions that you and Members of the Committee may have on this testimony.

Sincerely,

Todd Portune
Commissioner
Hamilton County, Ohio



**STATEMENT BY
UNITARIAN UNIVERSALIST SERVICE COMMITTEE
Cambridge, MA**

**to the
U.S. SENATE COMMITTEE ON ENVIRONMENT and PUBLIC WORKS**

**Hearing on:
"The Federal Role in Keeping Water and Wastewater Infrastructure Affordable"
April 7, 2016**

*"At the dawn of the 21st century, much of our drinking water infrastructure is nearing the end of its useful life. There are an estimated 240,000 water main breaks per year in the United States. Assuming every pipe would need to be replaced, the cost over the coming decades could reach more than \$1 trillion, according to the American Water Works Association (AWWA)."*¹

The recent crisis with Flint, Michigan's water system has drawn the public's attention to our need for not only significant investment in this most basic public service, but the crisis facing low-income Americans to pay for the service while meeting other basic needs. Public officials at all levels of government wrestle with the challenges of mobilizing the significant sums of money needed to finance infrastructure and meeting environmental mandates.

As we set a course for long over-due capital improvements, public officials must also attend to a disturbing trend — that of widening inequality between those who have affordable, safe drinking water and adequate sanitation, and those who do not. This gap is one of the most critical moral challenges our nation faces today, and it is being compounded by increasing economic hardship and the impacts of climate change.

The deep affordability crisis in the U.S.

Water is expensive. Data from the Consumer Expenditure Survey shows that water bills have grown much more sharply than other household utilities like gas and electricity.² The National Consumer Law Center notes that from 1990-2006, water and wastewater bills increased by 105.7%, while household income increased by only 61% over the same period.³ In 2014, Circle of Blue reports found that in five U.S. cities (Chicago, San Francisco, Tucson, Austin, and Charlotte), water and

sanitation rates increased more than 50% over five years. On average, rates have grown at 5-8% per annum and over 41% since 2010.⁴ In 2015, average water bills varied widely. In Seattle, the average family of four was paying \$310 per month for water, wastewater, and storm water fees. In Salt Lake City, that monthly bill was just \$59. But Circle of Blue's data suggests that for residents who have lower incomes, many cities' water costs are causing families to make impossible choices between keeping up with their financial commitments and meeting other basic necessities, such as medicine, food, transportation and housing.

There is currently no systemic data collection on affordability, but recent studies show that the cost of water is extremely unaffordable for many lower-income Americans. A 2010 study by the Water Research Foundation, supported by the EPA, found that *conservatively*, 15% of Americans likely struggle to meet their water bills. UUSC commissioned research from utilities economist Roger Colton shows that for every county in California, using standard median household income calculations to judge affordability, the lowest quintile will pay between 11-19% of their monthly household income for water. The U.S. Conference of Mayors reports similar data for 30 cities in California.⁵ Additional study and action are urgently needed.

Low-income people in rural areas face serious affordability challenges. The data on rural water costs is even more sparse than that on urban rates, but what does exist is striking. The Bureau of Labor Statistics reported that in 2011, rural residents paid on average almost twice the annual cost for "water and other utilities" as urban residents.⁶ Further, studies show that rural communities tend to have both lower average incomes than cities and higher costs per person for water infrastructure, in addition to facing more acute threats of water contamination from unregulated agriculture runoff that can make water services unaffordable and water undrinkable. On-site wells and sanitation systems are expensive and the investments needed to extend town or country infrastructure to rural areas are not being made.

The affordability crisis in the U.S. does not affect everyone equally. In fact, it exacerbates various forms of discrimination. For example, there is new evidence related to water affordability and accessibility being added to the vast body of extant research documenting the existence of environmental racism.

Massachusetts Global Action's *Color of Water* report, one of the only studies of its kind, show that Black Boston is ten times more likely to receive a water shutoff notice than White Boston.⁷ Michigan offers another stark example: half of all African-American Michiganders live in towns under austerity measures that daily put at risk their access to safe, affordable drinking water and sanitation, compared to 3% of White Michiganders.⁸

The multi-faceted consequences of unaffordable residential rates

UUSC's research documents, in detail, the serious economic, health, educational, psychological, social, and economic effects for families and our society when households cannot keep current with their water and sewer bills.

In many states, not having running water in one's home can contribute to child protective services removing children and placing them in foster care. In Michigan, where thousands of Detroit residents were the victims of Detroit Water and Sewer mass water shutoff program beginning in 2013, shutoffs threatened parental rights and family unity. A study in Michigan found that "utility shutoffs" were a factor in at least two dozen instances of child removal.⁹ In over half of these cases, there was no allegation of child abuse and the lack of utility services in the home was one of the major factors contributing to the children's removal. Parents facing recent mass water shutoffs in Detroit and Baltimore voiced fears that their children would similarly be taken away because of their inability to pay their water bills.¹⁰ Adding to the tragedy, if children are taken into foster care, the foster family's water bills are subsidized. Yet, there are no sufficient programs for low-income water customers to keep their water running in the first place.

Unpaid water bills can lead to eviction and foreclosures. In Baltimore, where water bills can be included in rent, the inability to pay a water bill can lead to eviction.¹¹ A Baltimore homeowner's home can be placed up for tax sale if there is over \$500 of unpaid water bills. In Detroit and elsewhere, unpaid water bills can be placed as a lien on a customer's property. Unpaid, these liens lead to foreclosures and the loss of one's home. There is evidence that in Detroit, the inability to keep up with bills and property charges contributed to families having to leave the city.¹²

People can face legal action, arrests, and fines when they cannot keep up with the cost of water and sanitation. Beginning in 1999, The Alabama Department of Public Health began citing people who did not have functioning septic systems for failing to uphold state environmental and public health standards.¹³ These on-site systems, due to the special nature of the soil, fail unless very expensive technical upgrades are put in place, costing from \$10-40,000 per household. People who could not afford to install these systems were arrested and live with arrests on their permanent records simply because they could not afford water and sewer infrastructure. After a water shutoff in Michigan, people who attempt to provide themselves with needed water by reconnecting their water pipes without the utility's permission can face criminal charges. And, in many municipal jurisdictions, existing laws effectively criminalize homeless persons who lack access to safe water and toilet facilities, by making necessary bodily functions done in public a crime.

If one can't pay one's water bill in the United States today and the water is shut off, one is at risk of losing one's health, home, children, and freedom.

The necessary role of the federal government

Every person must have access to safe, sufficient, affordable drinking water and adequate sanitation, or run the risk of serious health effects. Given this truth, the federal government has a critical role to play in guaranteeing access on an equal basis across the entire country. Presently, there is no standardized and enforceable national affordability standard for water in the United States. At best, the EPA gives limited guidance on affordability based on median household income — an inappropriate marker — and the scope of this guidance is very limited.

The EPA's regulations on affordability are, in practice, largely ineffective.

These guidelines are used to determine when Clean Water Act and Safe Drinking Water Act mandates may cause economic distress for municipalities.¹⁴ The commonly-used threshold of 2.5% of median household income is often used to measure affordability of water in a given municipality, with 4.5% as the threshold for all water and sanitation services.¹⁵ Yet, the regulations do not seem to have the intended impact. For instance, the Congressional Research Service reports that the EPA has judged all available technologies for small water and sanitation systems compliance “affordable.”¹⁶ The American Water Works Association and the Water Environment Foundation report that states further do not approve exemptions from compliance because it is so burdensome to document when an exemption is based on “un-affordability.”¹⁷

In addition to being ineffective, the guidelines do not ensure affordability, and in fact, disproportionately burden low-income households. The regulations use median household income as a measure. **UUSC's research shows that for every county in California, following this standard enforcement measures are allowable even though they will result in the lowest quintile paying from 11-19% of their monthly household income,¹⁸ a proportion that far exceeds international standards.** The U.S. Conference of Mayors report on affordability in 30 cities in California reached similar results.¹⁹

In the 20th century, the US government and federal agencies have affirmed the core value of equality in accessing public services for all, and environmental justice. The Environmental Protection Agency defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”²⁰ If the nation is to live up to our values, it must take steps to make water affordable for all people, no matter their income, address, race, gender, age, or ability.

We recommend four necessary actions that are appropriately within the scope of the federal legislative and executive branches:

1. Investigate and report the extent of insufficient water and sewer systems and federal financing for piped and on-site systems, and water quality enforcement in historically disadvantaged communities in the U.S.

- *Mandate a thorough OMB, CRS or GAO study with required reporting to Congress, including a robust plan for regional fact-finding with publicly accessible hearings.*
- *Strengthen the Clean Water Act and Safe Drinking Water Acts, as needed and/or propose new legislation based on the report's findings.*
- *Prioritize and target water and sanitation funding to ensure access to those who do not have it and vulnerable populations first, and other investments as needed.*

2. Improve data collection on water affordability and equal access. Without ongoing accurate data, we have no way to ascertain the full extent of the water and sanitation crisis. Without data, we cannot assure accountability on the part of utilities, municipal, state, and federal governmental bodies for ensuring the welfare of residents and the impact of policies (or lack thereof).

- *At a minimum, require reporting on shutoffs by population from all recipients of federal revolving loan funds under the Clean Water Act and the Safe Drinking Water Act. Reformulate the Census and American Community Survey to track water and sanitation access and costs at the household level, along with water shut-off notices and disconnections by age, gender, race, and ability.*

3. Establish a national, enforceable affordability standard for drinking water and sanitation in the United States. Presently, the U.S. does not include affordability of services, piped or on-site, for the lowest-income consumers in its law and regulation.²¹ Further, the EPA's guidance on affordability is used narrowly for compliance with federal mandates and is based on median household income — an inappropriate marker — and the scope of this guidance is very limited.

- *Adopt new legislation or amend existing legislation to incorporate an affordability standard of 2.5% of monthly household income for all water-related services (drinking water, sewer, storm water), low-income assistance programs, and funding for on-site systems for low-income households. The standard must include shutoff protections for low-income families with children under 18 years old or elders over 65, pregnant and lactating mothers, persons with disabilities, as well as persons with chronic or catastrophic illnesses.*

4. Integrate the new affordability standard and protections in water quality enforcement actions and federal funding mechanisms.²²

- *Require the EPA to immediately adopt the above recommended affordability standard and protections for vulnerable populations in all its enforcement actions and criteria for grants and revolving loan funds.*

It is imperative that the cost of clean water not be unjustly transferred onto the backs of low-income water customers. Agriculture and extractive industries pollute drinking water sources, shifting the burden of water treatment to ratepayers through their drinking water bill. For example, Des Moines Water is suing four counties upstream because it has spent millions of dollars in investment in equipment and treatment to remove nitrate caused by agricultural runoff from its drinking water. Des Moines Water would have to raise rates 4-6% each year for the next 30 years to pay for this. Some 18% of residents of Des Moines, Iowa are considered low-income. Their water bills are already unaffordable. We must achieve both water quality and affordability for water consumers.

¹ <http://www.infrastructurereportcard.org/drinking-water/>

² Oriol Miroso, "Water Affordability in the United States: An Initial Exploration and an Agenda for Research," *Sociological Imagination* 51.2 (2015), 48.

³ National Consumer Law Center, *Review and Recommendations for Implementing Water and Wastewater Affordability Programs in the United States* (March 2014), 3.

⁴ U.S. Conference of Mayors, *Public Water Cost Per Household: Assessing Financial Impacts of EPA Affordability in California Cities* (Nov. 2014),

<http://www.usmayors.org/pressreleases/uploads/2014/1202-report-watercostsCA.pdf>; Circle of Blue, *Price of Water 2015: Up 6 Percent in 30 Major U.S. Cities; 41 Percent Rise Since 2010* (Apr. 22, 2015), available at <http://www.circleofblue.org/waternews/2015/world/price-of-water-2015-up-6-percent-in-30-major-u-s-cities-41-percent-rise-since-2010/>

⁵ U.S. Conference of Mayors, *Public Water Cost Per Household: Assessing Financial Impacts of EPA Affordability in California Cities* (Nov. 2014),

<http://www.usmayors.org/pressreleases/uploads/2014/1202-report-watercostsCA.pdf>

⁶ Bureau of Labor Statistics, *Expenditures of Urban and Rural Households in 2011*, <http://www.bls.gov/opub/btn/volume-2/expenditures-of-urban-and-rural-households-in-2011.htm>

⁷ Massachusetts Global Action, "Getting Boston to Uphold the Human Right to Water"

(2008), <http://massglobalaction.org/projects/colorofwater/CWP-one-pager.pdf>

⁸ Patricia Jones calculation based on U.S. Census QuickFacts for Michigan and Michigan Department of Treasury, Emergency Management Information, http://www.michigan.gov/treasury/0,4679,7-121-1751_51556_64472---,00.html

⁹ Laura Gottesdiener, "Detroit is Ground Zero in the New Fight for Water Rights," *The Nation*, July 15, 2015, <http://www.thenation.com/article/detroit-is-ground-zero-in-the-new-fight-for-water-rights/>

¹⁰ Interview with Maureen Taylor of Michigan Welfare Rights Organization, December 4, 2014; <http://thinkprogress.org/economy/2015/04/04/3642935/baltimore-water-shutoffs/>

¹¹ Lazare, "Brewing Human Rights Crisis in Baltimore," *Common Dreams*, April 7, 2015.

¹² Georgetown Law Human Rights Institute Fact-Finding Practicum, *Tapped Out: Threats to the Human Right to Water in the Urban United States* (Georgetown Law Human Rights Institute, April 2013), 32.

¹³ Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation, Mission to the United States of America, ¶ 21, U.N. Doc. A/HRC/18/33/Add.4 (Aug. 2, 2011),

http://www2.ohchr.org/english/bodies/hrcouncil/docs/18session/A-HRC-18-33-Add4_en.pdf

¹⁴ US Conference of Mayors, *Affordability Assessment Tool for Federal Water Mandates* (2013), 3.

¹⁵ Margot Freeman Saunders, *Water Affordability Programs* (American Water Works Association, 1998), 51; US Conference of Mayors, American Water Works Association, Water Environment Federation, *Affordability Assessment Tool for Federal Water Mandates* (2013), 4.

-
- ¹⁶ M. Tiemann, "Safe Drinking Water Act: A Summary of the Act and Major Requirements", Congressional Research Service (2014), 6, <https://www.fas.org/sgp/crs/misc/RL31243.pdf>.
- ¹⁷ American Water Works Association and Water Environment Foundation, "Assessing Affordability of Federal Water Mandates: An Issue Brief" (2013).
- ¹⁸ Roger Colton, "Water Affordability by County in California," UUSC (2015), available upon request.
- ¹⁹ U.S. Conference of Mayors, "Public Cost Per Household: Assessing Financial Impacts of EPA Affordability Criteria in California Cities," (2014), <http://www.usmayors.org/pressreleases/uploads/2014/1202-report-watercostsCA.pdf>.
- ²⁰ Environmental Protection Agency, Environmental Justice, <https://www3.epa.gov/environmentaljustice/>
- ²¹ For programs supported by public tax dollars at the federal and state level the law does not even require minimum reporting of water shut offs, rates, who is served and who left out of infrastructure that is paid for by tax dollars, much less require affordability standards for the poor.
- ²² See the Consent Decree agreement and reports at <http://www.bwsc.org/REGULATIONS/Consent-Decree/consent-decree.asp>. See also EPA enforcement, at <https://www.epa.gov/enforcement/boston-water-and-sewer-commission-settlement>. See also Conservation Law Foundation at <http://www.clf.org/your-state/massachusetts/>.