TESTIMONY

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Chairman Lampson, Ranking Member Inglis, and members of the Subcommittee, thank you for the opportunity to comment on “Research to Improve Water-Use Efficiency and Conservation: Technologies and Practices”. With much of the country gripped by drought, this is a very timely issue and the members of the Water Conservation Alliance of Southern Arizona (Water CASA) that I represent here today appreciate your leadership and interest in the increasingly efficient use of our water supplies throughout the nation.

Water CASA was formed 10 years ago to address many of the same issues you are grappling with here today. Members include both public and private utilities, municipalities that are not in the water business but understand that efficient water use is critical to their economic viability, our county government and our regional replenishment district. When formed, we partnered with the University of Arizona enabling us to not only provide conservation programs to our members' customers but to advocate for water conserving public policies and to do the applied research necessary to increase the effectiveness of the programs we undertake.

The good news is that living in the Sonoran desert, we have long been focused on water conservation, reducing our per-capita consumption from over 200 gallons per person per day to 150 gallons per person per day during the 1970's, long before most regions of the country were giving efficient water use a thought. The down side is that we have implemented all the inexpensive and easy programs to save water and now are very keenly aware of the difficulties and expenses that lie ahead to save that next increment of water.

RESEARCH AND DEVELOPMENT NEEDS FOR TECHNOLOGIES AND PROCESSES TO ENHANCE WATER-USE EFFICIENCY AND WATER CONSERVATION.

Water CASA asks that you consider using the 200 WaterSense Program partners, working with EPA, to prioritize the specific national needs in the area of applied research. The entire water conservation community, including affiliates of the Alliance for Water Efficiency (AWE) stands ready to help. Many of my colleagues around the nation will provide the Subcommittee with additional comments and offer you their research priorities in the days ahead.

The nation's policy makers need a better understanding of which areas in the country or which demographic profiles have the highest potential for increased water use efficiency. Some areas of the country have per-capita residential water use that is two or three times the per-capita residential water use in Tucson even though these areas receive two or three times the rainfall that we receive. While volumetric water use does not necessarily correlate with either efficiency or wastefulness in and of itself, these differences must be much better understood as the country goes forward facing increased drought and stressors to our water supply.

Members of Water CASA support all technological efforts to save water but we readily acknowledge the limits of technology. The human behavior factor can easily trump any technical strategy with the inadequate monitoring, management and maintenance of technological tools. The human factor is of greater consequence for many water saving technologies as compared with energy technologies (Example: the highest rated irrigation system available results in extremely inefficient outdoor water use if the homeowner or landscape manager fails to properly monitor, manage and maintain that system). We now know that homes with drip irrigation systems use 16% more water than homes without these systems (AWWA-Residential End Users of Water Study, 1999). In general, water conservation technologies are far ahead of our ability to educate and train the users and the consumers in the effective use of these tools. A national effort to lessen this disparity is essential.

Because we in Southern Arizona are ahead of many areas of the country in the use of reclaimed water, we see a looming tendency to use water without maximizing efficiency in an effort to generate more effluent, and to be less frugal with reclaimed water than with the potable water supply. Some view reclaimed water as a revenue stream as much as a water source. This issue needs to be studied to assure that efforts to generate revenue do not overwhelm the need to conserve, and to ensure that the public is not paying a premium for the use and reuse of their water supply. Water CASA holds firm that the least costly water source is that which is not necessary to provide and we want decisions related to these issues to be made by our elected officials rather than water and

wastewater providers who may be more focused on the potential for revenue losses rather than the potential for water savings.

National research efforts in water use efficiency needn't be limited to just the EPA (this committee). Coordination and collaboration with other Federal agencies, such as the Field Services Offices and the Science and Technology Units of the Bureau of Reclamation, can assure that research efforts are not duplicated.

Water CASA strongly supports research efforts in the water conservation arena that are focused on actual, quantifiable water savings rather than projected or modeled assumptions. Analysis of what has worked best and the honest assessment of what has been less effective can serve to inform the research and development direction we take next. For example, we recently completed an extensive study of water conservation programs around the country; their cost and benefits, and their actual water savings (ECoBA: Evaluation and Cost Benefit Analysis of Municipal Water Conservation Programs, 2006). One of the most startling outcomes was that actual water savings for toilet rebate programs was much less than expected (15,000 gpy) at about 7,000 gallons per year as compared with the savings from toilet replacement programs which was over 26,000 gallons per year. As a result, we no longer recommend rebate programs to our members but we advocate direct install programs in areas where aging, high-water-using toilets are still in use.

WATER CASA'S PERSPECTIVE ON CURRENT FEDERAL EFFORTS TO PROMOTE WATER-USE EFFICIENCY AND WATER CONSERVATION: WATERSENSE PROGRAM OF THE EPA.

The EPA WaterSense Program is a very effective effort that Water CASA has supported since its inception and we are pleased to count ourselves among the founding WaterSense Promotion Partners. Specifications, licensing, labeling, and publications are all great tools for us so we say do more, do faster! We are currently in the midst of a program that will replace 1000 high water using toilets in Pima County and we are using only High Efficiency Toilets (HET=1.2gpf) that are qualified to carry the WaterSense label.

Additionally, Water CASA will back any increased training and certification efforts for water related professionals in the use of the appropriate technologies touted by WaterSense. As stated above, the efficiency to be gained by our technologies is limited by our ability to have qualified and capable humans monitoring, managing and maintaining many of these technologies.

WaterSense needs to offer a grants program or research funding specifically designed to increase our understanding of the costs and benefits of conservation efforts as compared with cost and benefits of purchasing, pumping, treating, and

delivering additional supplies of water. As stated above, with few exceptions, the cheapest source of water is that which you don't have to supply.

This Subcommittee can set a goal to require High Efficiency Toilets (HET, 1.2gpf or less), waterless urinals, and WaterSense rated fixtures in all new construction by 2014, as we did nationally for the ULF 1.6gpf toilets in the 1990's. Water CASA would also strongly support a requirement that any high-water-using toilet in properties sold be retrofitted at the time of resale with HET toilets.

COMMENTS ON THE REP. MATHESON DISCUSSION DRAFT.

The potential water savings from residential graywater reuse (water from showers, laundry and lavatory sinks) is far too compelling to ignore. Water CASA estimates that 35 gallons of graywater are generated by each of us every day. This translates into as much as 50,000 gallons of potable water that can be saved each year in every household that uses the graywater it generates for toilet flushing and landscape irrigation.

National standards and regulations regarding the reuse of graywater generated in residences should be promulgated. The public needs complete and accurate information regarding the safe and effective use of this water source. This effort could be modeled on the State of Arizona regulations promulgated in 2001 by our Department of Environmental Quality. Arizona requires no permit if homeowners make use of their graywater within the parameters of a set of common sense guidelines. (http://www.azdeq.gov/environ/water/permits/download/rules/1.pdf)

As with graywater, the potential savings to our potable water supplies through the active and passive utilization of harvested rainfall is astounding. An analysis done at the University of Arizona with funding support from EPA in 2005 (Demonstration of the Sustainability of Harvested Rainwater in Arid Lands to Meet Water Requirements, R9 -03-478) concluded that in urban areas of Pima County the amount of rainfall that could be captured from rooftops, paving, landscaped areas and bare ground is equivalent to over 75% of the water delivered to the same urban area by the water provider.

The Arizona model of providing incentives (rebates, tax credits, development fee reductions, etc) for increasing the use of household graywater and the harvesting of rainwater can also form the basis for a national policy. These incentives can be tailored to motivate home builders, prospective home buyers and existing homeowners as well. In Arizona, we currently offer a $200 tax incentive (costs, up to) to home builders who plumb new construction for graywater capture. Additionally, we offer a $1000 tax incentive (25% of costs, up to) to home owners who install a graywater and/or water harvesting system.

How we achieve maximum feasible usage of alternative sources of water, both graywater and rainwater, is a topic that deserves our considerable attention and Water CASA is pleased that both of these alternative sources of supply have been put forward in this draft legislation.

Working demonstration sites can be effective teaching tools for the public if the visitation traffic is high enough. We support efforts to provide more of these types of green residential, commercial and industrial buildings (Examples: Casa del Agua in Tucson, where we have compiled 20 years of water use data for a family of three, the newly opened UA College of Architecture and Landscape Architecture Addition), public landscapes (Examples: The Garden in Washington County, Utah, The Water Conservation Garden in Cuyamaca, California), and planned communities.

Water CASA shares the opinion expressed in this draft bill that, water conservation should certainly be a national goal and we welcome any opportunity to work with, not only the EPA, but all federal agencies that have water related mandates. Water CASA would support a workshop or series of meetings to offer input to EPA on what the national water use efficiency goals ought to be and to assist in establishing a roadmap of research and development projects to achieve that goal.

ADDITIONAL SUGGESTIONS FOR WATER-USE EFFICIENCY EFFORTS AT THE FEDERAL LEVEL.

Water CASA wishes to take this opportunity to put forth ideas that may not have been considered at the federal level. We acknowledge this is a most unique opportunity to provide input and we want to make the best use of it.

A national goal of 100% metered water use by all municipal water providers and a requirement for all water providers to have some form of conservation rate structure (Examples: seasonal rate differential, time of day pricing, inclining block rates, surcharges tied to usage) in place by a targeted date is the highest priority recommendation from Water CASA.

Require all water suppliers (large, small, public and private) to keep system leakage below 10% of their deliveries. Provide a financial penalty or financial incentive to achieve this goal.

Water CASA is increasingly focused on the huge savings to be realized from increasing the effectiveness of water and energy use in plumbing systems. We suggest additional plumbing standards that embrace manifold systems, recirculating and on demand systems, the un-bundling of hot and cold water lines, the insulation of all hot and cold pipes to at least R-4, elimination of

plumbing pipes in slabs, smooth curves and fewer joints in all new construction. Though highly variable, the savings in water and energy by full utilization of these simply adjustments in how we plumb could achieve savings as high as 50% of what is currently being used.

A national public awareness campaign can have tremendous impact on the overall trend toward more efficient use of all sources of water. The need to conserve is nationwide and the entire country is paying attention to water issues as never before. Though the scarcity issues vary from region to region (salt water intrusion, aquifer depletion, rising treatment and distribution costs, groundwater contamination, drought, declining snow packs, etc). Water CASA believes there is a key role to be played by federal lawmakers to create a national conservation ethic that reinforces the culture of conservation work we do at the state and regional level. It is critical that the general public understands the worth, the value of water.

In closing, Water CASA wants to see national policies regarding our increasingly stressed water supplies that are equitable to all water sectors including the environment. The protection of our environmental assets must be given the highest consideration in all our programmatic decisions. We all must speak for the environment.