

TESTIMONY OF
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CEO, INTERNATIONAL ASSOCIATION OF PLUMBING AND MECHANICAL OFFICIALS
BEFORE THE U.S. SENATE
COMMITTEE ON ENERGY AND NATURAL RESOURCES
SUBCOMMITTEE ON WATER AND POWER

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Chairwoman Shaheen, Ranking Member Lee and members of the subcommittee, we appreciate the opportunity to sit before the Subcommittee on Water and Power to discuss the critically important issue of water use, water efficiency and the important impact water efficiency has upon our country's overall energy use.

My name is Russ Chaney, Chief Executive Officer for the IAPMO Group. The IAPMO Group, led by the International Association of Plumbing and Mechanical Officials, was founded in 1926, and remains the pre-eminent code development, product certification and testing, and training/curriculum providing organization for plumbing, mechanical, swimming pool, solar and radiant heating industries in the United States and around the world. With approximately 8,300 members, IAPMO remains the only standards body where plumbing, mechanical and solar codes are developed employing a true and fully voluntary consensus process. We proudly publish our flagship model codes, the *Uniform Plumbing Code*, *Uniform Mechanical Code*, *Uniform Solar Energy Code* and *Uniform Swimming Pool, Spa and Hot Tub Code*, as designated as American National Standards, accredited by the American National Standards Institute (ANSI).

IAPMO's membership is comprised of plumbing and mechanical professionals, inspectors, engineers, code officials, manufacturers of plumbing, mechanical and building products, plumbing and mechanical contractors, water and energy efficiency experts – all areas and expertise required in the design, installation and maintenance of our country's plumbing, mechanical, solar and hydronic systems.

In addition to providing code development assistance, The IAPMO Group provides critically needed training and education programs, including the *Green Plumbers USA* program, an

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industry-leading plumbing and mechanical product testing and certification program, a building products evaluation service and a manufacturer-preferred quality assurance program.

In 2010, IAPMO published the first green construction code in the United States, the *IAPMO Green Plumbing and Mechanical Code Supplement*. The Green Supplement is a separate document from the *Uniform Plumbing and Mechanical* codes and establishes requirements for green building, water efficiency and water reuse applicable to plumbing, mechanical, and solar energy systems. The Green Supplement serves as a resource for many progressive jurisdictions across the country that are implementing green building and water-efficiency programs. By adhering to the water-efficiency provisions found within the Green Supplement, 35 percent water savings over baseline code and EPA level requirements can be attained in both residential and commercial buildings.

Each component of The IAPMO Group works toward playing an integral part in protecting the health of people everywhere and toward making the most efficient use of our nation's most precious resource.

Just last month, IAPMO was invited to join a critically important initiative on international water efforts in the United States Water Partnership. This partnership, which was originally unveiled by Secretary of State Hillary Clinton in March, includes partners such as Coca-Cola, Procter and Gamble, the Water Institute at the University of North Carolina, nearly all federal agencies and many other notable organizations. The purpose of this partnership is:

"To ensure sustainable and equitable water management that benefits people and our environment through:

- Improving access and quality of service for water, sanitation and hygiene.
- Advancing integrated water resource management.
- Increasing efficiency and productivity of water use.
- Improving governance through stronger public and private institutions, policies

and processes."

This is a very exciting initiative that will help address water problems on a global scale.

IAPMO is proud to be a contributor to the National Institute of Building Science's Consultative Council by chairing the council's Water and Energy Efficiency Topical Committee, and we fully support the recommendations put forth by the council as published in the institute's Annual Report to the President of the United States.

IAPMO recognizes that, especially here in the United States, the energy embedded in water is both grossly under-recognized as an area of opportunity where energy savings can be cost effectively realized and is underutilized as a source of clean, renewable energy.

On Jan. 20, 2012, the U.S. EPA officially delegated the development of a Heat Metering standard to a partnership of ASTM International and IAPMO. Since that time, IAPMO and ASTM International have worked to expand the scope of their combined efforts on solar thermal technologies in support of the Heat Metering standardization project. These efforts will greatly assist the country in realizing the benefits – and improving the acceptance – of solar thermal, radiant and other hydronic technologies.

IAPMO also recognizes that that the only way for an integrated water-use strategy to be successful is to minimize consumption and maximize recovery. Fully developed codes and standards addressing the safe installation and use of water-reuse technologies such as rainwater catchment systems, gray water systems and municipally supplied reclaimed water will be critical to eliminate barriers while maintaining health and safety. In 2012, we formally adopted all technical provisions on water reuse from our Green Supplement into our baseline model code, the *Uniform Plumbing Code*. As such, the *Uniform Plumbing Code* became the first baseline code to provide guidance on the safe use of these technologies, along with a path of compliance for the installation of these systems in a model construction code.

As significant as these accomplishments – and the combined accomplishments of all the dedicated and talented people who comprise our nation's standards and codes developing organizations– are, much more needs to be done to address our water and energy needs. Specifically, we respectfully ask that the federal government consider the following actions that will greatly assist the private sector in moving forward toward a more water and energy efficient future:

- We ask that the federal government develop incentives for state and local governments to adopt and properly enforce comprehensive green plumbing codes. As good as our nation's codes are, if they are not adopted and enforced at the local level, the country cannot realize the efficiencies these codes provide.
- We ask that the federal government support the research and development of less invasive water metering and sub-metering emerging technologies and then deploy these technologies to better understand complex water-use patterns associated with various building types. This will yield very significant water and energy efficiencies through smarter sizing of our building's plumbing systems.
- Widespread energy and water auditing will provide data and information required to establish more accurate baseline metrics and will help prioritize the installation

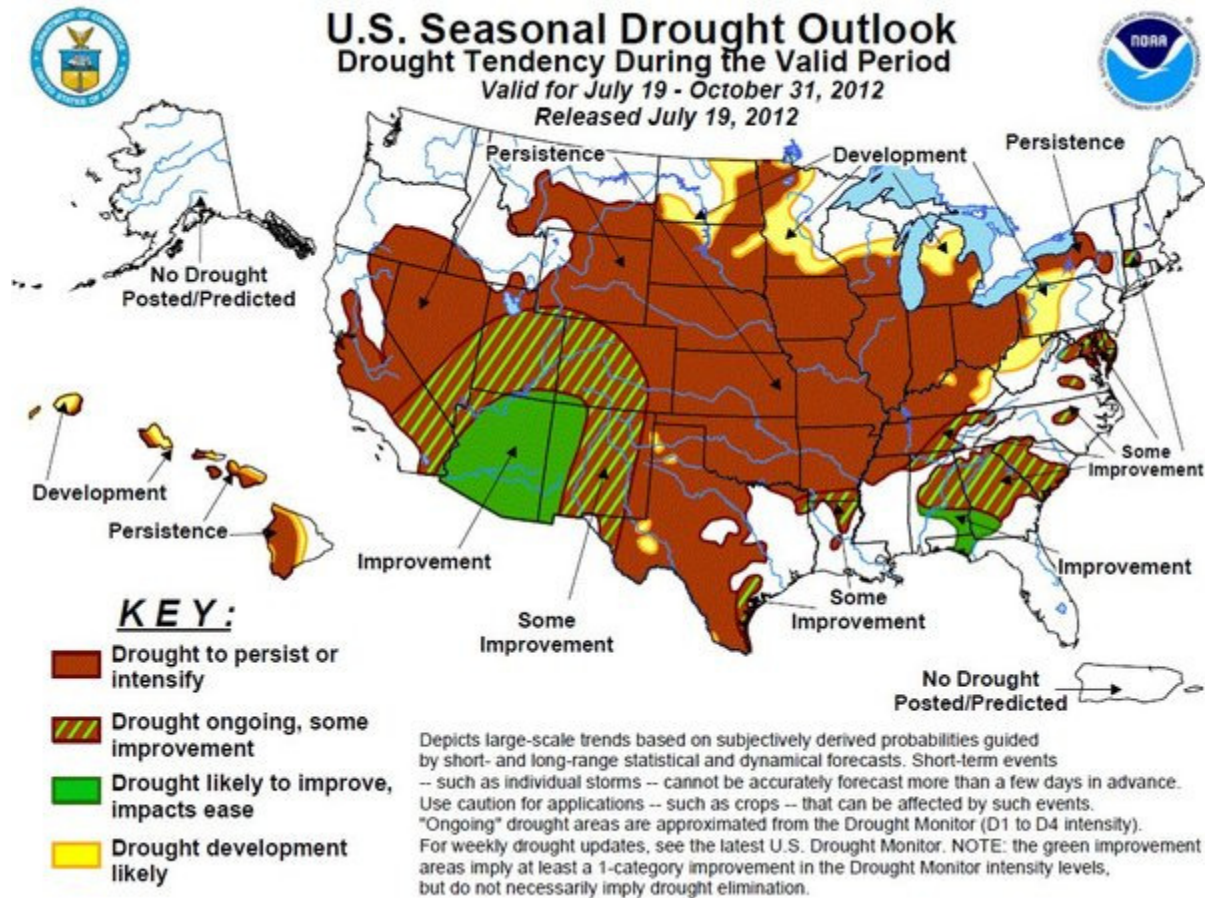
- of energy- and water-efficient technologies that provide the best return on investment and real-time or near real-time feedback to building owners. We ask that the federal government consider incentives for building owners who voluntarily have their buildings audited and implement the results of those audits to reduce their energy and water use.
- We ask that the federal government provide incentives for state and local governments to require water utilities to conduct independent leakage audits and report the percentage of water leaking from their distribution systems, along with a plan for the repair and update of systems that demonstrate excessive leakage. Much is known about the needs of our aging water infrastructure and it is critically important that these issues be addressed. According to the American Society of Civil Engineers, our water infrastructure rates a grade of D-minus with over 7 billion gallons of potable water a day wasted due to leaking water infrastructure. Keep in mind, that this is water that has been treated to strict and expensive drinking water standards and contains all of the embedded energy embodied in such treatment and delivery. Frankly, we find it unacceptable that we ask our nation's manufacturers to continually trim tenths of a gallon off of the consumption levels of their products – at considerable cost to both them and to the end consumer – when so much water is being lost between the point of treatment and the point of use. This is an area where improvement is necessary.
- The federal government should become more actively engaged in the development of necessary research programs and provide financial support for scientific study to ensure that increasingly precious water supplies are used as efficiently as possible in buildings while maintaining health and safety. IAPMO, along with the Alliance for Water Efficiency, the American Society of Plumbing Engineers, the Plumbing Manufacturers International, the International Code Council and the Plumbing – Heating – Cooling Contractors Association is a founding member of the Plumbing Research Efficiency Coalition, PERC, which is conducting a research program on the impact of reduced flows on building drains. This research is needed to ensure that we do not experience unintended consequences related to our water-efficiency efforts. The entire plumbing industry is concerned that we may be reaching tipping points at which plumbing products and systems fail to operate as intended and risk the health and safety of our citizens. We may, in fact, be at the practical limits of efficiency and any further reductions in efficiency levels in some consumer products, specifically toilets and showerheads, need to be based on scientific study in order to ensure continued efficacy and safety in addition to increased levels of water and energy efficiency. Sadly, PERC struggled mightily to secure the meager funding needed to support their research effort and was turned away on numerous occasions when seeking support from the federal government. Fortunately, however, PERC was able to secure most of the funding needed to begin this research

by securing funding from other NGOs and the private sector. The member organizations of PERC are self funding the remainder of the cost. I think we can all agree that it should not be so difficult to conduct this desperately needed research.

- The EPA should take the lead in the development of uniform national non-potable water-quality standards applicable to various permissible utilizations of non-potable water. Water-quality standards should reflect the minimum water-quality parameters required to protect public health and safety and protect the integrity and function of plumbing systems and devices.
- Finally, we encourage the Federal Government to earnestly begin work on the development of a comprehensive and coordinated water strategy to meet the needs of our growing nation. We applaud the efforts of the National Institute of Standards and Technology (NIST) in convening stakeholders for a White House summit to discuss the role of emerging technology in addressing our nation's water needs and concerns. Our water strategy should include requirements for the incorporation of IT based systems and components into all water distribution projects that receive Federal funding. These IT enhanced systems, characterized as "smart water systems" will be capable of monitoring for leaks thus ensuring efficiency and more consistent compliance to the requirements of our safe drinking water standards. Similar technologies can also be deployed in building plumbing systems providing real time feedback to building managers. As we go about the necessary work of repairing our water infrastructure and plumbing systems, we must also modernize these systems as well in order to maximize the full potential of our investments.

Chairwoman Shaheen, Ranking Member Lee and members of the subcommittee, it is indeed an honor to be able to provide these comments to you today. As you know, there is no substitute for water. While we will always be able to use the incredible ingenuity of the American people to find alternate sources of energy as our needs and circumstances evolve, we must recognize that there simply is no substitute for water. We rely on access to safe, clean water every day.

Last summer the state of Texas was stricken with a severe drought that resulted in the closure of businesses in the impacted areas. Already this summer, according to the National Climate Data Center, well over 50 percent of the nation is experiencing drought conditions resulting in the worst drought crisis since the 1950's. Combined with certain population growth, especially in the most water-challenged regions of our country, these realities illustrate that the time to take action on our water-related needs is now.



The good news is that addressing these needs carries with it profound job-creation opportunities. The United States Conference of Mayors estimates that every job created through rebuilding water systems creates more than 3.6 jobs elsewhere and every dollar invested in water infrastructure adds \$6.35 to the national economy. Retrofitting of buildings and homes that still have older water-guzzling plumbing fixtures and fittings with high-efficiency models can create thousands of additional jobs and yield substantial water and energy savings at the same time. Let's take advantage of these opportunities to address two urgent national needs: job creation and ensuring a secure water future for the United States of America.

Again, I appreciate your time today and look forward to answering any questions you may have.

Thank you.