Nutrient Monitoring Council (NMC)

Meeting Notes

Meeting 3: **December 3, 2015**, NSRC, Rm ~~240~~ 167, 1101 W. Peabody Dr., Urbana

Summary

10:00 am	**Welcome/Opening Comments/Housekeeping – Eliana Brown** - Anjanette Riley wrote a news article, "Killing the Dead Zone" which features the NMC. It will be in IWRC magazine "Illinois Water". - Nutrient Science Advisory Committee (NSAC) selected. There potentially could be interaction between NSAC and NMC. - NMC New Members Discussion ➢ Gregg Good was given authority to add prospective NMC members .
10:30 am	**Where We've Been and Where We're Headed** - Gregg Good provided review and posed questions.
Noon	**Lunch**
1:00 pm	**Monitoring and Implementation in the Fox River Basin** Cindy Skrukrud spoke about the Fox River Study Group's monitoring program and implementation document. They have aggregated data online.
1:30 pm	**Great Lakes to Gulf Virtual Observatory Demonstration** Jong Lee showed the group some of the capabilities of the Great Lakes to Gulf (GLTG) Virtual Observatory.
2:00 pm	**Charge #3: Prioritized List of Nutrient Monitoring Program Activities and Associated Costs** ➢ To form a basis for the Nutrient Monitoring Program, NMC will start prototyping 1 or 2 watersheds into GLTG. 1. Fox R. Study Group (aggregated data) 2. L. Springfield Watershed (not aggregated data)
2:10 pm	**Next Steps** See below
2:20 pm	**Next meeting date(s) – April 5, September 13, and December 6, 2015**
2:30 pm	Adjourn

Next steps

- Gregg Good to contact Kevin Culver, Aqua America, to invite him to join NMC.
- Cindy Skrukrud to contact Conservation Foundation to add DuPage River monitoring sites to NMC maps.
- Jong Lee to look at Fox River Study Group data to evaluate it for GLTG.
- Katie Hollenbeck to email agencies with monitoring in L. Springfield watershed to ask them for data. She will collect and send it to Jong Lee who will look at it to evaluate it for GLTG.
- Laura Keefer and Kelly Warner to meet and discuss state and federal issues for data criteria. They will work with Eliana Brown to query all monitoring agencies about data criteria.

Future topics for the April 5, 2016 (Springfield) meeting

- Report from Jong Lee and Katie Hollenbeck on Fox River Study Group and L. Springfield data.
- Results and discussion of data criteria query.

Meeting Notes

In attendance, members: Gregg Good, IEPA; Mark David, UIUC-NRES; Andy Casper, INHS; Kelly Warner, USGS; Cindy Skrukrud, Sierra Club; Jong Lee, UIUC-NCSA, Laura Gentry, Department of Natural Resources and Environmental Sciences; Laura Keefer, ISWS; Justin Vick, MWRD

In attendance, facilitators and other attendees: Paul Terrio, NSAC-USGS; Lyndsey Ramsey, IFB; Katie Hollenbeck, IWRC; Eliana Brown, IWRC; Anjanette Riley, IWRC

ELIANA BROWN: Welcome, I am co-facilitating the meeting today, so thank you for joining us in this room. We had a water leak in the other room. You have an agenda, and I want you all to take note of the upcoming meeting dates on the back. In addition, the IEPA nutrient webpage has all of the agendas and meeting notes. So to start, let's go around the room and do introductions.

ANJANETTE RILEY: I will introduce myself and talk about what we are working on for the communication side of the IWRC and what will be the feature story for our new yearly magazine, Illinois Water. There is a section of a magazine that we are working on and there is the leading story called "Killing the Dead Zone" that features you all briefly. Eliana and I are very interested in learning more about implementation of all of the committees. We have created some videos for the agricultural, wetlands, and bioreactors, and as you are working on things, we would like to learn more about the USGS superstations. I have a blog, and would like to partner with your communication staff to discuss various groups. So keep me in mind to discuss happenings.

GREGG GOOD: When will it be available?

ANJANETTE RILEY: The electronic version will be available at the beginning of January. The word version is available as the link on the agenda, and it is not for distribution. Other questions, ideas?

GREGG GOOD: Is Cindy Skrukrud quoted?

ANJANETTE RILEY: I tried to contact Cindy Skrukrud, but never connected.

ELIANA BROWN: This was my slide for where things are on the website.

GREGG GOOD: The meetings are all on the website, including presentations, agendas, etc. You can see what all of the groups have talked about. Google is the best way to find it since the IEPA's website has been revamped.

CINDY SKRUKRUD: I used to be able to find anything on the website but can't find anything now.

ANDY CASPER: I prefer the website tabs; I don't want big pictures.

GREGG GOOD: Next slide, one of the newly formed groups for the NLRS, the Nutrient Science Advisory Committee (NSAC), has been formed and introduced at the PWG. Six members are selected. They are: Todd Royer, Indiana University, NSAC Chair; Candice Bauer, USEPA Region 5; Walter Hill, INHS (retired); Douglas McLaughlin, National Council for Air and Stream Improvement Inc.; Paul Terrio, USGS-Illinois

Water Science Center; and Matt Whiles, SIU-Carbondale. Three members were a part of CFAR. CFAR is the Council for Food and Agricultural Research, and the program lasted for 10-15 years.

ELIANA BROWN: Was it an attempt at that time to fund research?

MARK DAVID: They funded all sorts of things, a strategic group worked on nitrogen and then all that money went away. We were one of the most underfunded states so it was an initiative for agricultural and science research.

PAUL TERRIO: We were involved.

ELIANA BROWN: So for the NSAC, we based selection on USEPA selection procedures, candidates were elected, and we had a selection panel, a colleague facilitated, and the goal was to have a balanced committee and they are meeting monthly in a number of policy and executive meetings.

GREGG GOOD: So that's the star group that will spit out what nutrient standards will look like in a few years. Their charge is to determine numeric criteria for nutrients most appropriate for Illinois water bodies – primarily streams, not lakes. Then, there is an implementation process after the NSAC completes its work. The intent is to go to rulemaking with a standards proposal and an implementation plan.

ELIANA BROWN: We had a good facilitator and great candidates.

GREGG GOOD: There is a NSAC data request. Todd Royer was under the impression that we are a data warehouse. We are trying to get a handle on who has what out there. At some point the NSAC will want to sit in on our meetings and get an idea of what we talk about. Paul is here, do you want to say anything?

PAUL TERRIO: The committee is still getting started and it's been years since we have focused on this, at least 10 years. Efforts are going to compile information and at this point, we will be talking to agencies and individual agencies. It will be critical for us to know what is out there and you can help us identify what is out there. I see a lot of overlap in our two committees. One of our first steps is to look at what other states have done and see what we have here in Illinois and see if we can apply anything from other states to our states. Biology will be critical to us, and I'm not sure if that will be readily available to us. IDNR and INHS collect a lot of information, but for those groups we may need a lot of guidance to seek a contact.

CINDY SKRUKRUD: What about biology? Algae?

PAUL TERRIO: Invertebrates, algae, and some fish.

LAURA KEEFER: Context and purpose of data means a lot. Has there been discussion that goes past metadata?

PAUL TERRIO: How it was collected, why it was collected, and what was collected are all important components. We haven't gotten into any of that really yet. Some initial states we are looking at are WI,

MN, FL, VT, MT for TP, and FL, MT for TN. To me, photic zone and turbidity (water clarity) in Illinois is very different than other states.

LAURA KEEFER: Can we get this list?

ELIANA BROWN: It's in draft form and not ready for release.

PAUL TERRIO: We will have more specific information.

GREGG GOOD: A lot of these states don't have turbid waters.

ANDY CASPER: The Corn Belt is distinctly missing. Thinking about other states in our region similar to us, are there other states we can learn from?

PAUL TERRIO: We have some contacts in Indiana, and are coming back to this process.

MARK DAVID: There is a fundamental conflict, do you have nutrient standards and then you are protecting the water or is it the real world where there is sediment and it's turbid?

CINDY SKRUKRUD: Is it turbid everywhere in Illinois?

MARK DAVID: Most places. Head water streams are dredged, etc. Most states don't have a nitrogen standard except FL and MT.

GREGG GOOD: Are you looking at different types of streams? Headwaters, big rivers? Small streams?

PAUL TERRIO: We had a general discussion about statewide versus watershed specific but haven't come up with a plan.

GREGG GOOD: There is a 0.05 mg/L phosphorus limit for lakes, but it's difficult because it is an impoundment. At the PWG meeting, each of the major groups-agriculture, environmental, and urban-gave a presentation to the NSAC offering their comments and suggestions. Bottom line: the NSAC needs to develop numeric criteria.

ELIANA BROWN: 18 months to come up with a number.

PAUL TERRIO: What do we need to consider? A reanalysis, additional information, etc.? The committee is an academic group and you want to use most recent data.

GREGG GOOD: So we wanted to share that the NSAC group is up and running. Next, a new members discussion. These are the current members of the NMC. I have given up on the Illinois State Geological Survey.

LAURA KEEFER: I will reach out to them.

GREGG GOOD: Doug Yeskis is leaving the state of Illinois.

KELLY WARNER: He is taking a job and planning on leaving in January. So, I'm the interim representative for USGS.

LYNDSEY RAMSEY: Lauren Lurkins is my supervisor, so I'm just here taking notes for her and for Laura Gentry to report back to the agricultural groups.

GREGG GOOD: Lake Springfield and Lake Decatur have a lot happening so we were potentially interested in having someone represented from there. From AQUA America, Kevin Culver has asked Brian Miller if he could serve on the committee. The question is if "does Gregg decide if he can be on the group?" Kevin brings the water supply perspective that is not currently represented in this group. How and when to add people? I don't want to get too many people on this group. Kevin Culver has made a request.

ELIANA BROWN: Let's do general discussion about membership first.

LAURA KEEFER: I am worried about a rush. What about developing an advisory sub group that we can go to and ask? The people hit with standards should have someone representing them – these are the very people that will be regulated.

GREGG GOOD: To me, these meetings are open. If they want in, do we have to let them in?

KELLY WARNER: I would be comfortable with you deciding who the stakeholders are.

MARK DAVID: There have been many people who haven't already shown up.

ANDY CASPER: If it's an ongoing committee, maybe, but we have a charge and a timeline.

CINDY SKRUKRUD: Since Kevin has generated interest, I don't have any problem with that.

ELIANA BROWN: People sound like they are okay with Gregg deciding who is on the committee and they are okay with Kevin Culver being on the committee. Now for contacting Lake Springfield/Decatur, should we wait?

MARK DAVID: Yes, you don't need to seek members.

GREGG GOOD: Every PWG, I talk about what we talked about at the last NMC, and vice versus. So I will go over it again. This will take us through lunch. I shared when we will have our meeting and discussed what our charges are specifically. Charges have been tweaked a little and I want everyone to agree 100% with what we are charged to do. 1a. What is leaving the state, compared to the 1980-1996 baselines 1b? What is leaving selected NLRS identified priority watersheds compared to 1997-2011 baseline.

ANJANETTE RILEY: Why different baseline?

MARK DAVID: We didn't have the data…

GREGG GOOD: What's the name for new superstations?

KELLY WARNER: So far we have been calling them supergages.

GREGG GOOD: Next, 1c. Identify trends in loading over time. 2. Document local water quality outcomes. And 3. Was to develop a prioritized list of nutrient monitoring activities and associated funding needed to accomplish the goals/charges in 1 and 2 above. Somebody may have to throw bucks at and the State Water Survey and USGS may have to go out and do more sampling.

KELLY WARNER: 2011 is a good year to chart changes in practices from that point.

GREGG GOOD: The AWQPF tech subgroup was charged with determining baselines and brought decision to PWG and it was approved with looking at BMPs. Then I shared what is going on with the supergages. Now Gary Johnson has to figure out how to get all the stations up and running. Red points on the PowerPoint slide we are looking at are the superstations, and the basins cover almost 75% of the land area in the state.

KELLY WARNER: For all the loads going in the Mississippi River basin, we should locate gages to measure. There is a USGS initiative to get USGS stations that have a uniform network in order to get aggregated load. Some only have nitrate, not phosphorus.

GREGG GOOD: Under the current agreement with USGS, we will monitor through 2020. This is a few million dollar project. If we want to keep this thing going, we will learn from the first 5 years.

KELLY WARNER: We believe that the cost for doing this will continue to go down. The Midwest Institute sampling Lake Erie said that they need 10 years of data for accurately predicting things on Lake Erie.

JUSTIN VICK: How many are being pumped up versus in the water?

KELLY WARNER: All are in situ right now. The sensors are in the bottom of the tubes.

CINDY SKRUKRUD: Will the phosphate data be shown real time? I have seen nitrate in real time.

KELLY WARNER: Phosphate is more finicky.

PAUL TERRIO: We got some instrument sensors up and running but phosphate is last, more problematic.

GREGG GOOD: They were doing every four hours on phosphate, but are down to every two hours.

PAUL TERRIO: We are going to two because the system works better with more sampling. With the higher phosphorus levels, the longer it sits, the more problems we have with staining issues so we are going down to every 2 hours.

GREGG GOOD: And that network is getting back to what is leaving the state, and not what is leaving the watershed? You sent Katie your lat/longs for monitoring information. So we shared a few examples of maps that are going on in the state. I will show some older maps that we had previously discussed.

KELLY WARNER: Who coordinates this Riverwatch data?

GREGG GOOD: GREON. Who gave us that data?

ELIANA BROWN: Michael Brennan.

GREGG GOOD: Change INHS Basin surveys to IDNR.

ANDY CASPER: What are some of the years?

GREGG GOOD: Some are on a rotating basis, some goes back to the 70s, and it depends. So these are 5-6 examples I shared with the workgroup. So okay, what was the next step? Should we be developing priority watershed maps to estimate N and P loads, trends, etc.? These were the 6 watersheds where there is a lot of monitoring going on – Springfield, Decatur, Rock, Chicago/Little Calumet, Upper Salt Fork, and Middle Fox. So we asked the AWQPF to select where there is current or expected implementation work. They discussed Springfield, Decatur, Bloomington, Vermilion River, N. Fork Vermilion, Lake Mauvaise Terre, Kaskaskia, and Lower Illinois River. What would a watershed nutrient monitoring plan look like? What does "discussed" mean?

ELIANA BROWN: It means that "finalizing" will be on the next meeting agenda.

GREGG GOOD: We looked at the five states bordering the Upper Mississippi area. We developed a UMR monitoring strategy. But, who will do this work? When will they get done? Who develops each plan? So is coordinating the development of individualized watershed nutrient monitoring plans where the NMC going next? Comments, questions, concerns?

KELLY WARNER: So the baseline for the watershed?

MARK DAVID: It's all Gregg's data and that's what we used for that.

GREGG GOOD: Are we on the same page on where the council wants to go next? So then let's look at the next six examples. So here is the first one, Springfield, so if you know that there is additional sampling, let us know.

LAURA KEEFER: We have older data, late 80s, in Sugar and Lick Creek, close to the fish basin surveys. There is no flow data, but there are more samples in Panther and we took samples at the spillway.

KELLY WARNER: Our points are continuous nitrate gages; USGS is working with the Corn Growers.

GREGG GOOD: Is CWLP helping foot the bill?

PAUL TERRIO: No.

GREGG GOOD: So here is Lake Decatur, more sampling, what about NLA and NRSA sites? The USGS did the work for that.

LAURA KEEFER: For ISWS, we sampled for 15 years, nitrate only, and a few stations were much smaller and had all phosphorus and nitrogen with nitrate.

GREGG GOOD: In the NLRS it discusses why each priority watershed was selected. It wasn't based on anywhere where we have a lot of data. Next, Rock River, and Chicago/Little Calumet.

CINDY SKRUKRUD: Chicago/Little Calumet is not a priority watershed because it doesn't have a watershed plan, but should be priority. What we don't have is the DuPage River Salt Creek work group monitoring sites. And we can get those from Steven McCracken from the Conservation Foundation. They remonitor on a certain schedule and goes back 10 years ago. They monitor on West Branch, East Branch, and Salt Creek. New monitoring efforts are being considered for Lower DuPage.

GREGG GOOD: So for Upper Salt Fork, we decided on the entire Salt Fork instead of just the Upper. Next, I still want to talk about the Fox River. The Upper Fox was in the NLRS. We wanted to throw in the Upper portion of the Lower Fox.

CINDY SKRUKRUD: USGS have been doing a lot of groundwater sampling in McHenry.

GREGG GOOD: So what is the next step? Do we want to do nutrient watershed nutrient plans. Is this what we want to concentrate on? What is our next step? Do we start developing these plans?

CINDY SKRUKRUD: I was thinking from the standpoint of the Fox River, there is a better way to coordinate between state and local groups to get existing data.

KELLY WARNER: None of these selected watersheds are in the southern part of the state.

GREGG GOOD: Our selection was based on discussion from last meeting which you weren't at.

KELLY WARNER: We are monitoring and looking at loads leaving the state. Do we want to pick at least one?

GREGG GOOD: A lot of these are the subwatershed and we will get the load from the superstations.

LAURA KEEFER: Mark has stuff in Upper Embarras and we have some things, but there is a superstation.

KELLY WARNER: I would think that you would want a southern watershed.

ANDY CASPER: Density of monitoring and density of BMPs.

LAURA KEEFER: Kaskaskia is as close as they come to the southern region.

GREGG GOOD: At lunch, think of where you want to start. Next we have Cindy and Jong's presentations.

ELIANA BROWN: We will have lunch, continue talking informally at lunch, have presentations, and then formally discuss the answers for questions.

BREAK

ELIANA BROWN: Now Cindy and Jong will give their presentations and we will continue discussion.

CINDY SKRUKRUD: I work for the Sierra Club and am the chair of the Fox River Study Group a 501(c)3 . The Fox watershed goes up into Wisconsin, and there are lots of people, dams, and wastewater treatment plants. The dams are very important to its problems with nutrients, and it acts more like a lake than a river. We first started getting together when we first started seeing reports of nutrient-

caused impairments of the Fox River. This map shows middle stem, this is a list of 303(d) list that has impairments and we ask a lot of the Fox River, recreation, aquatic, wastewater and stormwater, drinking water. Fox River Study Group 501(c)3 in 2003 and has a mission to bring together diverse stakeholders to preserve and enhance water quality in Fox River. There is a four phase approach, and we are currently in Phase 4. In Phase 1 we did background work to understand available information from 2002-2003, in Phase 2 we developed planning tools from 2003-2009, in Phase 3, we integrated monitoring and refined models from 2006-2013, and 2013-present is Phase 4, the implementation phase. Back in 2002, we started as all volunteers, and sampling of sites is all simultaneous.

GREGG GOOD: Who are the volunteers?

CINDY SKRUKRUD: Wastewater treatment plant employees, McHenry County Defenders, Sierra Club, and Friends of Fox River. This is our study area. It starts in McHenry and Lake County above the Stratton Dam. All of the data goes into a database that the State Water Survey pulled in for us. All of the data available for the Fox River is available. We update it every year or two. This is on the Illinois support system data site and these are the two models put together for us using the ISWS. We have done intensive water quality monitoring for model calibration. And so this is an example of the data we have and shows our main stem and tributary sampling sites. This is the data that ISWS collected. And one of the things that have come out of the work that we have done was the sources of TP in the Fox River watershed. We also have analysis by tributary too. And the last few years we have been working on the Fox River implementation plan and have several goals. We have some problems with our model and our model is not simulating as low as the DO actually gets. We hired Limnotech to work on a modeling plan. They haven't been able to resolve this problem either. I want to show you some scenarios with the disclaimer here.

GREGG GOOD: Tell them why you owe us anything.

CINDY SKRUKRUD: We basically committed to doing this, instead of IEPA developing a TMDL.

GREGG GOOD: They requested for us to give them some time and they are going to do that.

CINDY SKRUKRUD: We have been moving along, issues arise, in some years we can't sample, we have had issues with our model, and a couple years ago, there was pressure for wastewater to manage phosphorus. Things are complicated, so some computer simulations look at removing dams from the Fox River. In these scenarios, we have removed all the bulk of the damns. If you remove dams, you get some improvement in algae levels downstream. And the model results for dissolved oxygen are subject to revisions due to uncertainty in model calibration. If you remove a dam, you don't get as deep of pools with low DO. Our most aggressive alternative is looking at TP and phytoplankton (removed dams, reduced wastewater TP to 0.01, 0.05 is the standard for lakes). So in the near term, all of the wastewater plans on the Fox River WWTP effluent TP limits are 1.0 mg/L and will reduce TP by 35% and for future monitoring, we would really like to coordinate with IDNR and IEPA on the 2017 intensive basin sampling. Monitoring both before and after dam removal would better inform our monitoring on impacts of damn removal. We are looking to have scenario planning tools to allow "what-if" scenario testing. We can also add our own practices and numbers.

GREGG GOOD: Are you self-funded?

CINDY SKRUKRUD: Yes, we benefited from USEPA funding in past. Now we ask communities within the watershed at cost of 25 cents per capita, Aurora and Elgin is 50 cents per capita and I also write a lot of grant proposals.

GREGG GOOD: So the budget goes up at down?

CINDY SKRUKRUD: Yes, roughly $200,000 is our income. There are other watershed groups that have a more defined way of asking for funders. We haven't ever had to stop our efforts because we didn't have money. It's not a quick and simple process, but you have to work with all the stakeholders to seek change.

GREGG GOOD: Are you using data to see what wastewater is contributing?

CINDY SKRUKRUD: Yes, we also are asking MS4s to report what stormwater practices they are doing.

ELIANA BROWN: Thank you Cindy. I have questions for you later.

BREAK

ELIANA BROWN: Next up is Jong with a Great Lakes to Gulf presentation.

JONG LEE: Hello, I am a senior research scientist at NCSA and work with sensor and environmental data and this is a trend among our collaborators. If I can, I focus more on the platform that the background content. We are working with NGRREC and U of I Center for Supercomputing and want to assist large river ecology. This uses a technology called the GeoDashboard and provides a new resource to make decisions. It is also used in other projects too like the Great Lakes Monitoring and it shows the Great Lakes and shows who is collecting the data with a different way to categorize this data. Another one is IMLCZO and can look at the critical zones with a different way of categorizing it. Going back to Great Lakes to Gulf, and we are able to see all of the observation stations and sources. It is up to the people how they organize the data. You are able to search the data based on the area you want configured. What we are currently doing is finishing the first phase of deploying the dashboard. And will expand to include more environmental data. Funding is coming from Walton and McKnight grants. We have the supergage stations already up and running. [starts demo]

KELLY WARNER: So these are two different stations you're comparing?

JONG LEE: Yes, two different stations, but be aware of the time interval so we are working on how to compare samples on a monthly vs. yearly data. On the left side, all of the sensors are organized by river reaches or the agency. When you mouse over that the marker is highlighted, and if you click, you can see the parameters, time series, and you can get a graph and a boxplot and you can change the data range and zoom in. And you can download in CSV.

ANDY CASPER: Is this showing actual time interval or monthly averaged data?

JONG LEE: Aggregated by monthly, if you zoom in, then you see more data. Your browser cannot handle that much information right off the bat.

LAURA KEEFER: That's what we are used to working with.

JONG LEE: Lines represent patterns but don't show all of the dots. If we have an algorithm, then it doesn't need to be aggregated.

LAURA KEEFER: Looking at last three days, the default is that left slider comes over and demonstrates what can be done.

JONG LEE: They look at the real time data to see if the sensor is working or not. We are working with Lewis and Clark Community College.

ANDY CASPER: What the council is interested in, is perhaps biological response, macroinvertebrate samples, some of those samples on show a snapshot in time, so does it show continuous vs. periodic sampling?

JONG LEE: For Phase 3, we are looking into how to help in the system.

ANDY CASPER: Trying to tie urban development to fish data on five year intervals and biology at one year intervals gets difficult.

JONG LEE: So for this demo, I got the data from Katie. I took some agency data to display here. You can add layers if you want to and categorize by data sources. The next capability is the compare view. You can look at sensors and be able to choose a variable and choose another sensor and compare. There is a problem with making it smart enough to compare different time interval datasets.

LAURA KEEFER: So can you choose one station and compare different parameters?

JONG LEE: If you add another variable, it shows it in another graph. The platform can to apply to many different things. This platform is getting richer in terms of visualization.

LAURA KEEFER: Can the CSV give you two different files or one?

JONG LEE: You can get two different files or you can combine them. We can put that priority watershed in here. You can follow the river reaches and organize it that way. Or you can select the watersheds and select one parameter or multiple parameters.

ANDY CASPER: Can you do something where you compare the Mississippi watershed to the Ohio?

JONG LEE: Not yet, so far we can only compare sensors.

KELLY WARNER: Is this a real time update or static update?

JONG LEE: GREON is currently turned off, but there are three ways, 1. Static data, 2. USGS fetches the data every two hours, 3. GREON, sensors is uploading data directly to NSCA.

KELLY WARNER: What about corrections?

JONG LEE: For QA/QC, so far, people want to see raw data first, so there is a checkable box for that and then after QA/QC after will see as a different data sources.

ANDY CASPER: Can you tell us what comes next for the platform? There are a lot of data across a large area.

JONG LEE: What kind of science, we are not doing the science, data warehouse, so that why it's a "GeoDashboard". A "data portal" is another term.

LAURA KEEFER: There is discussion that there is fear that data will get grabbed and thrown up. Domain scientists are curating the data. IT people are not the domain people. Domain people need to be able to do QA/QC, etc.

JONG LEE: We have a weekly meeting, there is not all of the data and we are very well aware that we are not the expert. Also, another aspect, currently we have a glossary of terms we are using also talking about units and scientific terms.

LAURA KEEFER: On Great Lakes to Gulf, where is metadata?

JONG LEE: You can click and NOAA has buoy data portal and you can click and go to website.

LAURA KEEFER: What about adding an extra link so if you use the data, this is the citations you use?

JONG LEE: When you download we are working on downloading with metadata. So here is study, agency, and categories, and additional agencies. You can use it to filter out the data. Later we are working on databases to start with.

KELLY WARNER: Is it possible to build into this to contour from upstream from any point?

JONG LEE: There is an algorithm but we haven't tried it yet.

ANDY CASPER: Could you show metadata for biological parameters like macroinvertebrates?

JONG LEE: We don't have it in here yet. Also, we are not following metadata standard yet, but we hope to have it soon.

ANDY CASPER: Can you tell us about Phase 3?

JONG LEE: We are heading towards a distance support system. What kind of analysis is important and find out what kind of needs are there for distance support. You are able to build your own application very easily. We are hoping to tailor to decision makers to tailor it to a BMP.

ANDY CASPER: Can you incorporate older data? Is there a limit to older data?

JONG LEE: We are using the NCSA cloud data to incorporate it.

GREGG GOOD: Next steps: Should we develop nutrient monitoring plans? Populating this thing first, forming a basis for plan development.

LAURA KEEFER: We can focus on one or two priority watersheds and can figure out the data.

GREGG GOOD: What's your availability?

JONG LEE: There is a willingness to help the council using Great Lakes to Gulf. We can start some prototyping.

GREGG GOOD: So if we picked a few watersheds and data?

ANDY CASPER: There is lots of value to doing that; we need to play a little bit. We should be giving careful thought to what you want outcomes to look like. A good charge for what the ultimate outcome will look like.

GREGG GOOD: Keeping in line with the goals of 1a and 1b.

LAURA KEEFER: We can look at metadata and see what can be used and not.

ANDY CASPER: There could be ten things we don't like. Or have two that are informative and six that are great.

JONG LEE: GeoDashboard can organize data storage and we can make sure metadata is correct. If comes down to science and we can curate the data.

LAURA KEEFER: Doing one or two watersheds that will have different monitoring data, different frequencies, and different parameters could be good. We can look at how much we like the most at least and how much more monitoring is needed.

KELLY WARNER: We need a list.

LAURA KEEFER: It's an outcomes thing.

KELLY WARNER: We need to know what the list is or do you have to have baseline information. Then we need criteria parameters.

LAURA KEEFER: Not all data is complemented with the right data. But that might answer trends, etc.

KELLY WARNER: That will be a more detailed process.

GREGG GOOD: To put up what we want, yes. So that's when you ask it to spit out something.

LAURA KEEFER: It's not analyzing, only organizing data.

GREGG GOOD: So then we need the parameters and data. And then I'm thinking of Paul over there. Your charge is similar but your job is to say what the nutrient criterion is.

PAUL TERRIO: Probably some of both, database compilation and treatment system and biological.

GREGG GOOD: So should we be doing a pilot thing here?

KELLY WARNER: Some groups that are interested in putting in a plan. It would allow you a time difference. Like three months in a qualitative plan. A quantitative might take longer.

JONG LEE: For Great Lakes to Gulf, USGS is easier to work with. The hard part is that historical data the column data is hard to understand. What to show and what to hide.

KELLY WARNER: Charge 1b was all the priority watersheds to change.

GREGG GOOD: The state is going to concentrate our efforts and should spend money to monitor and implement. The first 18 priority watersheds were too much, so we narrowed down to 6. Now we are going to show what loads are being reduced down to BMP implementation. It's hard to show reduction based on anything. We can show what loads are coming out but maybe not show the reasons why. It's not our goal to monitor all 18 of these. We might also have to throw in bugs and fish to see how those are jiving.

KELLY WARNER: So our next steps?

GREGG GOOD: Pick two watersheds, define our objectives for GREON.

LAURA KEEFER: We have to do the computation.

JONG LEE: We calculate.

ANDY CASPER: For the council and first pass, simple is fine.

LAURA KEEFER: There are different computations. You can compute instantaneous load for each sample.

KELLY WARNER: Is someone going through to aggregate. Start with the Fox?

CINDY SKRUKRUD: Fox is already aggregated.

JONG LEE: I volunteer to look at Fox data to evaluate for Great Lakes to Gulf.

KELLY WARNER: How would you do a nutrient monitoring plan for these other ones?

GREGG GOOD: For Lake Springfield, who is aggregating that data?

KELLY WARNER: We are working with the Corn Growers.

PAUL TERRIO: Aren't they contracted out with Waterborne?

KELLY WARNER: Yes.

GREGG GOOD: What about Lake Springfield?

KELLY WARNER: For the date, what about 1980-present?

KATIE HOLLENBECK: So I can send out an email to folks you have location data in the Lake Springfield watershed and they can return the data for those points to me.

JONG LEE: If your station has a unique ID, please include that.

GREGG GOOD: We can stick with formally meeting again in April? Is there a need to talk before then? What about a conference call? April 5th in Springfield?

ELIANA BROWN: Yes, Springfield is the next meeting.

KELLY WARNER: We can approach from two perspectives and put it into a cohesive database. We know we have data. What is the time sync between one with a lot of data?

ANDY CASPER: There is a lot of data, but it's not aggregated. We are getting ready with a bunch of data.

KELLY WARNER: We want to know what it takes to get data cohesive.

CINDY SKRUKRUD: I don't know how much Springfield data there is.

GREGG GOOD: There is lots of data collected on the lake.

LAURA KEEFER: How many data points are needed? Having a ton of data and trying to wade through it isn't great either.

JONG LEE: Time criteria to sync together regarding the nutrients.

KELLY WARNER: All data? How much data? That's one of the questions. What are the criteria to screen data?

LAURA KEEFER: We can't throw out all of the data.

KELLY WARNER: You have to have flow. You cannot have loads without flow.

LAURA KEEFER: If some of these don't have flow with a reasonable distance, it has to be categorized. Categorize them into computations on which they can be used for.

ANDY CASPER: Load is primary.

KELLY WARNER: We can discuss the top 10 criteria data to be included. What do you think about a discussion to choose 5 or 10 things and see if those criteria are available for the sample points we have? We will discuss.

ELIANA BROWN: I can send out a query regarding criteria.

GREGG GOOD: Okay, so April 5th for the next meeting.

ADJOURNMENT