

15-05

## STATEMENT OF POLICY

### Sustainable Water Use

#### Policy

The National Association of County and City Health Officials (NACCHO) urges state and local health departments and related agencies to engage policymakers, government agencies, non-governmental organizations, businesses, and communities to produce and support policies, legislation, regulations, programs, research, and resources to promote sustainable water use.

NACCHO supports activities that foster sustainable water use, including the following:

- Monitoring of water resources to ensure a secure, lasting water supply in light of a rapidly increasing global population.
- Promoting sufficient funding allocations for national, state, and local environmental monitoring and protection of water resources.
- Adopting progressive policies by local and state governments to adapt to decreasing water resources in light of climate change.
- Researching and integration of knowledge regarding the threats to water supplies and how to mitigate them using innovative solutions, such as desalination.
- Incorporating a holistic view of impacted water supplies and their immediate and long-term consequences, including food scarcity, lack of potable water, and land use planning issues.
- Ensuring water quality and public health is given utmost priority in the discussion of land use and water resource planning and policy development.
- Supporting collaboration between environmental partners and local health departments to proactively and effectively protect water resources.
- Endorsing research on efficient irrigation practices and responsible agricultural water use.
- Encouraging local and state governments to adopt regulations on gray and wastewater reuse and rain collection, allowing for water conservation at a local level.
- Promoting and educating community members about the benefits of implementing water reuse practices in government buildings and throughout the community, including the use of low-flow appliances.

#### Justification

Water is essential for the livelihood of all living things, and protecting this resource is vital for environmental and public health. There are increasing and continual threats to water safety and accessibility, which include decreased funding for monitoring and control, new and existing sources of water pollution, strained water resources, and a rapidly growing population.

According to a recent report issued by the U.S. Census Bureau, the United States population is



projected to reach 400 million by the year 2051.<sup>1</sup> Therefore, it is fundamental to implement widespread water conservation strategies to protect this essential resource.

According to a 2012 survey on budget cuts conducted by NACCHO, most local health departments are not focused on safeguarding water resources. In fact, the percentage of public health directors who reported programmatic activity to protect the quality and quantity of fresh water decreased from 66.9% in 2008 to 46.4% in 2012. The decrease in activity devoted to water conservation sharply contrasts the findings that 64.6% of local health department directors believe climate change will negatively impact fresh water availability.<sup>2</sup> This inconsistency is partially explained by widespread budget cuts experienced by local health departments over the past few years. However, it is necessary for local health departments to make protection of water resources a priority.

Climate change is projected to have significant impacts on water resources in the United States due to rising temperatures, loss of snowpack, rising sea levels, and decreasing groundwater supplies. Already reduced snowpack that supplies water to reservoirs, such as the Colorado River, is predicted to decrease by 45% by 2050. Changes to snowpack threaten the entire region surrounding the Colorado River, which supplies water to Colorado, Arizona, California, Nevada, New Mexico, Utah, and Wyoming. This area is particularly vulnerable to shortages, as there is significant competition for water off the river. In addition, increasing temperatures, increasing rates of evapotranspiration, and decreased precipitation may lead to a reduction in the recharge of aquifers and fresh water bodies that provide potable water resources. For example, water levels in Lake Michigan and Lake Huron may drop by over four feet by the end of the century and the Ogallala Aquifer, which supplies water to eight surrounding states, may decrease recharge by 20%. These changes will not only have a direct impact on water resources, but also indirectly impact fisheries, agriculture and wildlife.<sup>3</sup>

Some parts of the United States have started to experience the consequences of climate change on water resources. For example, water shortages and competition for water are becoming increasingly problematic for southern states. In addition to drought, which decreases the availability of groundwater, climate change models also project increased flooding and runoff. This will result in higher levels of contamination within water sources.<sup>4</sup>

In addition to climate change, many direct human activities impact water resources. Agricultural irrigation is a primary contributor to groundwater depletion in the United States, especially in regions where water is scarce. In many cases, water is removed from an aquifer more quickly than it can be restored. This puts a great deal of pressure on the water supply.<sup>5</sup> In fact, the United States Geological Survey estimates that approximately 65% of the world's freshwater usage is for irrigation purposes.<sup>6</sup> In California, the Department of Water Resources and University of California - Davis have created a program to improve the irrigation practices of farmers across the state. The California Irrigation Management Information System uses weather data to determine the most efficient times to irrigate.<sup>7</sup>

Nuclear power plants also require large amounts of water to operate. Water is used for steam production and for cooling, and then is usually returned to the environment. Although water discharged from nuclear power plants is not radioactive, it can still negatively impact the

ecosystem. For example, the instability of water levels can greatly disrupt natural habitats. Additionally, water released from a nuclear reactor is generally at a higher temperature than the surrounding environment.<sup>8</sup> This change in temperature can negatively impact aquatic wildlife and significantly decrease the quality of surrounding water.

As water resources become scarce, water conservation has taken a prominent role in promoting sustainable living. For instance, the use of gray water in homes and buildings can provide a solution for limiting water use for processes that do not require potable water. Gray water is reusable wastewater that is usually collected from household sinks and bathtub shower drains.<sup>9</sup> Although gray water can provide numerous sustainability benefits, it may contain traces of bacteria and pathogens and must be handled carefully to reduce improper exposure.<sup>9</sup> Similarly, rainwater harvesting through rain gutters can provide a water source for irrigation, toilet flushing, car washing, and other activities that do not require filtered or treated water.<sup>19</sup> However, as with gray water use, there are public health issues surrounding rainwater harvesting, including the creation of mosquito reservoirs and potential chemical contamination. Due to these and other concerns, local governments have struggled to adopt regulations for water reuse. However, as the global population continues to rapidly increase, so does the need for viable conservation solutions. Onondaga County, NY, has implemented effective water conservation approaches to diminish storm water overflow and increase the quality of ground and surface water in the region. “Save The Rain” is a model plan for municipalities across the country to begin implementation of water conservation strategies.<sup>10</sup>

The predicted changes in climate, along with a continually increasing population, will place further stress on the limited water resources we have available. Local health departments must make promoting water conservation a priority to ensure continued access to our natural resources.

## **References**

1. Colby, S. L., & Ortman, J. M. (2014). Projections of the Size and Composition of the U.S. Population: 2014 to 2060, Current Population Reports, P25-1143, U.S. Census Bureau, Washington, DC, 2014. Retrieved March 10, 2015, from <http://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf>
2. National Association of County and City Health Officials. (2008). *Are We Ready? Preparing for the Public Health Challenges of Climate Change*. Retrieved June 9, 2015 from [http://www.naccho.org/topics/environmental/climatechange/upload/are-we-ready\\_14\\_view.pdf](http://www.naccho.org/topics/environmental/climatechange/upload/are-we-ready_14_view.pdf)
3. Hall, N., Stuntz, B., & Abrams, R. (2008). Climate Change and Freshwater Resources. *Natural Resources & Environment*. Retrieved August 5, 2014, from <http://ic.ucsc.edu/~mloik/envs80b/FreshwaterResources.pdf>
4. Melillo, J. M., Richmond, T., & Yohe, G. W. (2014). Climate Change Impacts in the United States: The Third National Climate Assessment. U.S. Global Change Research Program. doi:10.7930/J0Z31WJ2. Retrieved June 9, 2015, from <http://www.nature.com/ngeo/journal/v5/n12/full/ngeo1617.html>
5. Centers for Disease Control and Prevention. (2009). Agricultural Water webpage. Retrieved June 9, 2015, from <http://www.cdc.gov/healthywater/other/agricultural/index.html>
6. State of California. California Irrigation Management Information System. Retrieved June 9, 2015, from <http://www.cimis.water.ca.gov>
7. Environmental Protection Agency. (2013). Water Discharge webpage. Retrieved June 9, 2015, from <http://www.epa.gov/cleanenergy/energy-and-you/affect/water-discharge.html#footnotes>
8. Environmental Protection Agency. (2015). Water Recycling and Reuse: The Environmental Benefits webpage. Retrieved June 9, 2015, from <http://www.epa.gov/region9/water/recycling/>

9. Colorado State University. (2015). Graywater Reuse and Rainwater Harvesting webpage. Retrieved June 9, 2015, from <http://www.ext.colostate.edu/pubs/natres/06702.html>
10. Save the Rain. About webpage. Retrieved June 9, 2015 from <http://savetherain.us/about/>

**Record of Action**

*Proposed by NACCHO Environmental Health Committee*

*Approved by NACCHO Board of Directors*

*July 7, 2015*