

Nutrient Monitoring Council (NMC) 5th Meeting

Minutes: July 28, 2016

Edward R. Madigan Lab, 350C ERML, 1201 W. Gregory Drive, Urbana

Conclusions

Super Gages – Kelly Warner and Isaac Seo

1. Another Superstation at Lemont or Joliet would be beneficial. The exact location will be determined.

Statewide Nutrient Trend Analysis Update thru 2015 and Journal of Environmental Quality Paper – Greg McIsaac, U of I – NRES

2. Between 2011 and 2015 in 8 rivers, P has a mixed trend and N has a slight decline. The Illinois section of the Rock River was an outlier for N. P load could be erosion or could be how P is incorporated into ag land.

Great Lakes to Gulf Virtual Observatory Demonstration Using Illinois River at Florence Data – Jong Lee (U of I - NCSA)

3. NMC likes the simplicity of up/down arrows to show change from baseline.
4. NMC is interested in seeing IEPA data from “most monitored” priority watersheds.

Top Monitoring Biological Data Parameters and Associated Information – Holtrop, Vick, Casper, NSAC Member

5. It could be beneficial to communicate with NSAC regarding biological data parameters.

Next steps:

Super Gages – Kelly Warner and Isaac Seo

1. Kelly Warner, Gary Johnson, Justin Vick and Jen Wasik will confer to bring forward a recommendation to NMC’s Sept 13 meeting.
2. Kelly Warner will send out a copy of the webpage for the NMC to provide feedback.

Statewide Nutrient Trend Analysis Update thru 2015 and Journal of Environmental Paper – Greg McIsaac, U of I – NRES

3. The author(s) will present a summary of the paper to the Policy Working Group on Aug 30.

Great Lakes to Gulf Virtual Observatory Demonstration Using Illinois River at Florence Data – Jong Lee (U of I - NCSA)

4. Jong Lee will continue gathering needs on trending.
5. Jong Lee will load all Fox River data into GLTG and will present a demonstration at a future Policy Working Group meeting.
6. Gregg Good’s STORET staff members will work with Jong to begin imputing data into GLTG.

Monitoring Plan

7. NMC will prioritize a list of basins and a framework of needs. Could start with an update and downstate location. Upstate could be Fox R. or Calumet R. Downstate could be Kaskaskia or L. Springfield.

8. Next meeting NMC will continue working on developing a monitoring plan.

Attendees:

Gregg Good, IEPA; Kelly Warner, USGS; Paul Davidson, Univ of IL; Ann Holtrop, IDNR; Jong Lee, NCSA; Rick Cobb, IEPA; Laura Gentry, Univ of IL; Laura Keefer, ISWS; Andrew Casper, INHS; Justin Vick, MWRDGC; Kevin Culver, Aqua Illinois; Brian Miller, IWRC; Eliana Brown, IWRC; Adrienne Gulley, IISG; Ashley Rice, IWRC
On phone: Charles Theiling, COE-Rock Island; Greg McIssac, Univ of IL

Summary of informational presentations (not mentioned in conclusions and next steps):

Groundwater Interplay with the NLRS, Section 106 Monitoring Grant – Rick Cobb, IEPA

Monitoring shows that 10.5% of rural water supplies have nitrate >10 ppm. Under the Generic Management Pesticide Plan, the Illinois Department of Agriculture collected NO₃ in wells biannually over 14 years. The Havana Lowlands area is a “sandbox” where farmers use fertigation. Starting in 2014, the Illinois EPA started sampling under CWS Nitrate Monitoring Network. They also sampled for chlorides and bromides to help determine nitrate source. The results show a max of 19 mg/L and min of 0.16 mg/L. They looked at nitrate and well depth and found a trend of decreasing nitrate with depth. But they aren’t seeing nondetect at depths greater than 30 feet (which would be expected due to the denitrification). Henry’s Well had an increasing trend and they suspect that fertigation is practiced there. They decided that the hot spot well needed additional monitoring, so they sent a proposal into EPA. They are installing 4” monitoring wells in between 2 pivot irrigation systems. They will collect data for one year and look at cultural practices and discrete water sampling to see if there is any causal relationship.

MWRD Nutrient Recovery Facility – Justin Vick, MWRDGC

The wastewater treatment industry has shifted the paradigm of water reclamation to resource recovery. MWRD’s Stickney plant is the largest in the world with a design capacity of 1.4 Billion gallons a day and an average flow of 676 MGD. Naturally occurring polyphosphate accumulating organisms (PAOs) remove 70% of P. PAOs facilitate Enhanced Biological Phosphorus Removal (EBPR), which is essentially tweaking plant conditions to maximize P uptake. In 2015, the average P removal was 93% at Stickney. The system is still being optimized. In May 2015, the Ostara process went online. It is the controlled production of struvite, which can be used as a slow release fertilizer. This is an opportunity for a more environmentally friendly P lifecycle. Looking forward, the Stickney plant expects to complete construction of Waste Activated Sludge Stripping (WASSTRIP) process by December 2017. This process pulls phosphorus early

in the secondary stream and sends it directly to the Ostara reactor, thus further increasing P removal. Stickney will be used as a model for other MWRD plants. Currently, preliminary EBPR testing is under way at Calumet, O'Brien, Egan and Hanover Park.