

## **Proposed Orange County Sanitation District Biosolids Management Policy**

*Should OCSD explore alternative uses for biosolids?*

### **Summary Policy Statement**

The Orange County Sanitation District (the Sanitation District) will remain committed to a sustainable biosolids program and will beneficially reuse biosolids in accordance with Resolution No. OCSD 13-03 (attached) and the 2017 Biosolids Management 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. The Sanitation District currently receives sewage sludge from the Irvine Ranch Water District at Plant No. 1, which is scheduled to cease by 2021 when Irvine Ranch Water District completes their own solids treatment facility.

Prior to 2019, the Sanitation District produced an average of 800 wet tons per day (~20% solids) of Class B biosolids dewatered by belt press units. Presently, with the construction and commissioning of co-thickening sludge and dewatering centrifuges, the Sanitation District has been producing approximately 500-600 wet tons per day (25%-29% solids) with biosolids hauling cost savings of approximately \$200,000-400,000/month due to the reduction in volume.

The Sanitation District's biosolids program is shaped by federal, state, and local regulations and by the Sanitation District's biosolids policy ([Board Resolution 13-03](#)), our biosolids management system, and the 2017 Biosolids Master Plan (Plan). The Sanitation District manages a high quality biosolids program built on a solid policy that emphasizes the diversification of product markets for Class A and B biosolids utilized as a soil amendment for agriculture and horticulture uses. The policy also sets direction to seek opportunities in emerging markets such as biosolids-to-energy technologies to produce renewable energy in the form of biogas or used as a heating value source.

These marketing principles are aligned and supported by the Plan, which provides the Sanitation District a roadmap and framework for reliable and sustainable biosolids management options while minimizing cost. In addition, the Plan sets future capital facilities improvements over a 20-year planning horizon. The Sanitation District will be implementing the Plan to develop a capital improvement project for Plant No. 2 that will result in a major change to the Sanitation District's biosolids program; namely, the construction of new mesophilic and thermophilic digesters that will generate Class A biosolids beginning in 2030. These new digesters are needed for operational resiliency against seismic events. Plant No. 1 will continue to produce Class B biosolids.

The Plan evaluated end-use management alternatives for the Sanitation District's biosolids. This work supports the Sanitation District biosolids policy and has taken into account the regulatory

initiatives imposed on organic management in California as explained below. The Plan established a roadmap for the Sanitation District's commitment to beneficial use of its biosolids. The biosolids management portfolio for the Sanitation District is expected to remain similar to the overall current biosolids management end use options as it is today. Currently about half of the annual production going to contract composting and half going to Class B land application in Arizona.

The significant shift will begin when the Sanitation District starts reliably generating Class A biosolids at Plant No. 2. Although this is more than 10 years away, the Plan has identified early planning efforts on future end uses which include:

- Emerging markets: This end use refers to either markets in which biosolids have not been tested in California at this time (e.g., land reclamation) or emerging-technology solutions (e.g., biosolids gasification, supercritical oxidation, fluidized bed combustion, cement kiln drying, pyrolysis etc.).
- Soil blending: This option involves working or partnering with local soil blenders to deliver and blend Class A biosolids with soil to produce a soil amendment.
- Arizona land application: Land application in Arizona will continue to be a part of the Sanitation District's overall biosolids program and serves as a large-capacity outlet for biosolids management.
- California land application: While Class A compost and granules are currently land-applied in California, land application of Class A cake is still restricted in most counties. However, it is anticipated that the implementation of California's organics diversion mandates will loosen local land applications restrictions.

This programmatic framework described above has led to a reliable and sustainable biosolids management program that is designed for the beneficial use of the Sanitation District's biosolids through the utilization of diverse biosolids management options using multiple biosolids contractors, markets, and merchant facilities, while maintaining a failsafe backup capacity of at least 100 percent of the Sanitation District's daily biosolids tonnage. This forethought is necessary due to the flux of regulatory, environmental, market, and financial factors that poses potential risks to the biosolids management in California.

### **Current Situation**

The legislative and regulatory landscapes in California are changing regarding organic management. For the past 15 years, direct land application of Class B biosolids has been predominately prohibited due to strict local ordinances and conditional use requirements, which preempts state recycling laws. However, in recent years there has been a need for organics diversion from landfills, healthy soils, renewable energy, and reduction of Green House Gases (GHGs), which are reflected in several important bills (laws) 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

These measures are expanding “organic waste markets,” thereby stimulating interest in siting more composting facilities and organic waste-to-energy projects and encouraging soil blending and direct land application of biosolids, opening opportunities for wastewater treatment plants such as the Sanitation District to locally manage more biosolids. Regulatory 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. During the rule making process, the Sanitation District has been actively involved through the California Association of Sanitation Agencies (CASA) and the Southern California Alliance of POTWs (SCAP), advocating regulators to open more biosolids management options in California. In particular, the proposed regulations for SB 1383 will require jurisdictions such as cities and counties to procure recycled organics such as compost and biogas for beneficial reuse. This organic market will provide opportunities for regional public and/or private partnerships for biosolids management options.

Although there is growing interest in California for organics management, there has also been a rising concern from the regulatory community regarding emerging contaminants such as polyfluoroalkyl substances (PFAS) and microplastics that may have some potential impact to the wastewater sector. Although to date there are no regulatory limits of these contaminants in biosolids or wastewater in California, the Sanitation District has been actively monitoring the development of the science and regulation concerning these emerging concerns.

### **Future Policy Statement**

As the regulatory landscape shapes to stimulate organic waste markets in California, the Sanitation District seeks to leverage its memberships with various industry associations to advocate local, state, and federal agencies to assure biosolids proposed regulations encourage the beneficial use of biosolids as a soil amendment, renewable energy, and a healthy end-use market. The Sanitation District also leverages its memberships to monitor the development of initiatives related to constituents of emerging concern that may impact the beneficial use of biosolids. The Sanitation District’s leadership role in these organizations enables us to have a greater influence in key regional, state, and national issues.

The Sanitation District seeks to stay abreast of developments in organic waste markets as they develop in California. The Sanitation District seeks both public and private partnerships with regional biosolids management opportunities including new innovative technology options that convert biosolids to energy and other biosolids recycling operations. This is consistent with the

Sanitation District's biosolids policy and Plan. To accomplish this, the Sanitation District will issue a request for information to research and evaluate available emerging market such as biosolids-to-energy options or other biosolids recycling operations within a 200-mile radius of the Sanitation District to potentially develop a scope of work and minimum requirements for a future contract solicitation.

Consistent with the Sanitation District's Plan, staff will seek to collaborate with OC Waste and Recycling (OCWR) for regional biosolids management opportunities as well as partnering with OCWR to find local solutions to meet SB 1383's organics diversion mandates including in-county biosolids management, composting, food waste co-digestion, and biogas production.

**Initiatives to Support Progress Toward the Policy Goal:**

**Initiative:** Educate and advocate with the local, state, and federal agencies to assure biosolids will continue to be safely and legally used as a soil amendment and monitor and research the development of initiatives of constituents of emerging concerns such as PFAS and microplastics that may impact biosolids.

**Initiative:** Stay abreast of new technology options to convert organics to energy and other regional biosolids recycling and renewable energy partnerships within Southern California.

**Initiative:** Proceed with mesophilic and thermophilic biosolids facility at Plant No. 2 to enhance biosolids quality and marketability while improving the Sanitation District's operational resiliency against seismic events.