Emerging Contaminants Grant Update

Conference on the Environment
November 19, 2014
Bruce Henningsgaard, PE
The Quick Rundown

- The Grant
- University of Minnesota project
- Request for Proposals - 3 projects
The Grant
Grant Language

$375,000 the first year and $375,000 the second year are for developing wastewater treatment system designs and practices and providing technical assistance. Of this amount, $145,000 each year is for transfer to the Board of Regents of the University of Minnesota to provide ongoing support for design teams with scientific and technical expertise pertaining to wastewater management and treatment that will include representatives from the University…
...of Minnesota, Pollution Control Agency, and municipal wastewater utilities and other wastewater engineering experts. The design teams shall promote the use of new technology, designs, and practices to address existing and emerging wastewater treatment challenges, including the treatment of wastewater for reuse and the emergence of new and other unregulated contaminants. This appropriation is available until June 30, 2016.
Grant Language Highlights

“...for developing wastewater treatment system designs and practices and providing technical assistance.”
Grant Language Highlights

- $750,000 total grant amount
  - $375,000 each year for 2 years
- $290,000 total to the U of M
  - $145,000 each year for 2 years
- Remaining $$ for “other projects” - RFP
- Ends June 30, 2016
The University of Minnesota
“...promote the use of new technology, designs, and practices to address existing and emerging wastewater treatment challenges including the treatment of wastewater for reuse and the emergence of new and other unregulated contaminants.”
The University of Minnesota

“Contaminants of New or Emerging Concern Wastewater Initiative”

Beyond just CEC’s (pharmaceuticals, personal care products)

“Think tank” of professionals with a range of perspectives

National experts, MN experts, U of M, MPCA
The University of Minnesota

- Paige Novak, Professor, U of M
- Charles Bott, Hampton Roads SD, Virginia
- Bob Zimmerman, Moorhead
- Colleen Thompson, Willmar
- Al Parrella, WLSSD
The University of Minnesota

- Glen Daigger, CH2M Hill
- J. B. Neething, HDR
- Larry Rogacki, MCES
- U of M
- MPCA
The University of Minnesota

- Develop key wastewater-related challenges & opportunities facing MN
- New technology/treatment, reuse, energy generation etc.
- Shape the process - from regulators to funding research to public education
The University of Minnesota

- Low level nutrient removal
- Contaminants of Emerging Concern (CECs)
- Technical barriers, cost issues, research needs, relevant CECs
Request for Proposals

- Issued a Request for Proposals around 1/1/2014
- In Feb 2014 opened proposals
- Emerging Contaminants Wastewater Initiative - Waste Water Treatment Plant Pilot Projects
- Emerging Contaminants, not just CEC
Request for Proposals

“...for the development of wastewater treatment system designs and practices relating to Emerging Contaminants and designed to explore minimization and treatment strategies through the use of pilot projects.”
Request for Proposals

- Mankato
- St. Cloud
- Windom
Mankato

- Jim Bruender, city of Mankato
- Stephen Duschel, Professor of Civil Engineering, MN State University
- Kris Swanson, PE, Bolton & Menk, Inc.
Mankato

- “Ultra Low Phosphorus Removal”
- To below 0.3 mg/L with a target of 0.06 mg/L
- Ferric chloride application points & dosage rates
- Ultrafilter membrane
Mankato

- Contract just signed
- Project start date November 1, 2014
St. Cloud

- Shane Lund, Water Quality Coordinator, city of St. Cloud
- Scot Schaefer, PE, Advanced Engineering & Environmental Services, Inc. (AE2S)
St. Cloud

- “WWTF Nutrient Harvesting Pilot”
- Goal of < 0.3 mg/L Phosphorus
- Phosphorus harvesting from biosolids dewatering supernatant
- Struvite harvesting for fertilizer development
St. Cloud

- Four pilot studies
- Final data analysis and reports are pending
Windom

- Mike Haugen, Water & Wastewater Superintendent, city of Windom
- Kelly Yahnke, Bolton & Menk, Inc.
Windom

- “Denitrification Evaluation”
- Total nitrogen limit of 5 mg/L or less
- Nitrate reduction with carbon addition
- Denitrification filter with carbon addition (converting traveling bridge filter)
Windom

- Pilot to start up in December
- Start monitoring in January
Quick Recap

- $750,000 grant over two years
- Ends June 30, 2016
- U of M, Mankato, St. Cloud and Windom are working on projects
- Transferability to other parameters and/or other facilities
Contaminants are showing up in our surface water. We want to be ahead of the curve in dealing with them.

When (if) we issue limits, we want options and solutions.

Hopefully, at future conferences, presentations on the outcomes.
Questions???

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