SWRCB Co-Digestion Capacity Analysis for California POTWs

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WATER
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CALIFORNIA Water Boards

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Engineers...Working Wonders With Water®

Driver: SB 32 mandates CA GHG emissions be reduced by 40% below 1990 levels by 2030

2019
Today

2025
75% diversion of organic waste from landfills to reduce methane emissions (SB 1383)

Landfills no longer guarantee acceptance of biosolids as alternative daily cover or disposal

2030
40% below 1990 GHG levels (SB 32)

2045
Statewide Carbon Neutrality (Executive Order B-55-18)

SB 1383 (2016) will implement methane reducing strategies

- 40% methane reduction by 2030 (relative to 2013 levels)
- Organic waste diversion from landfills (*includes biosolids, digestate, and sludges*)
  - 50% by 2020 (relative to 2014 levels)
  - 75% by 2025 (relative to 2014 levels)
- CEC/CPUC to incentivize biogas production/use

CASA estimated POTWs could accept at least 75% of food waste currently landfilled

Adoption in 2020 – Effective 2022 – Enforceable 2024

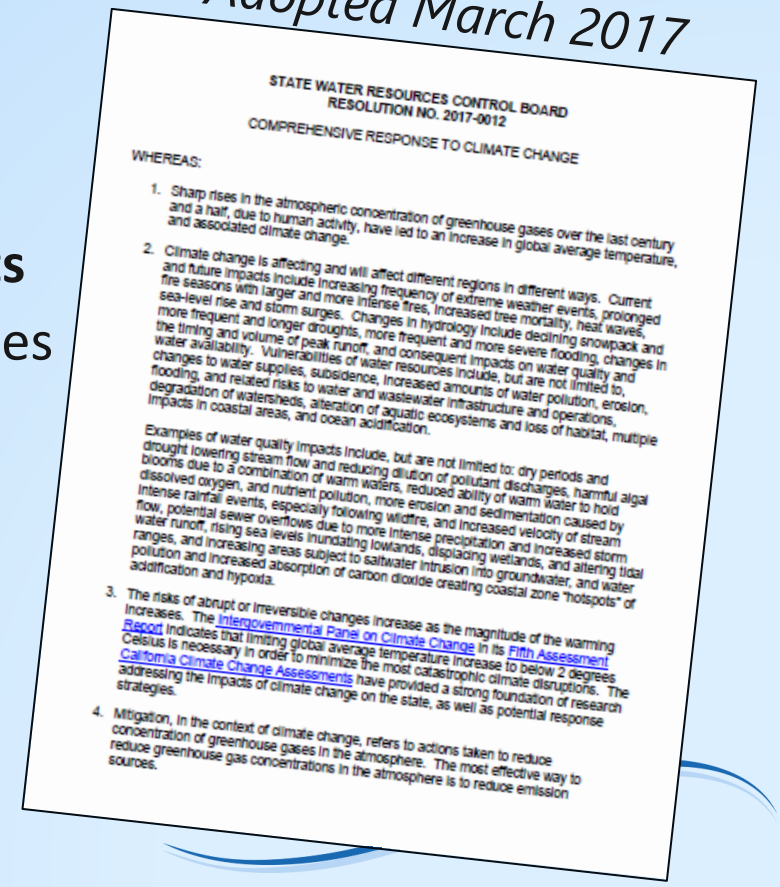
SWRCB Climate Change Resolution & RWQCBs

- Water Boards to play a "…collaborative and substantive leadership role in promoting water measures that mitigate GHG emissions and contribute to adaptation to the effects of climate change…"

30 actions to address:

I. Reducing GHG Emissions
II. Improving Ecosystem Resilience
III. **Responding to Climate Change Impacts**
IV. Relying on Sound Modeling and Analyses
V. Funding
VI. Outreach
VII. Administration

Adopted March 2017



STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2017-0012

COMPREHENSIVE RESPONSE TO CLIMATE CHANGE

WHEREAS:

1. Sharp rises in the atmospheric concentration of greenhouse gases over the last century and a half, due to human activity, have led to an increase in global average temperature, and associated climate change.

2. Climate change is affecting and will affect different regions in different ways. Current and future impacts include increasing frequency of extreme weather events, prolonged fire seasons with larger and more intense fires, increased tree mortality, heat waves, sea-level rise and storm surges. Changes in hydrology include declining snowpack and more frequent and longer droughts, more frequent and more severe flooding, changes in the timing and volume of peak runoff, and consequent impacts on water quality and water availability. Vulnerabilities of water resources include, but are not limited to, changes to water supplies, subsidence, increased amounts of water pollution, erosion, flooding, and related risks to water and wastewater infrastructure and operations, degradation of watersheds, alteration of aquatic ecosystems and loss of habitat, multiple impacts in coastal areas, and ocean acidification.

Examples of water quality impacts include, but are not limited to: dry periods and drought lowering stream flow and reducing dilution of pollutant discharges, harmful algal blooms due to a combination of warm waters, reduced ability of warm water to hold dissolved oxygen, and nutrient pollution, more erosion and sedimentation caused by intense rainfall events, especially following wildfire, and increased velocity of stream flow, potential sewer overflows due to more intense precipitation and increased storm water runoff, rising sea levels inundating lowlands, displacing wetlands, and altering tidal ranges, and increasing areas subject to saltwater intrusion into groundwater, and water pollution and increased absorption of carbon dioxide creating coastal zone "hotspots" of acidification and hypoxia.

3. The risks of abrupt or irreversible changes increase as the magnitude of the warming increases. The Intergovernmental Panel on Climate Change in its Fifth Assessment Report indicates that limiting global average temperature increase to below 2 degrees Celsius is necessary in order to minimize the most catastrophic climate disruptions. The California Climate Change Assessments have provided a strong foundation of research addressing the impacts of climate change on the state, as well as potential response strategies.

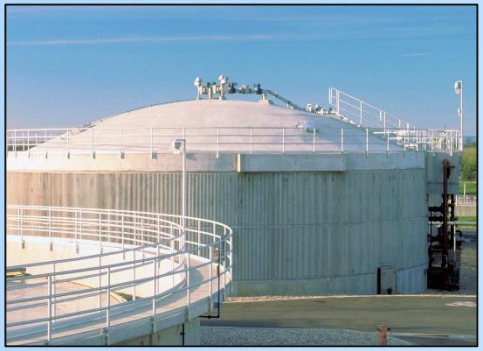
4. Mitigation, in the context of climate change, refers to actions taken to reduce concentration of greenhouse gases in the atmosphere. The most effective way to reduce greenhouse gas concentrations in the atmosphere is to reduce emission sources.

SWRCB's Climate Change Resolution seeks action to mitigate & adapt to impacts

- Division of Water Quality (DWQ, wastewater) & Regional Water Boards called to develop and implement ARB's SLCP Reduction Strategy and SB 1383 regulations:
  - "DWQ to collaborate with Regional Water Boards, ARB, CalRecycle, and California Department of Food and Agriculture, to assess opportunities for **reducing methane emissions from landfills through organic waste diversion**, and **co-digestion at existing or new anaerobic digesters**, **or through composting**, while achieving water quality objectives."

SWRCB used grant funds to lead Co-Digestion Capacity Analysis of CA Municipal WWTPs (2018-2019)

- Purpose:
  "*Enable the Water Board to work with wastewater agencies, local governments, community members and other stakeholders to inform approaches* ***to better coordinate and cost-effectively <u>maximize</u>*** *organic waste* ***diversion*** *from landfills,* ***co-digestion at wastewater treatment plants****, and* ***beneficial biogas and biosolids utilization****."*



All tasks are were completed and the final report was submitted to SWRCB end of July 2019

1. Estimated food waste disposal in 2025 and 2030
2. Assessed existing capacity without rehab/modifications
3. Assessed capacity in 2025 & 2030 without & with rehab/modifications
4. Assessed methane emissions
5. Additional Topics:
   - Investigated opportunities and barriers at small- to medium-sized facilities
   - Examined pilot/demonstration facilities that have already operated

EBMUD

SANITATION DISTRICTS OF LOS ANGELES COUNTY

SWRCB staff reviewing and will release the document to the public by end of 2019!

Questions?