



California Association of Sanitation Agencies

# BIOSOLIDS ARE A RESOURCE, NOT A WASTE!

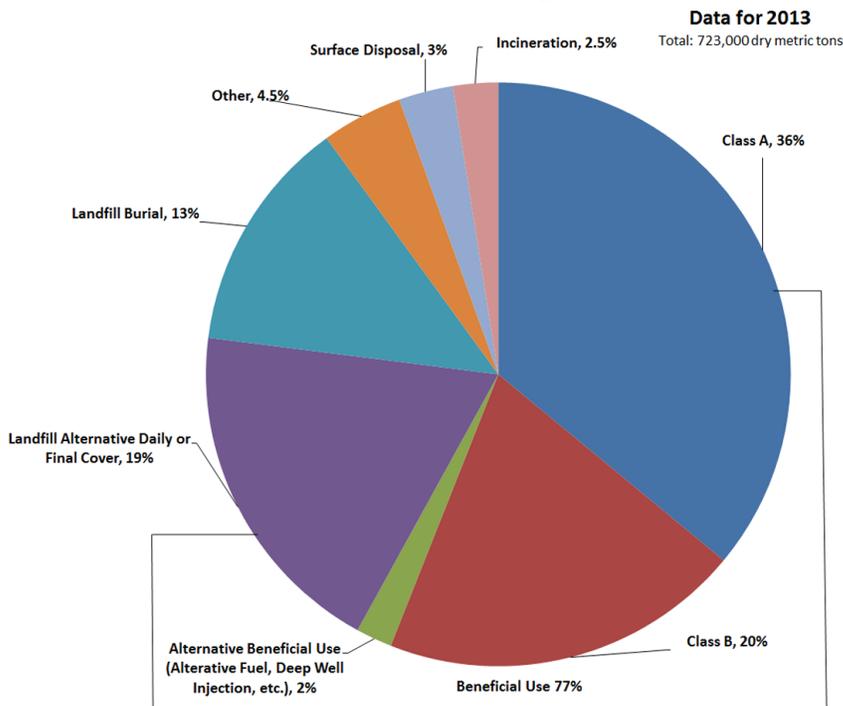
Ensuring Clean Water for California



## What Are Biosolids?

- Biosolids are the nutrient rich natural by-product of wastewater treatment. They are highly processed and analyzed to ensure their safety. Biosolids are generally used in one of four forms: as a nutrient-rich, moist solid, dried pellet, liquid, or compost. Biosolids are generally recycled as a soil amendment, but may also be used as final or alternative daily cover at landfills. Increasingly, they may also be used as an alternative energy source
- Class A biosolids contain less than detectable levels of pathogens (disease causing organisms) prior to land application or public distribution. Regulatory safeguards ensure that Class B biosolids are also safe to use even though they may have minimal levels of pathogens. Drying, sunlight, and other natural processes cause pathogens to rapidly die-off when applied to soils; essentially becoming equivalent to Class A standards within a short period following application. Rigorous treatment, management practices, and regulatory oversight for both Class A and Class B biosolids minimize the possibility of attracting any carriers of pathogens.
- Land applied biosolids must meet federal and state standards for 9 regulated pollutants (from arsenic to zinc). Virtually all California biosolids fall far below the risk based "High Quality" limits for all pollutants. This is in large part due to the successful implementation of strict pretreatment requirements enacted in the 1980's which regulate what industries can discharge to wastewater treatment plants.
- Californians generated approximately 723,000 dry metric tons of biosolids in 2013; the majority of which went to land application.

## How Are Biosolids Produced in California Managed?



## Environmental Benefits

- Biosolids recycling improves soil quality and crop health, and increases crop yields.
- Biosolids improves the soil's ability to absorb and store moisture, reducing the need to irrigate and providing natural drought resistance.
- Biosolids sequesters carbon in the soil and reduces greenhouse gas (GHG) emissions and energy consumption as compared to the production of fossil fuel based inorganic fertilizer.
- Biosolids use lowers fertilizer use and expense, as nutrient rich biosolids can supplement or replace commercial fertilizers.
- Biosolids can help reclaim fire ravaged land, superfund mine sites, and deforested areas.
- Biosolids can be treated for use as a supplemental or direct fuel source to create energy.
- Biosolids can be used as alternative daily or final cover at landfills, reducing the use of clean soil and other valuable materials.

## How Are Biosolids Handled?

- Comprehensive state and federal regulations govern biosolids recycling and ensure public safety.
- Trained personnel conduct quality testing at wastewater treatment plants to ensure all biosolids meet or exceed regulatory standards before recycling.
- Enclosed trucks transport biosolids.
- Biosolids are the most regulated material applied to land. Class B sites include buffer zones, limited public access, and harvesting restrictions. Class A biosolids are further regulated comparably to commercial fertilizer.



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## Waste to Energy Benefits

- Anaerobic digestion, used in treating almost all biosolids, produces methane which is then used as a fuel source to power treatment plant operations. Excess power can be sold to the grid. Methane can also be converted to low carbon transportation fuel or injected into common carrier pipelines
- Biosolids can be used as an alternative fuel in place of coal in industrial processes such as the cement industry.
- Biosolids can produce energy directly via innovative technologies
- The energy thus produced from solids reduces the need for fossil fuels and reduces greenhouse gas emissions.

## What Major Laws Regulate Biosolids?

- US EPA's risk and technology based regulation is found in 40 CFR part 503
- California State Water Resource Control Board's General Waste Discharge Requirements (WDR) known as the "General Order"
- California Department of Resources Recycling and Recovery (CalRecycle) composting facility permits
- Local ordinances and permits, including Regional Water Board WDR's

## Who Oversees Biosolids Generation and Management?

- Local public agencies that produce biosolids
- Regional Water Quality Control Boards
- State Water Resources Control Board
- California Department of Resources Recycling and Recovery
- Air Pollution Control Districts/Air Quality Management
- Districts
- US EPA Region 9
- Local enforcement agencies

## Public Policy Issues

- Public policies need to support biosolids recycling through land application, composting and other energy and waste recovery means.
- Federal, state and local regulations affecting biosolids recycling reflect the findings of scientific research and should assure the public of the safety of biosolids and their value for society and the environment.
- Since federal (40 CFR 503) and state (General Order) regulations are based on sound science through exhaustive research, local regulations should be consistent with them.
- Some members of the public have voiced concern over the land application of biosolids in some parts of California. Best management practices should always be employed to assure the public that due diligence is given to their concerns.
- The fact that biosolids land application and beneficial use is one of the most successful recycling programs in the nation should be communicated frequently. Some rural residents view the practice as an urban "dumping" program. The tremendous benefits that farmers and soil realize by recycling biosolids to land should be better articulated.
- Biosolids possess energy and climate change mitigation potential, which should be utilized to the greatest extent possible.

## For More Information

- California State Water Resources Control Board  
[www.swrcb.ca.gov/programs/biosolids](http://www.swrcb.ca.gov/programs/biosolids)
- US Environmental Protection Agency  
[www.epa.gov/owm](http://www.epa.gov/owm)
- US EPA Region  
[www.epa.gov/region9](http://www.epa.gov/region9)
- California Association of Sanitation Agencies  
[www.casaweb.org](http://www.casaweb.org)
- Local Wastewater Treatment Plant websites
- National Biosolids Partnership  
[www.biosolids.org](http://www.biosolids.org)



### Mission Statement

The mission of the California Association of Sanitation Agencies is to provide leadership, advocacy and information to our members, legislators and the public, and to promote partnerships on clean water and beneficial reuse issues that protect public health and the environment.

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