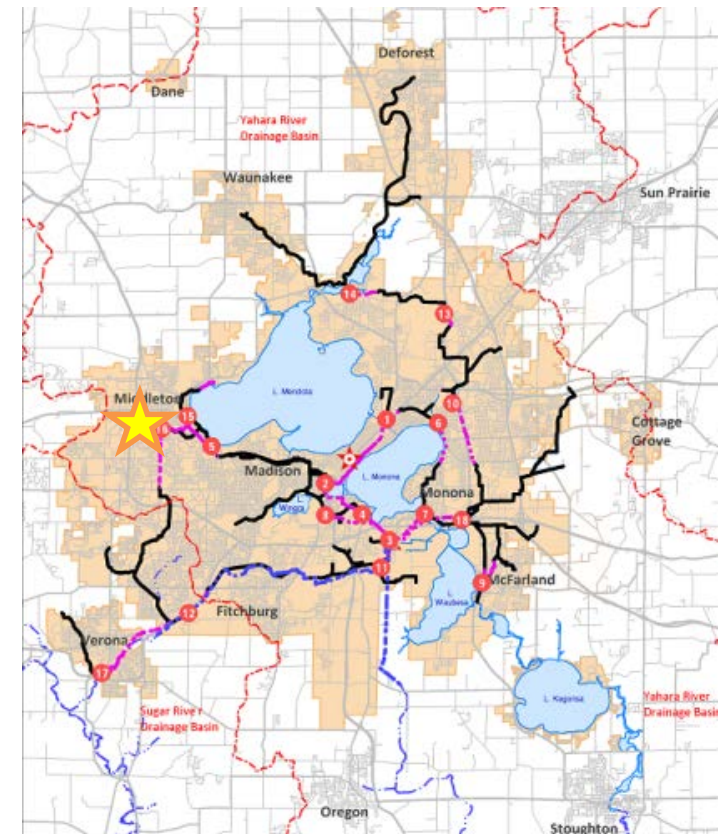


Madison Metropolitan Sewerage District Biosolids Program



MMSD Biosolids Program

- District Service Area
 - Population 378,000
- 34 – 36 million gallons of biosolids processed and stored annually



Madison Metropolitan Sewerage District



The Metrogro Program

- 3 – 6 million gallon storage tanks
- At peak of season:
 - 15 semi trailers hauling product to fields

The Metrogro Program



- Maximum haul distance is 35 miles from the treatment plant
- 14 of the 15 semi trailers are pulled by contract semi-trucks and drivers

The Metrogro Program



- All in-field applicators are operated by contract workers
- At peak of season:
 - 4 in-field applicators are operating throughout the countryside

The Metrogro Program

- Hauling seasons
 - Spring = April, May
 - Summer/Fall = end of July, August through freeze-up in November



The Metrogro Program

- MMSD Biosolids Products

Product	Metrogro liquid Class B	Metrogro cake Class A
Total Solids	5.1% TS	24% TS
Amount Distributed 2018	33.5 million gal on nearly 4,400 acres	300 cu yds
Method of Distribution	Full Service provided by MMSD	Customer pick up and application



The Metrogro Program

- Metrogro Cake
 - Class A Product
 - Currently trying out new ways to use material to make it more desirable to the end user



The Metrogro Program

- How is the land acquired for application?
 - Send out letters to past participants
 - 90% of land is acquired by farmers contacting us with an interest in the product
 - Metrogro is a clean product, little trash
 - Consistent nutrient content
 - We apply on their terms, for free
 - Other 10% is sought out through phone calls, stopping in field when harvesting, directed letters
 - Wheat fields, first fields off in fall



The Metrogro Program

- How is the land acquired for application?
 - Spring Yield Guarantee
 - Pay farmers to hold land for spring application
 - Payment is based on
 1. Acres held for application
 2. Crop the farmer plans to grow after application
 - » Use corn and soybean prices the following fall
 3. Date of application -> determines how many bushel loss we pay them for



The Metrogro Program

- How do we deal with land transfers from treatment plant to treatment plant?
 - It's based on the farmers wants and needs
 - The farmer has the ultimate say of what occurs on the land they operate, they decide who to accept product from
 - MMSD will work with other WWTP's, very willing to transfer land to others when requested by the farmer



The Metrogro Program

- How do we get application information to farmers and agronomists?
 - We provide application information in two forms:
 1. WWTP numbers
 - Can be input into SnapPlus, but on their own it's a foreign language to crop consultants
 2. Agronomic conversions
 - Can be used on the fly by an agronomist/crop consultant, it's in their 'language'
 - Need to do a better job of getting it to them in a more timely fashion, not mid to late winter



The Metrogro Program

- Current Opportunities?
 - The farm economy is in biosolids favor
- Current Challenges?
 - Distance to fields increases every year due to development
 - Increase in traffic
 - Phosphorus management



The Metrogro Program

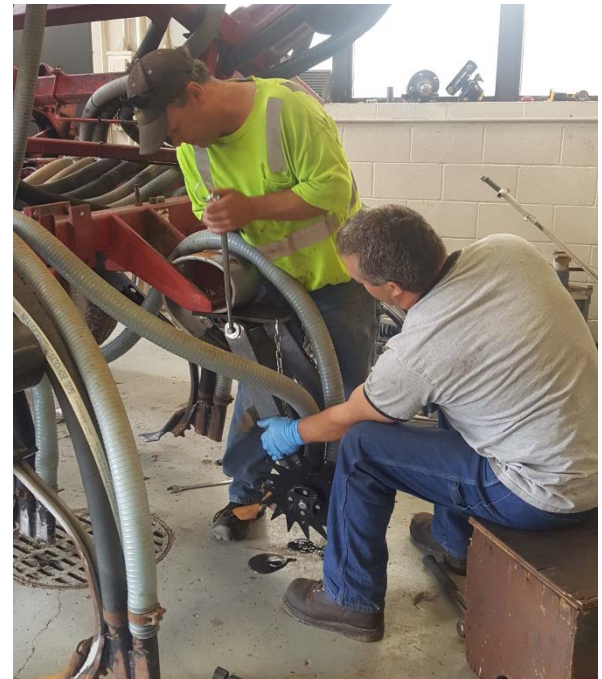
- Phosphorus Management

- Struvite Harvesting System

- From 2013 to 2018 = 25% reduction in total P in biosolids

- Land application

- The Phosphorus Index
 - Tillage options for biosolids
 - Alternative biosolids products



Madison Metropolitan Sewerage District



The Metrogro Program





Questions?

Madison Metropolitan Sewerage District

