

# Nutrient Monitoring Council Summary Meeting Notes

## Meeting #1

May 13, 2015

### Summary

Gregg Good and Mark David are co-chairs. The members are measuring the same nutrient parameters. It is in purview of the group to monitor annual point source contributions. USGS Superstations will monitor what is leaving the state. For local water quality, this group will generate maps to better inform discussion. This group will not identify low P streams.

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### Organizational Matters

#### Attendance

Gregg Good, Illinois EPA  
Mark David, University of Illinois at Urbana Champaign  
Doug Yeskis, USGS  
Laura Gentry, IL Corn Growers/Univ. of IL  
Laura Keefer, ISWS  
Michael Brennan, GLTG  
Rick Cobb, Illinois EPA  
Ann Holtrop, IDNR  
Marcia Willhite, Illinois EPA  
Cindy Skrukud, Sierra Club  
Marvin Hubbell, USACE-Rock Island

**Co-chairs:** Gregg Good will be one. Mark David -- volunteered

Duties – steer us through. Agendas, activities between meetings.

### Council Charge:

1. To develop a nutrient monitoring program (e.g., program design, data collection and methods, data analysis and assessment, QA, reporting, evaluation) that, if implemented:
  - a. Collects the necessary information to generate estimations of 5-yr running avg. loads of Nitrate-Nitrogen and Total Phosphorus leaving the state of IL and high priority selected 8-digit HUC basins; and
  - b. Identifies trends in loading over time as compared to 1997-2011 baseline conditions.
2. To develop a prioritized list of nutrient monitoring program activities and associated funding needed to accomplish the charges/goals listed in a. and b.
3. Should we calculate statewide/8-digit HUC loads of other nutrients:

GG: in groundwater, been doing chloride/bromide.

RC: Been testing all forms of groundwater.

MD: Doesn't think it tells info.

MH: Will be separating out PS/NPS?

RC: Can  
MD: Haven't seen this in surface water sampling.  
MH: cost?

### **What form of nutrients are we measuring?**

(All agreed that they are monitoring the same parameters.)

Total P

SRP or DRP (both are phosphate)

TKN (TKN + NO<sub>3</sub> = TN) (TKN – NH<sub>3</sub> = organic particulate)

NO<sub>3</sub>, NO<sub>2</sub>: Sometimes will separate out NO<sub>3</sub> (LK).

DO

chloride, bromide,

silica as indicator of what might grow (diatom growth)

### **What are we not monitoring?**

Sediment

LK: What SCALE are we working at? Watershed scale (MW)

MW: local is HUC 8-12 level. Want to look at changes in loading. What are changes in local water quality because that is what people care about. (drinking water, aquatic community health)

LK: Will see changes in HUC-12 but not always HUC-8.

DY: And how will be interact with other committees?

Brian: touched on Adaptive Management and SAC interaction

MD: What is point source contribution on a yearly basis?

MW: That's both implementation measure across board as we get permit limits. %age of point sources that are going lower feeds into that calculation.

MD: Seems like we sd be able to parse this out by watershed and year.

MW: Majors have N and P limits.

MD: Going forward, we'd want per year.

MW: if have limits, we have data. If only have monitoring, harder to retrieve.

MD: wouldn't corraling that data fall under this group?

CS: would it take permit limit change to get annual no?

MW: DMR's are electronic.

**Marcia – THIS IS WITHIN THE PURVIEW OF THIS GROUP TO MONITOR ANNUAL POINT SOURCE CONTRIBUTION ACROSS STATE. We need to measure indicators of progress.**

Brian: at some point we have to figure out how to collate all the data.

RC: Drinking water: MCL, Springfield has put in more buffer strips to reduce pesticides.

MW: need to captures measures of PS that are indicators of progress

RC: you won't know if BMP is working; idea is multiple barrier approach.

Thus, an indicator of progress is DRINKING WATER treatment needs.

MH: Sd this group identify land use issues. Network scope? Land use variables.

MW: some of this is captured in Science Assessment at large scale. Not sure that this is within scope.

RC: DW and GW trends in same locations.

CS: Gathering data in drinking water (T/O from algae sources)

RC: and now have HAB (harmful algal bloom)

Biological stuff:

Brian: Ohio Trophic Index

MW: combo of data result and trophic

GG: have trophic index for LAKES (not flowing waters)

Fish index of IBI and bug index of IBI only for Wadable waters (approx. 10 – 100 ft wetted width)

Every 5 years national assessment of streams, rivers, wetlands.

MW: challenge is that the indices are different

CS: I think we need to talk about response variables. Algae levels.

Brian: Every lake is different. The chemistry may not reflect this but the biology does.

MH: if we are looking at 5 year avg., epa has long standing network of data, not reflected in map. We sd talk about existing network. What enhancements can be made?

GG: We need a plan of what we are going to do. How much small scale monitoring to do? And how much biological monitoring to do? We have to have a definitive goal.

MW: Charge is to understand what has been the IMPACT. How are detecting changes in loading in water quality? That we can report on. Knowing conditions of water will help target changes. This is more about OUTCOME.

MW: this is the least policy oriented group. This is what's going to be supporting data to measure progress.

RC: we have GW mon. but does it adequately rep loads? BMP for surface water <-does this conflict with GW? This needs to be figured out.

DY: this wd help us pick our dots.

Brian: let's hold off on the vote.

DY: the other groups may have the questions for us.

MW: let's take SAC off charge as they are charged with determining state standards. They will not rely on this group to make their decisions.

MH: You need to have a long period of record to show changes. What has been done for years should be basis.

RC: there has been some changes in the kind of monitoring but it hasn't been put together and looked at.

MH: Analysis of existing data could be priority.

Brian: Long term data good basis. Question is: what do we need 10 years from now that we had better start collecting now?

MH's List of all WQ parameters collected (COE):

Total N,

NOx,

NHx,

Total P,

Soluble Reactive Phosphorus (SRP)

SO4 (possibly discontinued)

SiO2

Chlorophyll a

Phytoplankton

TSS/VSS

Secchi,

Temp

DO

pH

conductivity

velocity

#### **After lunch:**

How to prioritize monitoring locations?

Where do you start?

MD: sd we talk about what we've started?

MW: IEPA and USEPA in agreement to do superstation monitoring.

DY: 5 year. 75% of land. Many of the USGS superstations are installed and running. Others (~4) in June.

Rest in July. Will have to develop regression equations.

MD: Have data and loads for these rivers going back to 1980s. We are beyond what other states have. **At bigger scale we'll have really good data.**

DY: stations to be established for inputs into state. One already done. (Continuous NO3)

MW: priority watershed graph from Mark doesn't really capture watershed groups. Some have some data collection. We should capture those sources. Public water supplies do raw water sampling too.

Keep it for the Crop priorities are water supplies so they have data.

MH: map question: HUC-8 or HUC-11 (are there multiple scales)?

LK: priority watershed HUC-8 but many delineated by activity/program definition.

LK: L. Decatur watershed .... Below city's effluent. Listed as PS. But sd be NPS too? Upstream of L. Dec is NPS.

Brian: Is there a system in place to capture what water supplies doing?

MW: IEPA captures raw water sampling.

RC: not doing raw. Doing ambient sampling.

MW: strike the above.

MW: watershed groups are gathering data. Cd be a source of info.

Brian: Anywhere that sd be on Wish List?

LK: Load coming out of IL: COVERED. But groundwater may still need attention.

RC: Green R. Miss R IL R looking at conc >3 mg/L community wells.

AH: One of the programs that IDNR has is a state wildlife action plan. Streams campaign. Conservation opp areas where can implement. Several of these priority watershed are conservation opp areas. While groups won't necessarily be monitoring now, but could integrate. Could bring into conservation plans and gives connection to other groups. Cons opp areas id'd. Several of the watersheds are Cons Opportunity areas. Cd leverage local resources rock, vermil, Little Wabash. Cd bring into Wildlife Action Plan (they are revising it now).

MH: in DY's doc, is there another increment of data? Cd that be a stating pt.

DY: It's a base map.

MH: if we have longer period of record, cd help id watersheds that are changing.

MD: in strategy used base time period. Superstations only have to do with major river systems **leaving** the state. (8 of them)

CS: is there a way for us to look at P loading in NE IL without superstations? Cd back calculate from WWTP DMR data.

DY: function of resources avail. Thomas Granato has info about monitoring station in that area.

GG: Are these ALL priority watershed and we need to do all of them OR do we prioritize them.

LK: Spoon R and lower Sangamon R. have 15 years of mon data that are not on this map. It is nice data.

MH: Recommendation for where to start. We have superstations for what's leaving IL.

And if we want to expand to local, we pick out a number to characterize and represent. One in urban, Ozark, central?

Brian: state loading is covered. Local water quality options:

1. Look at existing
2. Look at representative
3. Look at WQ problem areas.

MW: Fox R. has local WQ issues. All KIC ones do too. We have them captured. It's a matter of density. Before we can make a choice, need fuller picture of present monitoring. Cd be difficult to make decision today.

Brian: Cd circulate map that we could use for next mtg.

GG: Where will BMP implementation be focused?

MD: On NPS side, can we show change?

MW: On map, we will be focusing attn.

Homework:

Brian: 2 maps:

1. monitoring maps 2. implementation maps

Overlay

DY: another implementation map:

Where done the work

Where planning the activities

MD: there hasn't

Will have map discussion afterwards to determine how to develop the maps.

GG: Up and running in 1.5 years

CS: What about WQ degraded by nutrient stream map?

MD: already in NLRS

Brian: we could use that as Base Map.

#### **Parking lot issue:**

**MW: We need to decide our base year for implementation is [this is Policy Work Group issue]**

MH: would be helping to describe Background conditions. Land use within IL. Price of corn, anhydrous ammonia. This helps with reporting. [parking lot]

MD: We have a lot of that info. Implementation is harder to capture.

MW: It's a policy decision.

MH: Is it possible to use IDA.

MW: No numbers on cover crops

LK: CRP is proprietary info.

#### **Brian: Do we ID low P streams?**

GG: We've worked with AH....Is that a charge for this council?

AH: Where would it fit?

GG: it would be in addition.

MW: nope

AH: argument has been made that has to have natural landscape to have low P. e.g. Shawnee. But at small scale can have this too. Would be tough to see change. Land use hard to change overtime without large effort.

**Verdict: NO**

#### **Brian: Ag WQ Partnership Forum coordination?**

Discussion of who has data. Different agencies have it for what they have funded.

AH: might be worth state funded CREP.

DY: Let's meet with them at some point.

#### **Next steps**

EB will send homework assignments.

Next meeting: end of August/early Sept

August 17 and mid September

Anyone that we didn't invite?

Nothing obvious.

**Back to sediment:**

LK: we do it

MD: we don't

LK: suspended sediment

DY: TSS to correlate?

LK: has bearing for P. We have monitoring network for 25 years. Things are steady or falling. Stations all over state (in HUC-8). Located at USGS stations.

DY: at local scale?

LK: Will add in sediment info to map. 14 stations right now. Weekly, single vertical samples. Back to 1981.

DY: does COE have any sediment stations?

MH: I'll find out.

**"What should we be monitoring?" Parking lot**

MB will think on how to do GIS for monitoring stations and parameters.