



August 3, 2021

Ms. Rajinder Sahota
Deputy Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on Natural and Working Lands in the 2022 Climate Change Scoping Plan

Dear Ms. Sahota:

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to comment on the Natural and Working Lands (NWL) Presentations given on July 20, 2021. CASA strongly supports the inclusion of NWL in the 2022 Climate Change Scoping Plan and the recognition of the role biosolids can play on NWL to mitigate climate change.

CASA is an association of local public agencies, engaged in advancing the recycling of wastewater into usable water, as well as the generation and use of renewable energy, the beneficial use of biosolids, and other valuable resources. Through these efforts we help create a clean and sustainable environment for Californians. Our members are focused on helping the state achieve carbon neutrality by 2045, including the interim 2030 greenhouse gas (GHG) emissions reduction goals, which include:

- Reducing short-lived climate pollutant (SLCP) emissions.
- Effectively diverting organic waste from landfills.
- Providing 60 percent of the state's energy needs from clean and renewable sources.
- Reducing carbon intensity of transportation fuel used in the state.
- Increasing soil carbon and carbon sequestration under the Healthy Soils Initiative, Forest Carbon Plan, and Natural and Working Lands Climate Change Implementation Plan.

Biosolids are produced as an inherent part of the essential public service provided by wastewater treatment. Recycling biosolids to agricultural land completes natural nutrient cycles. Biosolids can be beneficially used in agricultural, silvicultural, rangeland, and other settings through which they help to mitigate climate change by substituting for the use of fossil fuel intense inorganic fertilizer and by improving long-term sequestration of carbon in soil. Roughly 0.22 gallons of fossil fuel is required to produce every pound of inorganic nitrogen fertilizer, illustrating the tremendous offset gained by using biosolids as a renewable fertilizer. Further mitigation is accomplished via carbon sequestration by land application of biosolids to the soil which also increases soil organic matter, both of which are prime objectives of the NWL Program. Because biosolids are an organic matrix, rich in organic carbon and nitrogen as well as other valuable micro and macro nutrients, biosolids improve soil tilth, reducing the need for irrigation by increasing the soil's water holding capacity, and increasing crop production. Biosolids appear not to be recognized by CARB for their many climate co-benefits and we strongly urge their inclusion in the NWL implementation and the 2022 Scoping Plan Update.

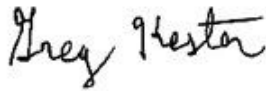
In October of 2020, the Governor issued [Executive Order N-82-20](#), directing state agencies to advance strategies that will conserve at least 30 percent of California's lands and waters by 2030 as a way to combat the climate crisis, conserve biodiversity, and boost climate resilience. While CARB has been collaborating with the California Department of Food and Agriculture (CDFA), California Natural Resources Agency (CNRA), and California Environmental Protection Agency (CalEPA) on the [Healthy Soils Initiative](#) to

incentivize carbon sequestration benefits of land applying compost and other organic amendments to the soil, CASA strongly encourages CARB to also work with the State and Regional Water Boards and to include biosolids and biosolids compost as an eligible soil amendment in the NWL Climate Change Implementation Plan as well as the [Healthy Soils Initiative](#) and the [Forest Carbon Plan](#). There is a significant body of research from across the U.S. already completed which demonstrates the many co-benefits from land application of biosolids, including local research recently completed by Dr. Rebecca Ryals on California soils out of UC-Merced. In addition to achieving carbon sequestration, there is strong evidence of increased soil carbon leading to increased water retention capacity resulting in reduced need for irrigation, improved soil tilth, increased crop yields, and enhanced crop stress tolerance and growth in drought conditions.^{1,2} Additionally, the Climate Action Reserve adopted its [Soil Enrichment Protocol](#) in September 2020, acknowledging biosolids as an eligible soil amendment to mitigate climate change. CASA would like to work with CARB and sister regulatory agencies to include biosolids as an eligible organic soil amendment that can help satisfy each of the goals being pursued by the [Natural and Working Lands Climate Change Implementation Plan](#).

CASA greatly appreciates the opportunity to provide comments on the July 20, 2021 presentations and we look forward to working with CARB collaboratively on this process and on the 2022 Climate Change Scoping Plan. We want to emphasize that the wastewater sector and individual members/ POTWs can provide cross-sector benefits in perpetuity by supplying a renewable organic soil amendment in the form of biosolids and by being environmental stewards of our natural and working lands by restoring our soils.

Please contact me at gkester@casaweb.org or via phone at 916-844-5262 for any further clarification or with any questions.

Thank you,



Greg Kester
Director of Renewable Resource Programs

¹ Zhang, Xunzhong. et al. (2009) Impact of Biosolids on Hormone Metabolism in Drought-Stressed Tall Fescue. Crop Science, Vol 49: 1893-1901.

² Zhang, Xunzhong. et al. (2006) Biosolids Impact on Tall Fescue Drought Tolerance. Journal of Residuals Science & Technology, Vol 3, No 2: 87-94.