

Orange County Sanitation District

Biosolids Management Policy

Summary Policy Statement

The Orange County Sanitation District (OC San) will remain committed to a sustainable biosolids program and will beneficially reuse biosolids in accordance with Resolution No. OCSD 13-03 and the 2017 Biosolids Master Plan.

Background

Wastewater solids at both our treatment plants are separated, thickened, digested, and dewatered before being recycled offsite by contractors for composting and land application. Biogas created from the digesters is used to generate electricity to offset the need to purchase power from a local utility. Although OC San currently receives sewage sludge from the Irvine Ranch Water District (IRWD) at Plant No. 1, IRWD is currently commissioning its own solids treatment facility and is anticipated to discontinue the sludge transfer to OC San by the second half of 2021.

Prior to 2019, OC San produced an average of 800 wet tons per day (~20% solids) of Class B biosolids that were dewatered by belt presses. Following the commissioning of the co-thickening sludge and dewatering centrifuge system in 2019, OC San has been producing approximately 500-600 wet tons per day (23%-28% solids), which resulted in an approximately \$4 million per year reduction of biosolids hauling costs.

OC San's biosolids program is developed in compliance with federal, state, and local regulations, OC San's biosolids policy ([Board Resolution 13-03](#)), biosolids management system, and the 2017 Biosolids Master Plan (Plan). OC San's adaptive and highly effective biosolids program emphasizes diversification of beneficial reuse options and markets for biosolids. Although cost is a key consideration, the incorporation of failsafe options is considered paramount. These principles align with the policy and Plan, and provide a framework for identifying and adopting reliable and sustainable biosolids management options while minimizing cost. Moreover, through innovation and continuous improvements in its biosolids management practice, OC San has been well-positioned to sustain regulatory compliance and its commitment to beneficially reuse biosolids. Currently, about 60% of the annual biosolids production is producing Class A compost in California and about 40% is used for Class B land application in Arizona.

The Plan forecasted future capital improvements projects needed to sustain responsible and cost-effective biosolids management over a 20-year planning horizon. As an example, OC San has initiated a project at Plant No. 2 to construct new mesophilic and thermophilic digesters and batch holding tanks that will generate Class A biosolids beginning in 2030. These new digesters are needed to increase operational resiliency

against seismic events and biosolids reuse options. Plant No. 1 will continue to produce Class B biosolids.

According to the Plan, upon commissioning the new mesophilic and thermophilic digesters, future biosolids management options may include:

- **Emerging markets:** Management options and technologies that become available following the adoption of the Plan, such as mine and fire reclamation, gasification, pyrolysis, supercritical oxidation, fluidized bed combustion, and cement kiln drying.
- **Soil blending:** Partner with local soil blenders to deliver and blend Class A biosolids with soil to produce a high-quality soil amendment that can be used in a larger variety of markets than current Class A compost such as construction back-fill.
- **California land application:** While Class A compost and granules are currently land-applied in California, land application of Class A biosolids is still restricted in most counties. However, with the recent implementation of California's organics diversion regulations and planned enforcement in 2022, stringent local ordinances that unreasonably restricts the land application of biosolids are prohibited.
- **Arizona land application:** Land application in Arizona will continue to be a part of OC San's overall biosolids program and serves as a large-capacity outlet for biosolids management.

Current Situation

The legislative and regulatory landscapes in California are changing regarding organics management. Since 2003, direct land application of Class B biosolids in Southern California has largely been prohibited due to strict ordinances and conditional use requirements that preempted state recycling laws. However, in recent years there has been a greater focus on healthy soils, renewable energy, organics diversion from landfills, and reduction of Greenhouse Gases (GHGs), which are reflected in several bills and initiatives that have been adopted:

- AB 1826 (2014) - Mandatory Organics Recycling for Businesses.
- SB 1383 (2016) - 50% organics diversion from landfill by 2020 and 75 % by 2025, which includes biosolids and mandatory organics procurement (compost and biogas) for impacted jurisdiction.
- SB 32 (2016) - 40% Reduction GHG below 1990 levels by 2030
- SB 100 (2018) - 50% renewable resources (i.e., anaerobic co-digestion of food waste) target by December 31, 2026, and to achieve a 60% target by December 31, 2030.
- Increasing soil carbon and carbon sequestration under the Healthy Soils Initiative and Forest Carbon Plan.

In combination, these measures are expanding the “organic waste markets”, thereby stimulating interest in siting more composting facilities and organic waste-to-energy projects and could also support soil blending and direct land application of biosolids and create opportunities for wastewater agencies to innovate. Agencies such as the State Water Resource Control Board, CalRecycle, California Department of Food and Agriculture, California Air Resources Board, and California Energy Commission are developing regulations to implement the new laws. Throughout the rulemaking process, OC San has been actively involved through the California Association of Sanitation Agencies (CASA) and the Southern California Alliance of POTWs (SCAP) to encourage regulators to open more biosolids management options in California. In particular, the recently adopted regulations for SB 1383 require jurisdictions such as cities and counties to procure recycled organics such as compost and biogas for localized beneficial reuse.

It is worth noting that while there is growing interest in California for enhanced organics management, there has also been a rising concern from the regulatory community regarding emerging contaminants such as polyfluoroalkyl substances (PFAS) and microplastics. These ubiquitous, often household, compounds have been detected in the wastewater pathway and biosolids, and OC San has been actively monitoring the development of the science and regulations across all water, wastewater, air, and soil sectors. To date, PFAS regulations have been established for drinking water and a series of phased investigative orders were issued by the SWRCB to examine the fate and transport of PFAS. Wastewater treatment plants were included in Phase 3 of the investigative order, and OC San is on track to complete all required sampling, analysis, and reporting. Additionally, staff have gathered state-of-the-technology information through a Request for Information (RFI) process and are currently evaluating available biosolids thermal conversion technologies that could destroy persistent contaminants such as PFAS.

Policy Statement

As environmental regulations continue to drive the organic waste markets in California, OC San will continue to leverage its memberships with various professional/industry associations to encourage local, state, and federal agencies to promote the beneficial reuse of biosolids. OC San will also continue to monitor the development of regulations for constituents of emerging concern that may impact the beneficial reuse of biosolids.

OC San’s long-standing leadership role in key professional organizations will continue to ensure timely and meaningful engagement on key regional, state, and national biosolids management policies.

OC San will continue to stay abreast of new biosolids management options, technologies, and regional biosolids recycling and renewable energy partnerships within Southern California, especially those that address the removal, sequestration, and destruction of constituents of emerging concern.

Based on the findings from the abovementioned RFI, staff will develop a pilot project to explore biosolids thermal conversion technology for energy generation and persistent contaminant destruction.

Consistent with the Plan, staff will work with OC Waste and Recycling (OCWR) to explore regional biosolids management opportunities as well as local solutions to meet SB 1383's organics diversion mandates, with emphasis on in-county biosolids utilization, composting, food waste co-digestion, and biogas production.

Initiatives to Support Progress Toward the Policy Goal

Initiative: Proceed with implementation of new mesophilic and thermophilic biosolids facilities at Plant No. 2 to improve OC San's operational resiliency against seismic events while enhancing biosolids quality and marketability.

Initiative: Staff will continue to explore biosolids thermal conversion technology for energy generation and destruction of persistent contaminants.

Initiative: Engage with local, state, and federal agencies to ensure that biosolids will continue to be safely and legally used as a soil amendment.

Initiative: Stay abreast of new biosolids management options, technologies, and biosolids recycling and renewable energy partnerships in Southern California, with special emphasis on technologies that address the removal, sequestration, and destruction of contaminants of emerging concern.