

## DRAFT NOTES

Nutrient Policy Working Group: Monitoring and Public Reporting

1:30 pm, 16 April 2014

Building W Conference Room

Urbana-Champaign Sanitary District

1100 East University Avenue

Urbana, IL 61802

### **SUMMARY:**

- I. The numeric nutrient criteria working group met over lunch. They will submit written comments in the next week regarding what they believe should be included in the strategy. They will be accepting comments from the sector they represent.
- II. Monitoring:
  - a. Presentations—please see PowerPoint for details
    - i. Gregg Good, Illinois Environmental Protection Agency
    - ii. Jim Slowikowski, Illinois State Water Survey
    - iii. Doug Yeskis, Illinois Water Science Center, U.S. Geological Survey
  - b. Discussion:
    - i. To improve monitoring in Illinois, we need to identify what needs to be monitored and why. Can ask goal of monitoring:
      1. Load of nutrients leaving the state
      2. Effectiveness of BMPs
      3. Determining BMP implementation success will require a different scale of monitoring than determining the nutrient load leaving the state
    - ii. A few permanent stations on large rivers would provide good coverage for state nutrient exports
    - iii. Sharing data among organizations would be the most effective way to improve monitoring program efficiencies
- III. Reporting:
  - a. Presentations—please see PowerPoint for details
    - i. State programs:
      1. Trevor Sample, Illinois Environmental Protection Agency
      2. Alan Gulso, Illinois Department of Agriculture
      3. James Herket, Illinois Department of Natural Resources
    - ii. Partners
      1. Kerry Goodrich, Natural Resources Conservation Service (PowerPoint not available)
        - a. Strict confidentiality rules governing NRCS limit how data may be reported and shared
      - b. NRCS operates four reporting programs:
        - i. Customer Service Toolkit
        - ii. Protracts
        - iii. Performance Results System
        - iv. Idea System

- c. NRCS can share data on a county-level basis that does not violate confidentiality agreements
  - 2. Jean Payne, Illinois Fertilizer and Chemical Association/Illinois Nutrient Research and Education Council
- b. Discussion:
- i. Due to time constraints, input from official Policy Working Group members was solicited by survey
    - 1. The survey found that:
      - a. Nutrient reduction and successes should be reported through a means besides water quality information in the Illinois Integrated Report
      - b. A water monitoring council that coordinates the entities collecting water quality data from around the state would be a useful strategy
      - c. IEPA should be the lead agency on the water monitoring council, but multiple state, federal, and research-focused organizations should participate.
- IV. Timeline and final meeting
- a. The rough draft of the Nutrient Reduction Strategy should be available to Working Group members by May 7
  - b. The rough draft review meeting will take place May 19 from 10am to 3pm at the IEPA offices in Springfield
  - c. Written comments regarding the rough draft must be submitted by May 30

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## COMPLETE NOTES:

- I. Introduction/welcome
  - a. Numeric nutrient criteria updates
    - i. This conversation for last ten years
    - ii. What should we say in the NRS?
    - iii. Other states have touched on lightly in their strategy
    - iv. Developing a plan for criteria in Illinois
    - v. Small group meeting over lunch
    - vi. Overview of IEPA's past efforts over 13 years
    - vii. Data hasn't yielded a strong basis for nutrient criteria
    - viii. Can share ideas with stakeholder numbers
    - ix. Options:
      - 1. Pick a number, similar to those in other states
      - 2. Convene a science panel/advisory panel to look at data, including studies from past groups
      - 3. Shift focus from statewide nutrient criteria number to either a water body type or watershed basis
    - x. Assignment to subcommittee members: write up what they would like to see in document

- xii. Will choose a method to share information with policy group

## II. Monitoring in Illinois

### a. USGS

- i. Like ISWS have a number of projects that have short duration and aren't statewide
- ii. Also national programs, like NAWQA
- iii. Online databases available to the public
- iv. Future projects to look at groundwater, stream restoration changes, and a partnership with NRCS
- v. MSQA—Midwest water quality—a regional sampling pattern
- vi. Florence Site—collecting continuous real time data
  - 1. Parameters are Nitrate + Nitrite, P, and turbidity
  - 2. Real concern: loads
    - a. Discharge
      - i. River stage
    - b. Nitrate
    - c. Turbidity—suspended sediment concentration
    - d. Phosphorous
    - e. Explained in USGS publications
- vii. Developing real time nitrate sensor network in Illinois
- viii. One groundwater nitrate monitoring well

### b. Questions:

- i. Is anyone monitoring groundwater nitrates in the state?
  - 1. IEPA does some nitrate groundwater monitoring and can make a data request from state
  - 2. USGS also does a limited amount of this
- ii. Any monitoring of DO?
  - 1. National Great Lakes doing some
  - 2. NGRREC doing some on Mississippi River

### c. ISWS

- i. Going to take some persistence by people involved to know if reduction strategy working, but these results are not going to happen quickly
  - 1. Few year stretch isn't going to capture entire picture
- ii. ISWS doesn't operate a monitoring network—project-driven data, and are tailored to a project need
  - 1. Valuable, but variable data sets
- iii. Sediment quality and chemistry is an important drivers of water quality, and we often don't take this into account
- iv. Lake sediments
  - 1. Unexpected results
- v. Sediments play a role in nutrients?
  - 1. Fox River—point source, low head dams,
  - 2. Yes, sediments show milligrams/L of P
- vi. Data integration:

1. Lots of data
  2. Relational database
  3. Make sure data is accessible
  4. More than one entity involved in data sharing, and those state agencies, partners, etc. can get together and cooperate and get data in usable form is one of the cheapest and easiest ways to improve program efficiency
- vii. How to get continuous DO data
  1. Contact Matt Short (?)
  2. Is IEPA's data—contact them
- viii. Question: where bloom happened by comparing data points. Looks like helpful to have these data points. Looking at P data is the same before and after. When collecting the nutrient data, collecting TP and available P?
  1. Yes, typically. IEPA showed analytes
  2. But point is, need to anticipate what trying to monitor for and the natural processes that can impact that
  3. Monitoring
- ix. Anoxic conditions in sediment layer. Looked at any low P creeks to see those conditions, too?
  1. Yes, organic decomposition can drive that
  2. But, no, haven't gone and looked at those low P streams
  3. Can go do that, however, but doesn't matter where the OM comes from
- d. IEPA
  - i. New monitoring document done Oct 1, 2014
  - ii. New macro monitoring for lakes—developing lake index
    1. Citizen lake monitoring
    2. Trained and quality trained 2x per year
  - iii. Lake standard and monitoring?
    1. 1979
    2. Much limnology done in northern tier states in glacial lakes
  - iv. How much money available/budgetary constraints?
    1. Annual access to USEPA monitoring grant
    2. Supervisors may be able to answer better
    3. Baseline programs and people are from 106 program grant
    4. Prefer to approach: what would be appropriate and needed, and then look for resources. What is the monitoring design we need, and then find a path forward on that
- e. Discussion: Monitoring gaps in Illinois
  - i. Within NRS, monitoring progress. Set goals for what reducing, looking at adaptive management, so need to know if practices are working?
  - ii. Are there gaps?
    1. IEPA is doing some event response monitoring. Assuming calls from public. Do you feel that people know who to call and are looking for HABs? Or are there ways we can make this easier

and capturing these? Or are there things slipping through cracks

- a. Announced on website got 10 calls the first day.  
Definitely an education issue—some were HABs. A lot of people doing monitoring, so do people know who to call? Well, need to get the word out with DNR and public health. Been a resource drain to take a sample if needed, and must follow up if find microcystin. Does seem to be general knowledge that people do know to call IEPA.
- b. Also, IEPA, DNR, and Public Health are working on creating a HAB program for the state. Eventually, will need to rely more on the organizations that do lake management to get the word out and do the training
- iii. May need to back up one step from what discussing. Need to identify what trying to accomplish. Example, is the question what is leaving the state or the effectiveness of BMPs in a small watersheds? The same monitoring program won't do both. And what levels of uncertainty and error looking for. Might get an idea, but will have big error bars.
  - 1. Need to establish what monitoring and why we need those data
- iv. How can we address these gaps in funding situations? What else is needed?
- v. How to move toward linking these monitoring situations—data sharing?
- vi. On the nitrogen side of thing, prioritization of watersheds might lead to resources in those areas. Perhaps target monitoring for those priority watersheds. Would provide both the baseline and the data to find out BMP success.
  - 1. Finer scale solution at watershed level
- vii. Looking at satellite images for these assessments?
  - 1. Did some work with U of Minnesota with those data, could look at chemistry in water and transfer to images, so might work for lakes. Dabbled with it, but haven't taken much further. Couldn't take a picture from a satellite and look at nutrients.
- viii. Question for Mark David: when your team did the Science Assessment, what lack of data that was the most difficult?
  - 1. Big rivers, especially loads leaving state are not well monitored—limitation in calculating what is leaving the state
  - 2. Used the ambient samples. Works well over a long period of time, but not for year to year, because it's only 9 samples a year.
  - 3. Illinois River is really the only one that has continuous monitoring
- ix. What would be good continuous monitoring sites, and what is the next level?

1. If we can figure out how to do the Florence site (USGS-IEPA partnership). Phosphate probes are about \$16,000 each, plus maintenance. Idea is that look at other places that are major export sites. 6 station network that would cover most of the state (77%). Not cheap. Equipment is expensive, so is maintaining, operating, and turning data into a report, but would tell us what leaving IL. There may be some USGS efforts at national level.
  - x. Data sharing: something to pursue? Something already existing in state and just need to fill in some holes?
    1. Some states have state level monitoring councils—IEPA suggested at an Illinois Water Conference. Get all the monitoring people together in one spot and plan to do complementary data collection. That idea is still out here, but would need someone to coordinate that.
      - a. Would probably take a person dedicated to this idea?
        - i. Yes, lots of interest, but no one had the time or resources to do this
    2. Any coordination between public concern and private concerns? And recognition of those data?
      - a. NWatch program—data are shared with U of I, but goal is to share these data over time with land grant. Always a little difficult to take only one year's worth of data
    3. Roll up source control information. Things like, how many miles of riverfront have BMPs? Any kind of source control?
      - a. We'll discuss this later in the Reporting presentations
- III. Stoner Memo 7: Public reporting of implementation activities and biannual reporting of load reductions
  - a. Current reporting
    - i. State programs:
      1. IEPA—Trevor Sample
        - a. Know BMPs are being put into place, but don't know how many could put in place. Don't know what could gain.
          - i. In watershed based plans there are load reduction targets and BMP recommendations, and that becomes recommendations for BMP implementation
          - ii. As much data as RMMS as possible so can look at BMP plans and make sure it's not causing negative impacts or may have synergistic effects
      2. Department of Agriculture Transect Surveys—Alan Gulso
        - a. Information on soil erodibility, rain fall intensity, etc. taken in 1994, so now only update cover crop and crop residue

- b. Transect data used for a lot of phosphorus data—was really valuable for Science Assessment
  - 3. DNR—James Herket
- ii. Other partners
  - 1. NRCS—Kerry Goodrich
    - a. Strict confidentiality rules for NRCS
    - b. Customer Service Toolkit
      - i. Georeferenced data
      - ii. ArcGIS map
        - 1. Depending on point, line, or polygon
    - c. Protracts
      - i. Contracting tool used for financial assistance
      - ii. Link practices in CST and Protracts so automatically updated
        - 1. Drawback is that information is on county basis, not watershed basis
    - d. Can pull data from both systems
      - i. CST is not helpful—databases need GIS specialists to build reporting data, but could potentially build reports on watershed basis
      - ii. Protacts—can pull contract data but not anything else. If working with landowners who is not receiving financial assistance, projects won't show up
    - e. Performance Results Systems
      - i. Captures data from CST, slated for updating and replacement
      - ii. Summary reports, but only one year at a time—would have to individually aggregate
    - f. Idea System
      - i. Draws from all systems
      - ii. Data pulled is suspect, but have been adding some updates
      - iii. Would be used by manager to draw summary information
      - iv. On county level rather than watershed
    - g. NRI—natural resource inventories surveys
  - 2. KIC—Jean Payne
    - a. All farmers buy fertilizer, so large data set
    - b. Some of the data in the presentation is made up to illustrate a concept and avoid sharing private information
    - c. Gather information from agriculture retailers

- i. 95% use same software program for business, so new software developed for reporting for rates, times, etc.

- iii. Discussion: How can these reporting elements be combined to assess progress on nutrient reduction in Illinois?

Examples:

- 1. Wisconsin intends to hold an annual nutrient summit or forum to discuss progress and evolving needs.
- 2. Minnesota will release annual report cards evaluating BMP implementation targets, nutrient reduction goals, and adjustments needed to reach goals and milestones.
- 3. Ohio plans to report on nutrient loading in targeted/priority watersheds through its biennial Integrated Report.

IV. Final details

- a. Timeline update
- b. Final meeting announcement

## **Reporting and Monitoring Survey Responses:**

**Question 1:** Illinois EPA already produces an integrated report with information on 303(d) and 305(b) assessments. Several other states are adding nutrient reduction information to these reports to meet Stoner Memo recommendations. Should we include a nutrient section in this report as part of our strategy to meet USEPA requirements?

- Yes: 3
- No: 5
- Skipped: 1

Comments:

- There is a need for documentation about nutrient reductions, whether that idea is in the Stoner memo or not. However, linking two reports is not recommended for two reasons. First, it complicates both reports, two sets of people needing to fit into one-another's schedule etc. Second, especially in Illinois, nutrients are not a driving force behind most areas of non-attainment, whereas linking the two reports implies there is that linkage.
- Not sure the 303(d) list is the best approach, the strategy document should look at newer, targeted approaches that utilize most recent water quality data and not be confused with data used to determine TMDLs.
- I believe any of the options below would be a better reporting option.
- I believe the additional reporting avenues covered in question 2 would better reach the public.
- The integrated report is produced every other year, and the stoner memo calls for an annual report. The nutrient report would perhaps get lost within the integrated report, which is large and not the most public-friendly. I suggest the nutrient report be a separate report posted on IEPA's nutrient reduction strategy webpage.

**Question 2:** Some other states have identified additional reporting avenues to reach the public at large. Please select the options you believe would be useful in Illinois.

- A water quality council who authors an annual report about nutrient reduction (Iowa). This would require creating a water quality council/steering committee: 1
- Report cards measuring the success of meeting reduction milestones and goals, published in an annual report (Minnesota): 5
- An annual nutrient summit/forum to share ideas, successes, and challenges (Wisconsin): 3
- Skipped: 2

Comments:

- Have a form with milestones and goals that you send out to watersheds, groups to collect info for the report card.
- Either the report card or the summit/forum.
- Set up a reporting committee, consisting of one representative from each sector (e.g., agriculture, point source, environmental) plus one representative from each agency that would likely be annually contributing data to the report. Have them meet a few times and agree on the report format, content, headings, data needs, etc. Once this template is created, one person from IDOA and one from IEPA could be the annual report writers, responsible for gathering the information to fill in the report. Barring adaptive tweaks, the report skeleton would look the same every year. I don't know that the steering committee needs to meet again once the skeleton is approved. I think it would be good to have an annual meeting where the report is summarized and there are some talks on successes/challenges, as well as public input on what to try next.

**Question 3:** We heard about data collection from many organizations during the April 16 meeting. We briefly discussed the need to put existing data together, design new monitoring activities that address unanswered questions, and more intensively collect data in targeted watersheds. Do you believe that creating a “water monitoring and reporting council” (similar to the Iowa model) composed of technical representatives from agencies and organizations collecting data needed to implement the NRS would be a useful body to coordinate monitoring and create a state report?

- Yes: 7
- No: 1
- Skipped: 1

Comments:

- I expect that creating the council and then authoring the product will be more work than just tasking those same individuals with writing a draft document released by IEPA or IDNR and then letting the public comment to suggest improvements.

**Question 4:** If you answered "yes" to the above question, which agency (or agencies) should be responsible for convening and staffing the water monitoring and reporting council, and who should be key members of such a body?

Comments:

- EPA-lead. Members-IDNR, ISWS, USGS, DOA, IAWA, watershed groups, env. groups, NREC, National Great Rivers Research and Education Center, NRCS, SWCD
- IEPA, IDA, DNR, CBMP, Wastewater Association, State Water Survey
- IEPA convenes, current stakeholders represent key members
- IEPA, IDOA, ISWS, USGS, NRCS, CBMP and Illinois Ag organizations
- IEPA, IDA, USGS, NRCS, ISWS, C-BMP & IL Ag Organizations
- If we are just talking about water monitoring, I think it would be helpful for the agencies that do monitoring related to the strategy to meet at least once annually to discuss. So, that would be at least: IEPA, IDNR, ISWS, USGS. You might also include some professors that do extensive monitoring.
- IEPA should be responsible to convene and staff the council. The members of the council should consist of IEPA, IDOA, NRCS, ICBMP, IFCA, ISWS, and USGS. Should be a separate council for point versus non-point reporting.