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## Climate-Sensitive Decision-Making

Preparing jurisdictions for  
climate change impacts

There is currently a huge, yet largely unspoken, burden facing storm water and wastewater utilities: The ability of a jurisdiction to effectively manage the impacts of climate change on its water utilities and related infrastructure is imperative and growing in importance as we continue to encounter more frequent extreme storm events as a result of climate change.

As with many issues, this burden is compounded by the weakened economy. In a time when budgets are regularly cut and getting basic operating funds can be difficult, this issue poses unique and potentially costly challenges to utilities as well as national research organizations and supporting agencies. Due in part to the uncertain nature of climate change as a whole and the limitations of current protection tools, we do not generally see public and political support for the funding of climate change adaptation programs or even climate change vulnerability analysis, particularly at the local level.

Immediately following an extreme storm event—similar to those that in recent years have resulted in major flooding in cities including Nashville, Tenn., and Atlanta—there is a heightened value placed on the need for climate change adaptation tools. But beyond that, the concept still is largely viewed as too esoteric to warrant serious consideration, much less funding, in most jurisdictions.

There are exceptions to the rule. Some cities have taken a very proactive approach to preparing climate change adaptation strategies as they relate to water utilities. However, even in jurisdictions where climate change vulnerability and adaptation are serious considerations and funding has been dedicated, there are still challenges for climate-sensitive decision-making.

Many of the resources currently available to aid and support climate-sensitive decision-making have significant limitations and can be difficult to apply, especially at a local or regional level. A few of the most difficult to manage include the scalability of national and even global-based

models for local applications, and, of particular importance to storm water and wastewater management, the need to focus on better prediction tools for extreme versus average conditions.

During a recent climate change adaptation conference jointly sponsored by the National Oceanic and Atmospheric Administration, National Aeronautics and Space Administration, the U.S. Environmental Protection Agency, Water Research Foundation and Water Environment Research Foundation, several climate-sensitive management issues that utilities should consider were outlined. A few included were the need for updated design standards for flood control, infrastructure inventory and long-term asset management; system redundancy requirements; and maintenance methods and frequencies.

Considering these issues will help with critical decisions such as clearly defining operability margins, balancing storage needs versus flood control capacity, identifying the most viable storm water management best management practices and predicting how smaller integrated storm water management practices will respond to more frequent and intense predicted storm events.

In order for utilities to protect jurisdictions from potential flooding and infrastructure failures caused by extreme weather events and other burdens related to climate change, managers must adopt wise climate change adaptation plans. Such plans should be designed to assess and address current vulnerabilities to climate change as well as response to unavoidable impacts. They must take a multidiscipline approach that incorporates physical, natural, social and economic considerations. **SWS**

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