



November 20, 2017

Central Valley Regional Water Quality Control Board
Mr. Andrew Altevogt, Assistant Executive Officer
Email: RB5S-Climate-Change-Comments@waterboards.ca.gov

Re: California Association of Sanitation Agencies Comments on the Proposed Central Valley Region
Climate Change Work Plan

Dear Mr. Altevogt:

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to comment on the *Proposed Central Valley Region Climate Change Work Plan* (Proposed Work Plan).

CASA is an association of local agencies that represent more than ninety percent (90%) of the sewered population of California, engaged in advancing the recycling of wastewater into usable water, as well as the generation and beneficial use of renewable energy, biosolids, and other valuable resources. Through these efforts we help create a clean and sustainable environment for Californians.

Our specific comments are provided below by topic and the relevant section is provided for reference as well. CASA understands that climate change will likely affect wastewater facilities and services in various ways, and we agree with the State Water Board that it is important to reduce greenhouse gas emissions, assess the potential impacts of climate change that cannot be avoided, and identify creative ways to be resilient in the face of those impacts without overly burdening public agencies and their rate payers (e.g., building flexibility into permits).

Wastewater Infrastructure Adaptation (Section 2.3.2 of the Proposed Work Plan)

CASA appreciates the Regional Water Board's efforts to build upon efforts already completed. For example, the Proposed Work Plan references Safeguarding California (Section 2.3.2.1), which is the state's adaptation strategy. While the adaptation strategy does not emphasize the vulnerability of wastewater infrastructure to impacts of climate change at this time, CASA has provided information on these impacts to the Natural Resources Agency for its consideration and recommends that Regional Water Boards work with wastewater agencies in their regions, as key impacts vary depending on geographical location.

For ease of reference, we have summarized several key impacts of climate change that are of concern to most wastewater agencies:

- Sea level rise (and storm surge)
- Increased extreme precipitation events
- Increased drought conditions
- Increasingly restrictive indoor water use

Sea level rise and storm surge impacts. Treatment plants are generally located at the low point in each watershed to make efficient use of gravity for conveyance purposes. In the context of inland wastewater treatment facilities, this means many facilities and outfalls are found within river valleys and floodplains. Increased inland flooding events due to rising sea levels and storm surges may put critical infrastructure and services at risk.

Increased extreme precipitation events. In many circumstances, wastewater collection systems are already stressed when managing wet weather flows. In a changing climate, we expect increases in extreme storm events and more frequent peak wet weather flows, further stressing this critical infrastructure. Extreme storms can result in water inflow that exceeds the current capacity of wastewater infrastructure. Flood protection adaptation measures such as levees will be needed to stem both rising seas and floods associated with increased extreme precipitation and runoff. Extreme storm events may also require wet weather program enhancements like stormwater capture and reuse.

Increased drought conditions. Conversely, worsening drought conditions could have a two-fold impact on wastewater treatment plants. First, droughts may alter water quality upstream of natural surface waters, limiting the watershed's ability to receive treated wastewater. This could lead to the need for enhanced treatment, often requiring significant plant modifications and greater energy usage; or a change to land application or other out-of-stream disposal methods, decreasing flows available in a waterway. In lieu of increased treatment requirements, greater flexibility such as temporary discharge permit relief is needed in recognition of the need for critical water resources.

Second, drought-stricken regions may opt to reduce potable water consumption by recycling their wastewater (Section 3.3.2) instead of discharging that flow to local streams. Recycled water use (inclusive of potable reuse) is a fundamental strategy in the Governor's Water Action Plan and should be identified as such in the Work Plan.

Restrictive indoor water uses. Reduced wastewater flows as a result of increased indoor water conservation can have significant corrosive impacts on pipelines, potentially causing premature aging and accelerated repair and replacement schedules. Conservation has also led to increased levels of conservative constituents, such as salts. While communities are doing their part to respond to the drought through conservation measures, wastewater agencies may struggle to meet concentration-based limits for certain constituents.

Summary. Each of these impacts can result in dramatic changes in operations in collection systems and at treatment plants that may increase energy requirements due to increased pumping and enhanced treatment needs to meet permit requirements. Implementation of enhanced treatment levels may:

1. Require expensive capital improvements that could put an undue hardship on disadvantaged communities.
2. Result in an increase in greenhouse gas emissions due to increased energy demand. As stated in Section 2.3.1.3 (Water- Energy Nexus) "*Many water and wastewater agencies have already reduced their carbon footprint by utilizing renewable sources of energy and encouraging their users to be water efficient.*" It is in the best interest of the agency to save operational costs (and in turn, rates) while achieving water quality objectives, and is of utmost importance to continue to seek the most efficient operations possible. While the overarching goal of the Proposed Work Plan is to promote climate change resiliency (which includes mitigation efforts by state agencies), **CASA recommends that Regional Water Boards continue to support state efforts to mitigate GHG emissions and refrain from imposing additional reporting or reduction requirements (e.g., through Climate Action Plans). CASA also recommends that Regional Water Boards request that the State Water Board explain its authorities related to climate change mitigation and adaptation. Although many of the proposed actions are internal in nature, it is unclear if the intent of the State Water Board is to incorporate climate change-related provisions into permits, plans and policies which could not only lead to requirements for actions that must be taken by permittees, but, in the case of NPDES permits, these actions**

would become enforceable by third party legal challenges. We take this Proposed Work Plan and efforts to implement it very seriously, and we would like to understand the State and Regional Water Board's authority over activities that may lead to such requirements.

When examining ways to adapt to climate change, **CASA recommends that Regional Water Boards adopt a holistic approach - one that seeks to understand the (cross-media) impacts related to operational changes (e.g., increased water quality monitoring, increased GHG emissions, increased local air pollutant emissions, improvement in effluent quality, increased solids to manage, etc.).** Keeping in mind, the top priority for wastewater treatment facilities will always be to safeguard the public health of all their customers, including those in disadvantaged communities, and protect the environment through effective treatment.

Recycled Water Use (Section 3.3.2)

As you are aware, California's prolonged drought has had crippling economic impacts in the Central Valley, the nation's most productive agricultural region. Throughout California, the impact of unpredictable precipitation and record-low snowpack levels resulted in unprecedented efforts to reduce water consumption. These reductions are being accomplished through conservation efforts and the development of underused water supply sources such as recycled water. The need for alternative and sustainable local water supply sources will only increase in light of expected climate change impacts.

Diversifying local supplies is key to providing a reliable supply - recycled water (both non-potable and potable reuse) is a significantly underused reliable and local water resource that the wastewater sector can provide. Ultimately, sustainable water supply decision-making must be made at the local level since each has unique conditions that must be addressed. Robust planning, however, should include a review of anticipated impacts to water and wastewater systems as an integrated unit.

Healthy Soils Initiative and Incentive Program (Section 2.3.1.2)

CASA supports the adaptive activities identified to protect California agriculture from the impacts of climate change, including developing management strategies that reduce climate risks to agriculture (e.g., the Healthy Soils Initiative) and to water (e.g., enhanced flood management, outdoor water use efficiency, and regional groundwater management).

In support of the Healthy Soils Initiative, **CASA recommends that Regional Water Boards support the use of a replacement fertilizing/soil amending material that reduces water demand, reduces GHG emissions, sequesters carbon in the soil below, and provides other co-benefits.** Specifically, land application of highly treated wastewater solids (biosolids) should be considered as an efficient recycling practice that avoids use of fossil fuel intensive synthetic fertilizer (which requires approximately 0.22 gallons of fossil fuel per pound of inorganic nitrogen), reduces water demand, and sequesters carbon in the soil. Studies have shown that land applied finished compost and other biosolids serve to increase carbon storage in the soil. One of these studies showed that over a 34-year reclamation project, the mean net soil carbon sequestration was 1.73 (0.54-3.05) megagrams of carbon per hectare annually in biosolids amended fields as compared with -0.07 to 0.17 megagrams of carbon per hectare annually in synthetic fertilizer controls, demonstrating a high potential of soil carbon sequestration by the land application of biosolids.

Anaerobic Digestion and Renewable Energy/Fuel Generation (Section 3.3.2)

Increasing the production and use of biogas (bioenergy) at wastewater treatment facilities provides numerous co-benefits, including: (1) reduced GHG emissions through the increased capture and utilization of biogas; (2) increased production of renewable energy displacing fossil fuel use, which helps

meet the renewable portfolio standard (RPS) goals under AB 32 and SB 32; (3) avoided landfill methane emissions from decomposition of high-strength waste (e.g., food waste) by diverting that waste to existing anaerobic digesters at wastewater treatment facilities having excess capacity, which is being examined at a statewide level by the State Water Board; and (4) production of low carbon intensity fuels designed to meet the low carbon fuel standard (LCFS) under AB 32 and SB 32.

Additionally, increased energy generation and cogeneration (i.e., combined heat and power - CHP) capacity at wastewater treatment facilities may provide the most reliable (i.e., sustainable) source of distributed generation currently available, with the added benefit that POTWs will always need to be located relatively close to the customers they serve (to be a local source of energy). Resource recovery and energy generation activities will generally be conducted onsite at the treatment facilities, making energy generation and distribution at numerous treatment facilities a key component to distributed generation.

Many wastewater treatment facilities across the state already have anaerobic digestion infrastructure in place, and are increasingly providing the option to receive hauled-in organic waste (such as fats, oils, grease, and food waste) and anaerobically digesting it. In order to maximize the benefits associated with these activities, CASA is engaged in the rulemaking to implement SB 1383 and is working with CalRecycle and CARB to develop the necessary incentives, address long-term risks to public agencies, and reduce cost and regulatory (including permitting) barriers to get the necessary equipment for pre-processing of hauled-in waste streams to a digestible form, infrastructure for anaerobic digestion, and equipment necessary for processing biogas into a pipeline grade or transportation fuel in place. We are beginning to work with CNRA, CARB, and the California Public Utilities Commission (CPUC) in examining interconnection issues, as well as research, development and demonstration of bioenergy and cogeneration technologies.

CASA is also working with CARB to identify opportunities and barriers in installing on-site facilities for direct energy production from biogas and/or conversion of biogas to transportation fuel. Investment in this area will help ensure that wastewater biogas is used to produce ultra-low carbon fuels and clean, renewable electricity instead of flaring a valuable fuel supply.

CASA recommends the Regional Water Board incentivize projects like these that have multiple benefits (e.g., mitigate and adapt to climate change impacts).

Infrastructure in Disadvantaged Communities (Section 1)

The last paragraph on page 7 contains an erroneous message: "Disadvantaged communities, rural, and low-income populations of the Central Valley Region are especially vulnerable to the impacts of climate change. Water and wastewater infrastructure in these communities is often aging, in need of upgrades, and already facing treatment difficulties that may be exacerbated by climate change impacts." The statement is inaccurate as written, as infrastructure in every community is aging. The issue is that those living in disadvantaged communities are overly-burdened by rate increases to repair and replace aging infrastructure. We recommend that this statement be re-written to read " Disadvantaged communities, rural, and low-income populations of the Central Valley Region are especially vulnerable to the impacts of climate change, since they may not have the economic and population base to fund infrastructure needs. Water and wastewater infrastructure in many communities is aging and in need of upgrades. Some communities are already facing supply and treatment difficulties that may be exacerbated by climate change impacts. "

Conclusions

CASA appreciates the opportunity to provide comments on the Proposed Work Plan. Climate change will impact wastewater treatment facilities and infrastructure on a number of fronts (as described above). Public wastewater agencies can play an important role in delivering climate change solutions - as significant renewable energy providers, suppliers of a marketable renewable organic fertilizer/soil amendment product, and suppliers of a sustainable (drought-proof) water supply - with the necessary incentives in place and flexibility built into their permits to respond to extreme events. These opportunities can contribute toward 2020, 2030, and 2050 mandates to achieve the greenhouse gas emissions reduction targets identified under both AB 32 and SB 32.

Thank you for considering our comments. Please contact me if you have any questions at (925) 705-6404 or via email at sdeslauriers@carollo.com.

Sincerely,



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CASA Climate Change Program Manager

cc: Debbie Webster - Executive Director, Central Valley Clean Water Association
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Bobbi Larson – Executive Director, California Association of Sanitation Agencies
Greg Kester – Director of Renewable Resource Programs, California Association of Sanitation Agencies