Neighbor and Public Relations: Biosolids Manager Tools & Techniques
Metrogro Program Overview

- Class B liquid biosolids injected on cropland in Dane, Rock, Columbia, Green and Jefferson Counties
- Some Class A dewatered material as well
- Annually:
  - Up to 38,000,000 gallons land applied
  - 5000+ acres
  - 50+ farm operations
Some of the public’s major concerns:

- Pollution/Contaminants
  - Bacteria
  - Nitrates
  - Metals
  - Emerging contaminants
    - PFAS

\[ \text{Mercury} (\text{Hg}) \]

\[ ^{80}\text{Hg} \]

\[ \text{Mercury} 200.592 \]
Some of the public’s major concerns:

- Trucks and equipment
  - Noise and traffic
  - Road wear and tear

- Biosolids
  - Spills
  - Odors
  - Perceived exposure risk
Outreach and Transparency

- Clear, regular, proactive communication with stakeholders (farmers, townships, law enforcement, neighbors)
- Fact sheets and brochures
- Websites

Showcase the benefits and be transparent about problems and what is being done to address them.
Tools and techniques: COMMUNICATION

PFAS in Biosolids

■ PFAS can enter groundwater from bio-applied biosolids, but there are some factors that determine how much PFAS moves from biosolids to other media, and studies have shown that it is generally less than the source material.
■ Land application of biosolids is the most cost-effective way to handle the heavy load of PFAS in the wastewater system.
■ Land application of biosolids has been documented for use in biosolids with PFAS levels below 1,000 parts per trillion (ppt).
■ As an emerging contaminant, there is still much to learn about PFAS, and PFAS levels in biosolids are regulated by state regulations.

Are PFAS in biosolids?

Wastewater treatment plants are not original sources of PFAS but instead act as a common source, as they are used by manufacturers and consumers. PFAS is added to consumer and industrial products, and a small but persistent amount of PFAS normally exists (a background level) in wastewater as well as biosolids.

Firefighting foam and industrial sources are the greatest contributors of PFAS to the wastewater. The District has removed PFAS from service area and has determined that it contains no known original industrial manufacturers or users of PFAS that would have the potential to generate high concentrations of PFAS in the wastewater. In addition, the District does not accept wastewater from areas that use PFAS-based firefighting foams.

Can the District remove PFAS from biosolids?

Often referred to as “forever chemicals,” PFAS are complex, man-made compounds that are extremely difficult to break down. There are currently no cost-effective means to remove PFAS from wastewater. The best way to eliminate PFAS from wastewater is to reduce the amount of wastewater discharged into the system. This can be achieved by reducing the use of PFAS-containing products or by implementing best management practices to prevent PFAS from entering the wastewater stream.
Tools and techniques: COMMUNICATION

https://madsewerpfasinitiative.org/

Madison Metropolitan Sewerage District
Tools and techniques: OBSERVATION

Sampling and testing

- Private well water testing program
  - Tests for nitrate, bacteria, coliforms
- Biosolids fecal coliform testing 7 times a month
  - Levels well below acceptable limits for Class B liquid
- Grab samples for nutrient and metals concentrations taken every hauling day
  - Metals levels well below EPA limits, including limits for ‘Exceptional Quality Biosolids’
- Testing for PFAS in development
Tools and techniques: OBSERVATION

Observe regulations and science

- Setbacks from wells, residences, waterbodies
- Slope, bedrock and water table considerations
Tools and techniques: METHODS

Hauling & Application

- Safe
- Effective
- Courteous
Tools and techniques: METHODS

Documentation and good recordkeeping

- Lab results
- Application rates, both target and actual
- Photos
- Field survey data
- DNR approvals
Tools and techniques: METHODS

• Reduce contaminants in waste stream
  – Outreach
  – Regulation
  – Technology

• Produce consistently high quality biosolids
Tools and techniques: INNOVATION

Research into future alternatives
- Class A liquid
- Compost
- Dry granular

Technology improvements
Problems
Stuck Equipment
Rupture
Disc Failure
Traffic
Loading site at field edge on highway
Field surrounded by houses
Not the best day
Questions?

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Madison Metropolitan Sewerage District
Thank you!