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Challenges and Opportunities Provided by SB 1383 for Biosolids, Biogas, and Diverted Organics

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California Association of Sanitation Agencies

- Represent more than 90% of sewered pop of California

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California Biosolids Management 2018

- Generated: 675,000 Dry Metric Tons (DMT)

- Land Application: 480,000 = 71%
- Landfill: 113,000 = 17%:
  - 86,000 ADC 13%; 27,000 Burial 4%
- Incinerate: 24,000 = 4%
- Surface Disposal: 17,000 = 3%
- Deep Well Injection: 11,000 = 2%
- Storage, long-term treatment: 30,000 = 4.5%

California Biosolids Management 2018

- Land Application: **480,000 dmt = 71% of total**
  - Class A: 316,000 = **66% of total land applied**
    - Compost 246,000
    - Thermophilic digestion: 45,000
    - Heat drying: 13,000
    - Hydrothermal treatment: 5,000
    - Air drying, testing for pathogens: 7,000
  - Class B: 164,000 = **34% of total land applied**

Out-of-state:

- Arizona: 102,000 dmt = 21% of total land applied
  - 90,000 dmt directly land applied, 12,000 composted
- Nevada: 3,000 dmt = 0.5% of total land applied
  - 2,000 dmt composted, 1,000 dmt directly land applied

CA State Mandates/Goals

- 50% Renewable Energy by 2026, 60% by 2030, 100% by 2045
- 75% Recycling of Solid Waste by 2020 (Goal)
- Achieve 40% below 1990 levels of CO2 emissions by 2030
- 7.5% reduction in Carbon Intensity of transportation fuel by 2020, 20% by 2030
- Reduce Short-Lived Climate Pollutants (40% methane reduction by 2030)
- Healthy Soils Initiative

State Mandates/Goals (cont'd)

- Reduce Short-Lived Climate Pollutants (SB 1383)
  - 40% below 2013 methane emissions by 2030
  - 50% organics diversion below 2014 levels by 2020
  - 75% organics diversion below 2014 levels by 2025
- Healthy Soils Initiative
  - Biosolids help achieve every goal of Action Plan
  - Carbon Sequestration, improved soil tilth, reduced need for irrigation, increased crop yield
  - Reduce the use of fossil fuel-intense inorganic fertilizer

Opportunities Offered by the Wastewater Sector To Contribute to State Mandates/Goals

- **Use of existing infrastructure** to accept at least 75% of food waste currently landfilled for anaerobic digestion
- **Increase biogas production** to generate renewable energy, low carbon transportation fuel, and pipeline grade RNG, in turn decreasing fossil fuel-based greenhouse gas emissions
- Build healthy soils, sequester carbon, and reduce fossil fuel-based inorganic fertilizer use through **land application of biosolids**
- **Develop collaborative partnerships** with private sector

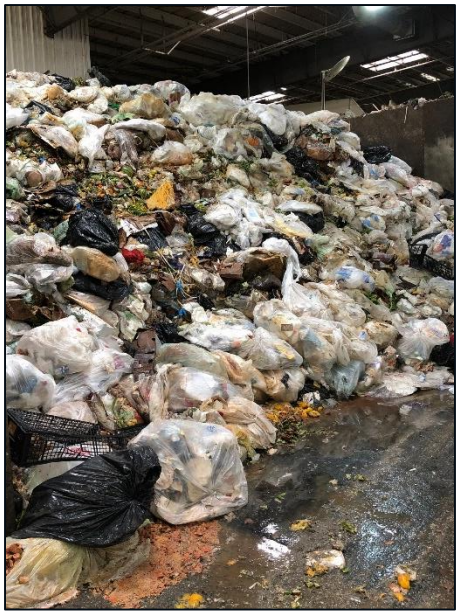
Existing AD Infrastructure Can Accelerate Diversion of Organics from Landfills

Opportunity

- ~150 WWTPs utilize anaerobic digestion
  - Often located in urban areas near waste generation → shorter hauling distance

Challenges/Needs

- Must build partnerships with Solid Waste Sector to maximize effective diversion
- Cleanliness of organic waste stream must be assured (whether for co-digestion, digestion, or compost)
- **Markets must be assured for both biogas & biosolids**



Challenges in Scaling Up Food Waste Acceptance

- Cost
  - Capital: Pre-processing, receiving facilities
  - Operating: Grit management, solids handling

- Risk
  - Pre-processing technology is immature
  - Not core business
  - Lack of interested partners
  - Competition for feedstock
  - Uncertain market for end products
    - Biosolids
    - Biogas

Challenges for Marketing Increased Biogas

- Local Air Districts impose restrictive limitations on emissions from IC Engines and turbines to comply with CAA.
- Others limit volume of biogas which can be produced.
- Pipeline injection still very costly to interconnect and siloxane limits still an issue, though CPUC lowering heating value to 970 BTU/scf.
- CalOSHA and CAL ARP may also have requirements which need to be considered. Exemption if all biogas is combusted, used, or sold on-site.
- If biogas sent across fenceline and hold more than 10,000 pounds of biogas at any time on-site, then exemption may be lost! – STILL Trying to Understand Why – Stay tuned.

US Renewable Fuel Standard (RFS) Revised - July 18, 2014

- Established reclassifications for credits (RIN) for fuels to reduce dependence on foreign oil
- Concluded that wastewater treatment plants, dairies, and separated municipal solid waste digesters, and landfills producing RFS from biogas to qualify for highest value RIN (Cellulosic D3)
- Food waste common component of sewage sludge (SS) and when accepted through sewerage system or at headworks considered inherent component of SS and qualified as D3 RIN.

Renewable Information Numbers (RINs)

- Food Waste when introduced at anaerobic digester rather than through sewerage system or at headworks devalues entire volume to Advanced Biomass fuel (D5)
- D5 value fluctuates between roughly 10 – 25% of the value of D3
- Tremendous disincentive to co-digest diverted food waste

Renewable Information Numbers (RINs)

- Met with Office of Science and Technology in February
- Wrote letter to Administer Wheeler March 25, 2019
- Argued that food waste introduced at AD is no different and more efficient than at headworks and entire volume should be D3
- Expect dialogue to continue and optimistic engineering and logic will prevail

CA Low Carbon Fuel Standard (LCFS)

- Program to ensure reduction of carbon intensity in transportation fuel in CA
- Adopted revised regulations in late 2018
- Eliminated established pathways for biogas from wastewater treatment AD - Replaced them with *simplified calculator*
- Continue working with Air Board, who wants Wastewater Sector engaged in program

Market Needs for Biosolids (cont'd)

- Roughly 20% of biosolids produced are managed at landfills either as ADC or for disposal
- ~70% of biosolids are currently land-applied as a soil amendment, but there are challenges due to local ordinances
- Most ordinances were adopted in late 1990s and are no longer supported or needed. Management and oversight have improved significantly!
- Reclamation projects represent tremendous further opportunity
- State is addressing markets for both biogas and biosolids in draft SB 1383 regulations – Strongly support!!

Market Needs for Biosolids

Opportunity

- Land-applied biosolids support every goal in the HSI Action Plan
  - Offsets inorganic fertilizer use/production
  - Increases soil carbon content and stability
  - Increases water holding capacity
  - Increases nutrient use efficiency
  - Increases crop yield
  - Sequesters carbon in the soil below

HSI = ?

Reclamation Opportunities with Biosolids

- Fire-Ravaged Lands
- Brownfields
- Superfund and other mine sites
- Overgrazed Rangeland

Lake County

Recommendations to Ensure Legislative Intent (of SB 1383) is Achieved & Now Proposed

- Ensure ability to utilize increase in biogas production – **Included procurement requirements for RNG Transportation Fuel and/or compost – (almost there!)**

- Remove barriers imposed at jurisdictional borders through restrictive ordinances on biosolids land application – **Established the Federal 40 CFR 503 Appendix B standards and land app under Water Boards General Order or site-specific WDRs as the statewide standard** and language to pre-empt local ordinances that are more restrictive – **(almost there!)**

Few Remaining Issues with Draft SB 1383 Regulatory Language

- Biosolids must be anaerobically digested and/or composted to qualify as landfill reduction (and not subject to local ordinances)
- Language could be construed as disallowing other treatment technologies and management other than land application
- Procurement products limited to Compost and Renewable Fuel – Seek to expand to all compliant biosolids and all productive use of biogas
- Seek clarity that jurisdictions and POTWs can negotiate whether biosolids can continue to be landfilled

AB 901

- Legislation passed in 2015 to track flow of organic solid waste across state
- Regulations adopted in January 2019 by CalRecycle
- Must report if send biosolids off-site for any purpose
- Must register by May 31st in Recycling and Disposal Reporting System
- First report period is 3rd quarter of 2019 by November 30

Questions?

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