



ICC Roundtable Teleconference: The Lack of Basic Sanitation for a Reported 1.6 million Americans





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Dear Members and Stakeholders:

As the developer of model codes for the construction industry, and a service provider to public and private stakeholders, the International Code Council (ICC) believes its responsibilities include engaging our Members and stakeholders in conversation about emerging and persistent safety and public health issues.

ICC began a series of roundtables to do just that. The roundtables brought together multidisciplinary stakeholders who discuss topics of interest and its relevance. Topics to date have included fires in buildings under construction, the code adoption cycle, those without indoor plumbing in the U.S., and how the ranks of experienced code officials will be seriously impacted by retirement.

We are pleased to release this report from the August 25, 2014, roundtable teleconference exploring the ongoing problem of 1.6 million Americans Lacking Indoor Plumbing. The moderator was Barbara Higgens, CEO and Executive Director of Plumbing Manufacturers International.

The report of the roundtable follows and offers perspectives on the challenges and possible methods to address this safety and public health challenge in the built environment.

A handwritten signature in black ink that reads "Dom Sims".

Dominic Sims, CBO
Chief Executive Officer

A handwritten signature in black ink that reads "Stephen D. Jones".

Stephen D. Jones, CBO
Immediate Past President
ICC Board of Directors

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ICC convened a roundtable teleconference on Monday, August 25, 2014, to discuss a published report that 1.6 million Americans in nearly 630,000 occupied households lack complete indoor plumbing facilities, meaning they are without one or more of the following: a toilet, a tub or shower, or running water.

The results come from the American Community Survey—data supplied through the U.S. Census Bureau—and indicates a high number of those without indoor plumbing reside on Native American tribal lands, and in Alabama, Alaska, Kentucky, South Dakota and West Virginia, but could be anywhere in the U.S.

It was suggested the research should be considered and addressed as the question about flush toilets is controversial, particularly for certain groups that don't think the Census should be asking the question and could lead to skewed results. Since these are questions asked of individuals who provide their own assessment and definitions, and the answers were not evaluated with an inspection performed by a professional who uses the same standard for every case, there is room for error.

ROUNDTABLE GOALS AND PANELISTS

Roundtable moderator Barbara Higgins, CEO and Executive Director of Plumbing Manufacturers International (PMI), a plumbing industry association representing 30 manufacturers, cited the importance of working together through coalitions and partnerships to address issues important to the plumbing industry.

The goals for the call were stated as follows:

- Raise awareness and bring attention to the issue
- Highlight the importance of proper sanitation
- Discuss root causes of the issue and roles played by government, policy makers, inspectors, codes officials, codes and standards writing bodies and the industry
- Work together on the beginnings of an action plan
- Try to improve the current situation as best we can with the tools we've uncovered.

Joining Ms. Higgins on the panel were:

1. Jim Olk, Panel Co-chair, Building Official for the City of Farmers Branch, Texas, and Chair of the International Code Council PMG Membership Council;
2. Michael Leonhardi, Southern District Supervisor for the State of Alabama Plumbers and Gas Fitters Examining Board;
3. Alex "Cash" Olszowy, Building Inspector Supervisor for Lexington Fayette Urban County Government in Kentucky, and Vice President of the International Code Council Board of Directors;
4. Efrain Perez, Director of Corporate Engagement for World Vision;
5. Dr. Kurt Usowski, Deputy Assistant Secretary for Economic Affairs for the U.S. Department of Housing and Urban Development Office. He runs the HUD portion of the American Housing Survey;
6. Holly Todd, Sustainable Building Specialist with Kentucky Habitat for Humanity;
7. Jim Kendzel, Executive Director and CEO of the American Society of Plumbing Engineers.

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Each panelist was introduced and offered an opening statement with a description of their respective organizations and/or their personal interest in the topic. Each provided their experiences and thoughts concerning the problem of indoor plumbing for so many Americans.

COMMON CAUSES

The most commonly identified and discussed root causes for the continued lack of complete indoor plumbing in the United States were:

- Lacking or degraded local potable water supply and sewer infrastructure
- High cost of installation of on-site water supply and sewer treatment systems. Costs can be even higher for certain challenging geographies.
- Lack of awareness of the link between sanitation and availability of indoor plumbing in some locales.

The lack of infrastructure for plumbing in many rural areas was cited as one of the big hurdles to overcome and a key challenge in addressing the problem. For the purpose of this discussion infrastructure was defined as public: water supply, waste management systems and wastewater treatment.

Affecting change in infrastructure was seen to be outside of the control and beyond the scope of the roundtable—a very large and expensive issue not easily addressed or solved. Ms. Higgins said the plumbing industry and its needs tend to be given a low priority by local and national policymakers, despite infrastructure in the United States scoring very poorly on the report card issued by the American Civil Engineers, earning “a D-minus.” Ms. Higgins added, “We are leaking 1.7 trillion gallons of water annually.” The hope is that through this coalition and others infrastructure will be kept in the news, awareness raised and effective solutions sought.

Another issue discussed was the lack of adopted building codes and/or their enforcement in several jurisdictions in the affected areas. Panel co-chair Jim Olk said where modern plumbing codes are adopted and enforced, and enforcement is active, the number of people without sanitary plumbing is minimal. It’s in the areas where no codes are adopted, or where there is no enforcement, where people are at risk.

Panelists representing Kentucky and Alabama, two states having higher concentrations of those lacking indoor plumbing, were among those citing poverty and lack of education about the necessity of proper sanitation to the maintenance of public health and safety as a culprit. In many rural areas outhouses are still common. Some households and rural communities continue to use untreated water taken directly from streams as opposed to wellwater or public supplies. And unsafe, untreated waste disposal threatens the health of local residents and the environment alike. Even where code compliance is possible, it is difficult for those in poverty to afford modern, safer facilities.

While centralized water and sewer services are not available in some rural areas, it was noted that decentralized options such as groundwater wells, rainwater harvesting and onsite septic systems do exist and are supported by local codes. However, in these cases the extra cost required to purchase and install system components were often cited as prohibitive. Generally, it was not the cost of plumbing fixtures (toilets, bathtubs and faucets) that was preventative. Instead it was the systems supplying the water and treating wastewater.

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IDENTIFICATION OF POTENTIAL SOLUTIONS

To address the identified common root causes of continued gaps in indoor plumbing nationwide, roundtable participants shared best practices currently being used and concepts for improvement.

In the interest of reducing costs for onsite water source and sewage disposal systems Jim Kendzel mentioned ASPE's involvement in a competition held at the inaugural Water Innovation Challenge in Singapore. He indicated that teams of four from various countries were comprised of a plumbing engineer, two plumbing apprentices, and a web marketing/graphics expert. They were brought together to develop a sanitation and waste system that could be created inexpensively using materials in a Bangladesh village; a cost effective rain water catchment system also built with materials in the area; and marketing materials that could be understood by the people in the village. Perhaps a similar think tank/competition to develop cost-effective solutions to problems that remain in the U.S. could be considered.

The participants concluded that more research and study may be needed with regard to packaged plumbing services or onsite supply and treatment of water. This could allow new technologies to enter the marketplace, lowering costs and expanding the type of sites where systems could be installed. It would also provide communities with solid information on when and how malfunctioning systems must be addressed to balance the need for waste disposal systems and the needs of the local environment.

Efforts by the code community to streamline permitting and allow the use of more innovative technologies might speed the process of addressing these challenging and pressing needs. Current processes for approving onsite wastewater treatment technologies differ from state to state. This makes it extremely costly and time consuming to introduce new technologies, and increases costs across the board. It was noted that the U.S. EPA has begun to study this issue and that this and other efforts to reduce "red tape" could significantly improve the time and costs to implement these systems. Collaboration between organizations such as Habitat for Humanity and code officials could also help to identify and reduce other impediments that make it difficult to aid those in need of indoor plumbing assistance. All agreed that adherence to the code was of utmost importance, but that authorities having jurisdiction should also consider the health implications of households continuing without indoor plumbing.

Efrain Perez discussed World Vision's [Storehouse](#) program—a network of warehouses across the country that partner with manufacturers, wholesalers and distributors of plumbing products, helping them repurpose these products and make them available to other nonprofits involved in the refurbishing and rehabbing of housing stock in rural or urban areas—connecting people who have excess inventory to people who need it.

What World Vision does is helpful, but Ms. Higgins noted that fixtures and fittings are not the major cost involved. There is a very real issue of the actual availability of safe drinking water to get to fixtures and piping, and the ultimate disposal of the waste. Well and cistern water supplies are considered potable, but may need additional treatment. These local sources may be an alternative to extending costly centralized supply and treatment infrastructure. Septic tanks, with much more substantial installation costs, seem to be a bigger problem. And in some areas, the ability of the soil to percolate can make a traditional septic system difficult or even impossible to implement. Similarly, for rainwater harvesting systems, the purchase and installation of the storage tank and pumps is the largest cost and can be prohibitive. Groundwater wells involve a significant cost for the drilling of the well, which may be very deep or difficult to drill in some areas, as well as the installation of the casing, pump and supply line.

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Even for centralized systems, it was mentioned that connection costs for homeowners could be a major impediment as well. Even if public water service or sewer service becomes available in an existing neighborhood, the cost to install supply and waste lines from the street to each house can cost several thousand dollars, placing it out of reach for many impoverished households. In fact, when a new service is added to an area, local residents may be required to connect to the system. Financial subsidies, grants and loans to help hook up households in need would be a great help. Financial assistance programs do exist, but they vary widely in effectiveness and availability. Even when available, all needy homeowners may not qualify or even be aware of the assistance programs.

Tax breaks to incentivize plumbing rehabilitation or installation to address the issue was suggested; however, where poverty is an issue, tax breaks would not be an incentive as they only benefit people who have a federal tax liability. That is, where income is so low that taxpayer can't itemize, a tax break would not provide any benefit. A refundable federal tax credit, like the Earned Income Tax credit that earns money back by the amount the credit exceeds tax liability would work, but Congress rarely enacts such tax credits. Tax breaks could also be considered at the state or local level to address local needs.

In some cases households can regress from having indoor plumbing to having none. This can occur where systems such as ground water wells or septic systems require significant repairs that the homeowner cannot afford. In some communities where an outdated holding tank exists or a septic system isn't functioning properly, the health department will insist that repairs be made promptly, regardless of the expense. It was proposed that legislation could be enacted providing a different set of standards in rural areas than high-density cities, lessening the financial burden. However, such a move would simply delay necessary repairs, and could lead to environmental damages and even groundwater contamination.

Given the root causes identified and the limited ability of the represented organizations to address infrastructure issues, the group recommended a larger effort to bring together additional organizations on this topic.

Suggested organizations included the National Environmental Health Association, American Public Health Association, the U.S. Centers for Disease Control and Prevention, the U.S. Environmental Protection Agency, economic development officials who administer the state version of the community development block grant, organizations representing ground water and rain catchment, and related organizations in Canada.

Below are recommendations that came out of group discussions that met with the general consensus of all participants in the roundtable:

- Promote innovation on the part of on-site water source and water treatment system purveyors to lower costs and expand applications.
- Work to increase code acceptance for innovative on-site water source and water treatment system technologies where it can be done without adversely affecting public health and safety.
- Increase communication between organizations such as Habitat for Humanity seeking to address the issue locally and code officials to identify regulatory impediments to providing indoor plumbing.
- Make code officials aware of resources and programs seeking to address the lack of indoor plumbing such as Habitat for Humanity and World Vision's Storehouse Program to try to meet identified needs.
- Work to streamline and unify regulatory approval processes nationwide for septic systems to bring new products to market faster and lower costs.
- Convene further sessions with wider stakeholders to raise awareness and discuss potential solutions to infrastructure issues impacting indoor plumbing.