



# CALIFORNIA ASSOCIATION of SANITATION AGENCIES

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October 11, 2016

The Honorable Pedro Nava, Chair  
Little Hoover Commission  
925 L Street, Suite 805  
Sacramento, CA 95814

RE: October 27, 2016 Public Hearing on Special Districts:  
Written testimony of the California Association of Sanitation Agencies (CASA)

Dear Chairman Nava and Commissioners:

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to provide written comments in advance of the upcoming hearing of the Little Hoover Commission focusing on special districts and climate change adaptation. For 60 years, CASA has been the leading voice for public wastewater agencies on regulatory, legislative and legal issues. We are a statewide association representing more than 115 municipalities, special districts, and joint powers agencies that provide wastewater collection, treatment, clean energy and water recycling services to millions of Californians.

Climate change is a significant factor for wastewater agencies when considering their long term infrastructure needs and investment strategies. In fact, the wastewater community has long recognized the potential threats to critical infrastructure directly resulting from climate change. In 2006, following the passage of AB 32, CASA jointly formed the California Wastewater Climate Change Group (CWCCG) consisting of small, medium, and large municipalities that collect and treat over 90 percent of the municipal wastewater in California, and many of whom also provide recycled water services and actively participate in the beneficial use of biosolids and biogas. The CWCCG's mission is to address climate change policies, initiatives, and challenges through a unified voice advocating for wastewater community perspectives. The work of the CWCCG has proven so important over the last ten years that CASA has absorbed the program this year as part of our association's core advocacy function and mission.

## **Climate Change Adaptation**

Three important factors attributable to climate change require significant consideration by wastewater agencies – sea level rise, increased frequency and intensity of major precipitation events, and increased drought conditions. Each of these can have dramatic impacts on the operation of treatment plants that can diminish treatment quality, increase energy requirements due to enhanced treatment needs, and potentially require very expensive capital improvements to adapt to these changes.

***Sea Level Rise:*** Wastewater treatment facilities will be among the hardest hit by climate change, in part because treatment plants are generally located at the low point in each watershed to make

efficient use of gravity for conveyance purposes. This means that in coastal areas, wastewater facilities are often located along the coast or within an estuary and have ocean or bay outfalls with a direct hydraulic connection to their facility. Inland facilities also typically have geographically low lying plants and outfalls within river valleys and floodplains. As the sea level rises – an expected 0.6 to 1.4 meters for the California coast – and storm surges increase in coastal areas, facility outfall elevations may need to be increased or may require pumping in order to discharge. Inundation of facilities, including higher coastal groundwater levels causes more inflow of brackish or salty water that in turn requires higher volumes or treatment levels and makes water recycling more energy intensive. Increased inland flooding events will put critical infrastructure and service at risk of failure.

***Increased Major Precipitation Events:*** Many wastewater collection systems are already stressed when managing wet weather flows. In a changing climate, we expect further increases in extreme storm events (i.e. El Nino weather patterns, etc.), and greater increases in peak wet weather flows, further stressing this critical infrastructure. Indeed, recent weather events in places like Colorado and the New York Metropolitan area appear to be a portent of the climate-modified environment we face. These extreme storms can result in water inflow that exceeds the current capacity of much of our wastewater infrastructure, meaning we will need to invest significantly in upgrading systems to prevent sewage overflows and potential impacts to public health.

***Increased drought conditions:*** California is experiencing severe drought that has had serious environmental and economic impacts, and despite increased rainfall last winter, persists statewide. Throughout California, the impact of unpredictable precipitation and decreased water content in snowpack has resulted in a statewide effort to reduce water consumption. Drought conditions and water conservation efforts can lead to reduced flows and increased concentration of pollutants that comprise the wastewater flows. These factors will likely require changes in treatment system operations and control technologies. Warmer ambient surface water temperatures associated with both warmer weather patterns and drought could lead to new regulatory requirements and associated treatment needs. Decreased potable supplies will require the development of alternative water supply sources, including greater reuse and recycling of wastewater effluent.

All of these scenarios will impose substantial operational costs upon public agencies. Some of the adaptation strategies that wastewater facilities will likely use to address these challenges include:

- Elevating pumping stations, building levees and, in some circumstances, relocating treatment facilities to avoid rising sea levels from rendering the wastewater plant inoperable.
- Increased mitigation of brackish groundwater infiltration into the collection systems where influenced by rising sea levels.
- Increased focus on integrated watershed planning and use of the full toolbox of management techniques to manage systems holistically. This may include use of both green and gray infrastructure, real time management and optimization techniques, and other processes to manage wet weather flows, as well as more efficient treatment technologies.

- Increasing the treatment of wastewater, including cooling of the effluent, to address likely increased surface water temperatures of receiving bodies whose ecological health will be compromised under changed climate conditions.
- Relying more heavily on reuse technologies so that wastewater can help compensate for the decrease in drinking water availability.

In 2009, the National Association of Clean Water Agencies (NACWA) and the Association of Metropolitan Water Agencies (AMWA) released a study on the kinds of impacts and challenges the wastewater community expects to encounter in the coming years, and the projected costs of meeting those challenges. The report, titled "Confronting Climate Change: An Early Analysis of Water and Wastewater Adaptation Costs", examines the likely climate-related effects on our water resources and the resulting impacts to our water systems.

The report estimated that current national infrastructure demands on wastewater agencies are projected to exceed \$298 billion over the next twenty years. This amount does not take into account the costs to address challenges of climate change. According to the NACWA/AMWA report, the nationwide cost for water and wastewater agencies to adapt to climate change is expected to be in the range of one-half to one trillion dollars through 2050. Of this, the total estimated cost of wastewater system climate change adaptation in the U.S. is between \$123 billion and \$252 billion above and beyond existing wastewater system infrastructure upgrade, renewal, and replacement programs. The combined costs of meeting current infrastructure demands in addition to the increasing stress due to climate change and sea level rise are simply staggering.

At the local level, each agency must evaluate their individual risks and infrastructure needs on a case-by-case basis, and make prudent investments to protect the public health and environment in their service areas. Public wastewater agencies conduct comprehensive infrastructure investment planning and incorporate all risk factors including climate change into those plans. Agencies are authorized to raise the capital necessary to complete maintenance, repairs, and upgrades to their existing systems in a variety of ways. Federal and State financing, private financing, user fees, rate increases, property tax allocations, and any combination of these revenue sources can be used to finance capital improvements. Local public agencies are required to comply with state and federal rules relating to making prudent and sound investments, and must do so in a transparent and open public process. All decisions about infrastructure investments and their financial impacts on ratepayers are discussed and determined in accordance with the Brown Act, Proposition 218, and Proposition 26.

### **Sustainability and Mitigation Efforts**

Climate change presents the wastewater industry with significant challenges, but also with unique opportunities. In addition to addressing the impacts on infrastructure and operations of wastewater treatment systems related to sea level rise, drought, and extreme weather, wastewater agencies are proactively pursuing renewable energy and resource recovery projects that result in the mitigation of harmful greenhouse gas emissions.

Many wastewater treatment plants are already generating between 40 and 70 percent of their onsite energy needs from biogas generated through anaerobic digestion, thereby reducing the need to import power from the grid. Additionally, this renewable energy production is increasing by virtue of more facilities accepting hauled-in organic waste for anaerobic digestion, which greatly increases the amount of biogas produced. In many cases that organic waste would otherwise have been landfilled, meaning that not only can we increase our renewable energy production but also reduce GHG emissions and recycle more of the State's solid waste at the same time. The production of digester gas, also known as biogas, can be used to produce renewable power, and also can be converted to biomethane (a renewable natural gas product that can replace fossil-based natural gas).

All wastewater agencies are required to process the solid remnants of the wastewater treatment process, known as biosolids. In compliance with risk based U.S. EPA and Water Board regulations, the highly treated biosolids are an excellent fertilizer and soil amendment when land applied. The beneficial recycling of biosolids through land application avoids the use of fossil fuel intense inorganic nitrogen fertilizer, increases the moisture holding capacity of the soil and therefore reduces the need to irrigate, and sequesters carbon in the soil. In fact, more than 60% of the biosolids produced in California are successfully, and have historically been, land applied or used on home gardens.

### **Considerations for the Future**

In the future, legislative and regulatory support will be important in assisting wastewater agencies to adapt to climate change while we continue to fulfill our primary mission to protect human health and the environment and provide a vital public service. Changing the view of wastewater facilities is an important starting point. These public utilities should be embraced by regulators, policymakers, and the public as multi-functional sustainability agencies that provide valuable water and resource recycling services in their communities. CASA and its member agencies have been engaging and sharing their expertise with California's regulatory entities about the opportunities to consider and include wastewater agencies and infrastructure in the context of climate change adaptation and mitigation efforts.

Given the demonstrated infrastructure needs facing the wastewater sector, the State's wastewater utilities should continue to be eligible to compete for funding to undertake projects to adapt their operations to climate change impacts. Such projects could include efforts to conserve water or increase the efficiency in its use, preserve or improve water quality, rebuild or relocate threatened infrastructure, protect source waters and ecosystems, and/or implement advanced treatment technologies such as water reuse, recycling, and desalination. While some state funds have been made available for these purposes, ongoing needs far exceed the availability of resources, and future investments will be necessary.

For utilities to plan for future changing conditions and make commitments to invest hundreds of millions of ratepayer dollars in infrastructure (above and beyond what is needed to keep the existing systems in good repair), it is imperative that the "best available science" be used. Agencies rely on a variety of sources for information on climate change, including state and federal guidance documents, academic research, industry research, and private consultants for

reliable information about future risks. Consistent, reliable, scientifically sound information about climate change is critically important for planning purposes.

Finally, CASA has long advocated for shifting water management in California to a more macro level approach that considers whole watersheds and regional water needs. Indeed, many wastewater agencies have moved beyond the traditional role of sewage treatment and are now engaged in sustainable water management solutions that take into consideration their complex regional idiosyncrasies. These holistic approaches to watershed management require cooperative efforts across the water provider spectrum. It is important that California enact public policies that proactively encourage regional cooperation while still allowing enough flexibility for local agencies to best serve their communities.

CASA sincerely appreciates the interest of the Little Hoover Commission in our ongoing mission to provide clean water to millions of Californians, even in the face of climate uncertainty. We would be happy to provide any additional information that may be of interest to the Commission, and look forward to your final report being released in the Spring of 2017.

Sincerely,



Jessica Gauger  
Manager of Legislative Affairs  
California Association of Sanitation Agencies