BIOSOLIDS:
A RENEWABLE RESOURCE

In 2019, Californians generated approximately 667,000 dry metric tons of biosolids, the vast majority of which were used for land application on agricultural land.

What are Biosolids?

Biosolids are a nutrient-rich by-product of wastewater treatment. It is highly processed, regulated, and monitored to ensure public safety.

moist solid | dried pellets | liquid | compost

By recycling biosolids to the soil, we complete the natural carbon cycle. Biosolids are rich in micro- and macro-nutrients and microbes that improve soil health through land application on agricultural soil, but can also be used for reclamation projects.

Soil Enrichment

Biosolids provide multiple benefits for healthy, sustainable soils, such as:

- Improving soil's ability to absorb and store moisture; reducing the need to irrigate, and providing natural drought-resistance
- Improving soil quality and crop health, and increasing crop yields by providing vital micro and macro nutrients, microbes, organic matter, and other benefits.
- Storing carbon in the soil and reducing greenhouse gas emissions and energy consumption (unlike fossil-fuel-based, inorganic fertilizer)
- Most of the nitrogen in biosolids is organic, acting as a slow-release fertilizer, providing nitrogen when the crop needs it rather than all at once

Land Reclamation

Because biosolids have high organic content, they're exceptional at reclaiming fire-impacted land while reducing the potential severity of future fires. Coupled with their ability to strongly bind contaminants (assimilative capacity), they are also highly beneficial for reclaiming superfund mine sites, contaminatedurban soils such as brownfields, overgrazed rangeland, and select wetlands.

Biosolids allow plants to thrive on less water

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Highly Regulated for Safety

To ensure public and environmental safety, all aspects of biosolids use are carefully planned and implemented according to comprehensive federal, state, and local regulations.

Biosolids and the Environment

It's a common misconception that biosolids contain harmful levels of heavy metals. First, pre-treatment requirements regulate what can be discharged to wastewater treatment plants. Then, rigorous treatment, management practices, and regulatory oversight ensure low metal content and minimize or eliminate viablepathogens. Efforts to incorporate evolving data on emerging constituents ensure continued safety.

Helping California Achieve Legislative Goals

A process called anaerobic digestion, used to treat solids from more than 90% of wastewater flow at California treatment plants, produces methane, which is then used as a fuel source. Coupled with biosolids recycling, wastewater treatment plants are helping the state achieve itslegislative goals and mandates, including:

- A 40% reduction from 1990 levels of carbon dioxide equivalent emissions
- The production of at least 60% of energy needs from renewable sources
- The diversion of 75% of organic waste from landfills using 2014 levels as a baseline
- A 20% reduction in the carbon intensity of transportation fuel
- Healthy soils for production agriculture
- Reduction of short-lived climate pollutants for climate change mitigation

Want to Learn More About Biosolids?

Please visit **casaweb.org** for our biosolids factsheet and additional information.

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