Land Application Regulatory Presentation and Panel Discussion

Presentation
by
Adam Wood

Land Application Regulatory Presentation - Outline

1. State Rules
2. Federal Rules
3. Expert Panel

Land Application Regulatory Presentation - State

- ✓ Chapter 62-640 Revision
  - ✓ SB-712/HB-1309
  - ✓ Cannot apply biosolids within 6 inches of seasonal high-water table.
  - ✓ Minimum unsaturated depth of 2 feet between biosolids depth and water table
  - ✓ Enroll in DACS' Best Management Practices

Land Application Regulatory Presentation - State

- ✓ Nutrient Loading
- ✓ Crop Nutrient Demand (CND)

Crop	Nitrogen lbs/acre/growing season	Phophorus (P_2O_5) lbs/acre/growing season
Improved perennial grasses – Grazed	160	40
Improved perennial grasses– Hay or silage with 4 harvests	320	80
Cool season annual grasses	160	80
Warm season annual grasses – Grazed	160	40
Warm season annual grasses with 4 harvests	320	80

TN Biosolids Load

How to calculate Biosolids Load

1. Calculate Plant Available Nitrogen (Crop Nutrient Demand)
2. Calculate Other Sources of Nitrogen
3. Total Biosolids TN is (PAN-Other Sources of TN)*1.5

✓ For example, if the crop nitrogen demand is 160 lbs PAN per acre per year and no other sources of nitrogen are applied, 240 lbs TN can be applied per acre per year by biosolids.

Total Phosphorus Application Rates:

Percent Water Extractable Phosphorus (PWEP)

Phosphorus Storage Capacity Index (CI)

- ✓The Biosolids Percent Water Extractable Phosphorus (PWEP) of biosolids is less than 14%

  Loading Range = CND to CND/PWEP

- ✓The PWEP of biosolids is 14% or greater one of the following may be used:

  Loading Range = CND to CND*1.5

Land Application Regulatory Presentation - State

- ✓ Class AA it is a product regulated as a product by DACS as a fertilizer.
- ✓ Regulations tend to not be as strict

Land Application Regulatory Presentation - State

- ✓ Class B or A
- ✓ HB 1405/SB 880 – Creates a grant program to increase the use of AA Biosolids. Effective 7/1/2023
- ✓ Grant Program includes projects that:
  - •Reduce the nutrients in biosolids,
  - •Reduce the emerging contaminants in biosolids, or
  - •Provide alternatives to land application or landfilling.

Land Application Regulatory Presentation - State

- ✓ HB 1475 - PFAS
  - ✓ Signed in 6/2022
  - ✓ Requires DEP to adopt statewide rules for PFAS by 2025 if EPA does not finalize standard first.
  - ✓ Rules must be ratified by State Congress
  - ✓ State or local government entities cannot compel site rehabilitation before rule has been ratified

Land Application Regulatory Presentation - State

- ✓ Utility is not creating PFAS or using PFAS will not become of RP.

	Biosolids	Drinking Water
Arsenic Limit	75 mg/kg	10 ug/l
FKB PFOA	0.0032 mg/kg (3,200 ppt)	0-0.005 ug/l (5ppt)
FKB PFOS	0.0067 mg/kg (6,700 ppt)	0 ug/l (0 ppt)

Land Application Regulatory Presentation - Federal

- ✓ Federal Regulations
- ✓ Regulation of Biosolids is NOT delegated to the FDEP.
- ✓ Can rules violated state commerce

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Land Application Regulatory Presentation - Federal

- ✓ Law changes Federal level
- ✓ Biennial Review process
- ✓ Annual Report
- ✓ Never been inspected

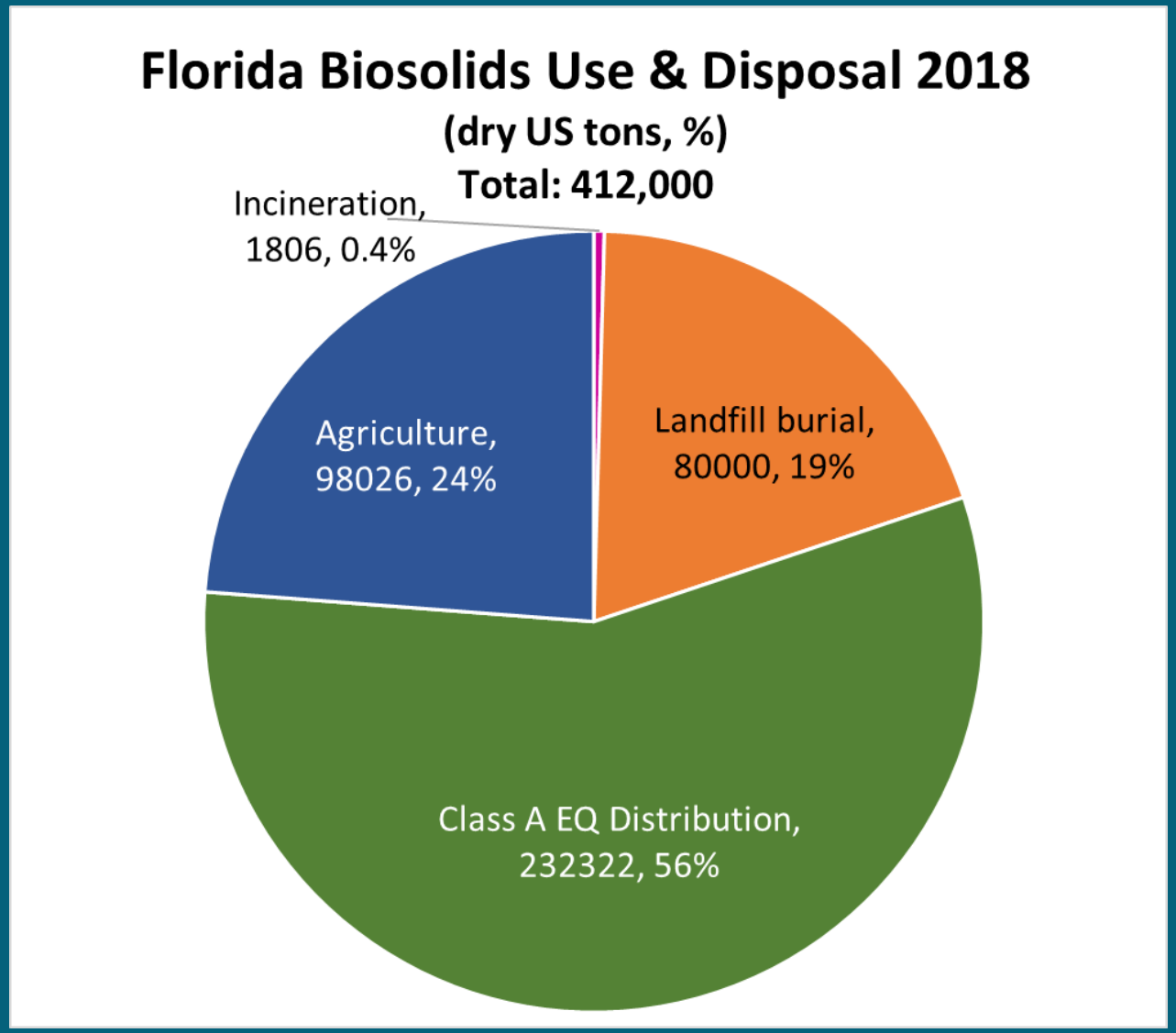
Land Application Regulatory Presentation - Federal

Pollutant Regulatory Determination and Pollutant Limits for Land Applied Sewage Sludge	Ceiling concentration (milligrams per kilogram)[1]	Cumulative pollutant loading rate (kilograms per hectare)[2]	Monthly average concentrations (milligrams per kilogram)[3]	Annual pollutant loading rate (kilograms per hectare per 365-day period)[4]
Arsenic	75	41	41	2.0
Cadmium	85	39	39	1.9
Copper	4300	1500	1500	75
Lead	840	300	300	15
Mercury	57	17	17	0.85
Molybdenum[5]	75	-	-	-
Nickel	420	420	420	21
Selenium	100	100	100	5.0
Zinc	7500	2800	2800	140
Dioxins and Dioxin-like Compounds	In 2003, EPA made a determination not to regulate dioxins and dioxin-like compounds in land applied sewage sludge. View the final action not to regulate (PDF).			

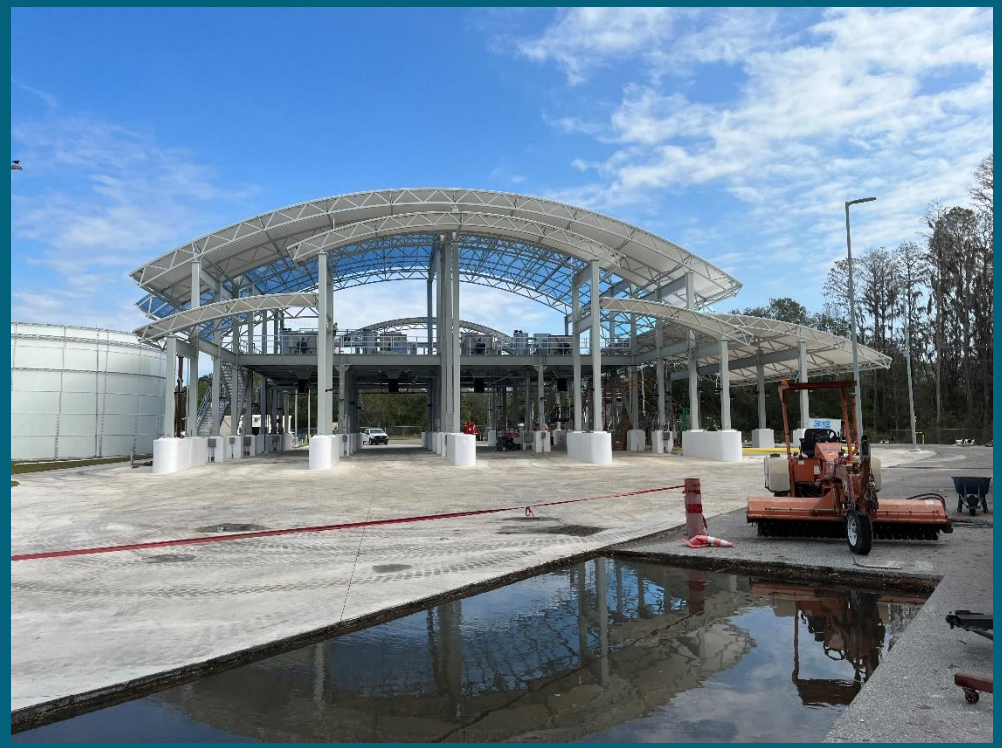
Land Application Regulatory Presentation - Federal

- ✓ PFAS
- ✓ Historically not regulated on organics
- ✓ Dioxin –Risk done under traditional methods with lots of research. Not as much research has been done on PFAS.

Biosolids Use and Disposal



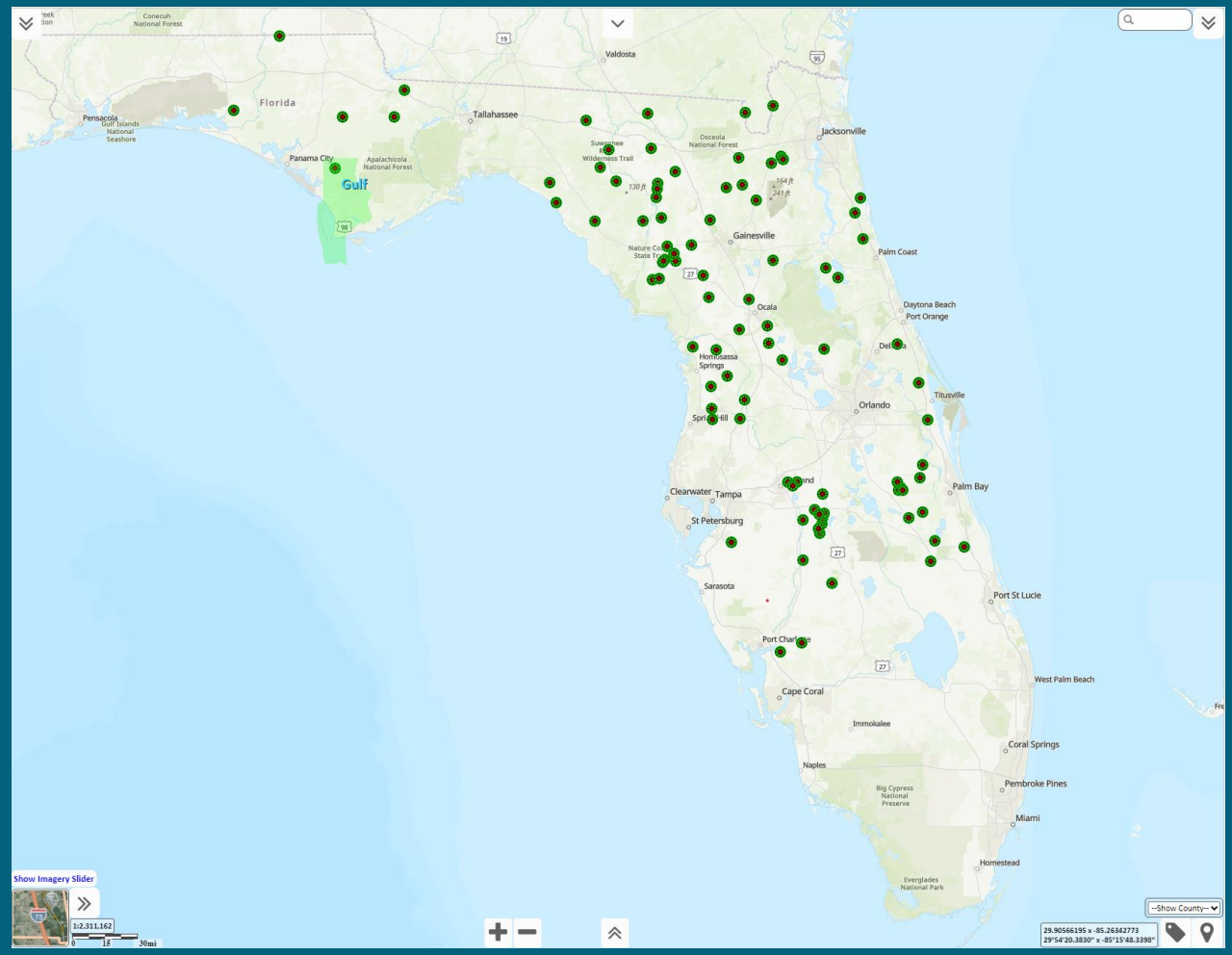
https://www.biosolidsdata.org/florida



Northwest Regional WRF's New Biosolids Dewatering Facility

Land Application Regulatory Presentation

- ✓ Went from approximately 140 permitted Land application sites in 2018 to approximately 90 land application sites in 2023



Land Application Regulatory Summary

- ✓ Biosolids A and B use continue to decrease throughout the State.
- ✓ Regulations and financial incentives are increasing the use of biosolids AA fertilizer.
- ✓ Emergent pollutants may increase regulations on biosolids,
- ✓ Unintended consequence of increased use of AA Biosolids Fertilizers may result in lower costs due to lower demand.


Thank You
EST. 1834

Biosolids Regulatory Expert Panel

- ✓ Jeff Greenwell, P.E. – Hillsborough County Public Utilities
- ✓ Ted Merrell - Merrell Brothers., Inc.
- ✓ Bob Pepperman – Synagro
- ✓ Brian Stahl – Infrastructure Solution Services