

Nutrient Monitoring Council (NMC) 7th Meeting

December 6, 2016

Conclusions and Next Steps

Conclusions

1. The Purpose Statement for Super Gage at Rte 53 (05537890) follows: Monitoring to capture nutrient loads coming from a concentrated urban environment in NE Illinois. Cumulative annual loadings will be estimated at this station that encompasses the Chicago River and DesPlaines River Watersheds. This will track the impacts of NLRs implementation such as point source controls, stormwater management, and other activities.
2. Rick Cobb, IEPA, provided an update of groundwater nitrate monitoring.
3. Chuck Theiling, US Army Corp, presented a project that uses dredged material and recovered municipal waste in soil manufacturing.
4. Jong Lee, NCSA, reported that they have integrated almost all of the Fox River Study data into the Great Lakes to Gulf platform. Thirty-six Illinois EPA STORET stations are in.
5. NMC has identified a potential gap in the ability to monitor local water quality.

Next Steps

1. NMC to write a few paragraphs detailing progress for the Biennial Report. Gregg Good and Ann Holtrop will send proposed language to the group. NMC will finalize and send to IWRC by Jan 31, 2017.
2. Jong Lee will send a link when the Fox River Study data are all integrated into Great Lakes to Gulf.
3. For the Vermilion River Watershed monitoring plan template, all NMC members will populate one line by Feb 7.
4. NMC to present the potential monitoring gap at the Policy Working Group meeting on Feb. 7. Gregg Good to write language for an email to the Policy Working Group so they will be prepared to discuss this issue at the meeting.

Next meeting: March 14, 2017

In attendance: Gregg Good, Illinois Environmental Protection Agency; Rick Cobb, Illinois Environmental Protection Agency; Ann Holtrop, Illinois Department of Natural Resources; Kelly Warner, United States Geological Survey; Chuck Theiling, United States Army Corps of Engineers; Justin Vick, Metropolitan Water Reclamation District of Greater Chicago; Laura Gentry, Illinois Corn Growers Association; Paul Davidson, University of Illinois; Katie Hollenbeck, Illinois Water Resources Center; Laura Keefer, Illinois State Water Survey; Eliana Brown, Illinois Water Resources Center; Jong Lee, University of Illinois; Andy Casper, Illinois Natural History Survey; Ben Wegleitner, Illinois Water Resources Center; Brian Miller, Illinois Water Resources Center

Welcome/Housekeeping

Introductions: Let's quickly introduce Ben and Chuck, they are new faces for some of you.

Gregg Good: So we have no other new guests. Here are the Nutrient Monitoring Council charges. Let's start out with the biennial report discussion. This is where we will tell the world what is actually happening.

Eliana Brown: This is Iowa's annual report. We are gearing up to do our first biennial report. We will present information on implementation from 2011 and 2015. One thing to point out is the science assessment update and what their research has shown. We can include implementation on committee reports. There is space to have Nutrient Monitoring Council give a few paragraphs about the progress of this committee. Kelly alone can talk about the superstations which are impressive. We have some nice things to say about this committee.

Ann Holtrop: What is the time that the report will cover?

Eliana Brown: Paragraphs and maps are needed by the end of January. Send those to me. This is the timeline of the rest of report. The draft report is due by March. Then there will be time for comments and revised reports. We are shooting to have it released at the end of August.

Ann Holtrop: Is this for calendar year 2016?

Eliana Brown: Overall, 2011 to 2015. But for this group, what is done to date?

Ann Holtrop: So progress to date?

Gregg Good: Members? I'll take a crack at that.

Eliana Brown: We are focused on agencies and entities that are focused on this group.

Gregg Good: By the end of January.

Eliana Brown: The Policy Working Group suggested stronger legislative awareness. If we have a fall workshop, we want to all be aware of the efforts that working groups have been making. If anyone wants to see Iowa's report, I have it here.

Gregg Good: You mentioned fall workshop? Do you know about the fall workshop?

Brian Miller: Instead of lots of Policy Working Group meetings throughout year, we want to do a concentrated workshop where a lot of things can be discussed. The idea of the 2-day workshop would be to have some time where groups can work on particular problems. The 2-day event would be sometime in the fall, sometime around November or December. How do we start to tell the story and get engaged? What money do we have, what's the next initiative, and questions like that. Maybe also an opportunity to hear from other states, especially as it relates to adaptive management.

Gregg Good: As a side note, Illinois EPA met with counterparts in Iowa and it was really nice for them to talk amongst themselves and to answer questions like how are you doing this and that? So will the meeting be overnight and what about money?

Eliana Brown: In 2016 Iowa got \$122 million.

Kelly Warner: Iowa has a big HUD grant and several other grants.

Andy Casper: So it is not state revenue supporting?

Brian Miller: There are some state funds.

Eliana Brown: \$96.6 million is from HUD and from the Department of Agriculture, \$9.5 million.

Ann Holtrop: Some grants that groups are getting are specifically for that.

Gregg Good: What's HUD?

Kelly Warner: Housing and Urban Development. They were able to submit a grant for the underprivileged. The whole state of Iowa qualified. They got the big one for the country.

Paul Davidson: How many years is that over?

Kelly Warner: I think 5 years.

Chuck Theiling: Water quantity is a big thing.

Kelly Warner: Water quantity and quality.

Charge 1(a) – N and P Leaving the State

Gregg Good: Kelly Warner has some slides to share regarding updates on supergages and where that is going. Last time we talked about having a 9th supergage, maybe by Joliet to represent what's coming out of the urban environment.

Kelly Warner: First, we now have 1 year of data. Supergages have been deployed for a year. The overview is that 4 have good data with all constituents. The other 4 supergages are problem children. The biggest problem is with phosphorus. It is an expensive sensor. If we looked at Chicago, that is a different phosphate sensor. We are trying to go over 1 year of data to determine gaps. We are doing a surrogate analysis. We looked at Big Muddy. It is one of our transitional sites in the state. I just wanted to show you here what the raw data looks like. In running a regression analysis, preliminary analysis, here is the relationship between phosphorus, turbidity, and orthophosphate. We will be targeting high flows to further refine regression. So that's where we are in stations.

Gregg Good: What's a good R-squared?

Kelly Warner: They're all good; it's just not based on enough points. The standard deviation will be greater on those. We know that when we have high turbidity, it is a direct indicator of phosphorus. Can we use that in times when we don't have total phosphorus?

Gregg Good: There is a challenge out there for phosphorus sensors.

Kelly Warner: The EPA has a sensor challenge for nitrate and phosphorus, to develop smaller less expensive sensors.

Gregg Good: So if you got a different kind of phosphate sensor, it is wet chemistry?

Kelly Warner: There are sensors that can determine total phosphorus but we currently measure orthophosphate. We placed a call to compare different phosphate sensors but haven't talked to representatives.

Laura Gentry: How high would you need to know?

Kelly Warner: 15. That is the sensor with the highest detection rate.

Chuck Theiling: How frequently do you exceed that?

Kelly Warner: Maybe if we have one in an urban environment, maybe certain times of year we would exceed that.

Gregg Good: Okay.

Kelly Warner: This is where we talked about a site. We looked at Lemont, and then moved it to Des Plaines at Route 53. I tried to show where different treatment plants are located. DesPlaines at Route 53 in Joliet would integrate most of the major metropolitan land cover. There is some mixing that might happen. We would have to separate it out or be cognizant.

Gregg Good: So Hanover Park is not that big.

Justin Vick: I think it might be the smallest in terms of volume.

Gregg Good: See this handout, which is the same as the slide. At the last meeting we talked about that site. In a nutshell, I went back to office and talked about potential sites with Sanjay. He said "is that where you want it?" Well that's where the council wants it. Maybe we should have discussion about maybe going further downstream. If we put it up here, it will capture Hickory Creek, DuPage, and Kankakee. Then I talked to Cindy Skrukrud and she was hoping it would go further downstream to catch the Fox and DuPage. What's the overall goal of this site? This site is to capture a change in nutrient loads coming from northeast Illinois' urban environment as a result of NPDES permitting, urban runoff, and Illinois NLRs implementation activities. So what do we want? What do people really think we are trying to show with this site? I want to say that creating a definitive goal statement is the best way to go.

Andy Casper: I heard the word “catch” to reflect an entire basin. It seems to be idea that we reflect trends. So I was wondering what the group thought? Calculate quantitative amount as it goes out? Or change?

Laura Keefer: The latter. I think we need to capture change. Then you can extrapolate change in the environment. We can't catch all of the urban environment at Florence, but a gage at Route 53 would

Andy Casper: Distinguish between agriculture and urban and changes from the agricultural community.

Ann Holtrop: Capture urban environment.

Justin Vick: We can tell you what comes out of MWRD. You'll be looking at stormwater.

Laura Keefer: At this station, won't be able to tell you which practices are impacting. There is no way to track it.

Ann Holtrop: Wastewater treatment plants are monitored.

Laura Keefer: That is a huge part of it. What is going on in the area that is capturing Route 53?

Gregg Good: So the dummy version of this is that Route 53 captures the urban environment. We need another one that gives us urban/agriculture. I'm totally fine with Route 53. I just want to make sure it is clarified. What's coming out of city? Urban is doing their job and agriculture is doing their job.

Justin Vick: Also track CSOs.

Gregg Good: Anyone supportive of going further downstream?

Ann Holtrop: If you did, maybe to the edge of Joliet. I would not go to Des Plaines, Kankakee, etc. It makes more sense to stop it.

Laura Keefer: Where is the next gage?

Kelly Warner: All the way down to Seneca.

Ann Holtrop: To capture all of the urban, for cost, it's not worth going down.

Justin Vick: How much influence does Joliet have to Chicago?

Kelly Warner: We do not want to separate out to Chicago. We just want to have a concentrated urban area.

Gregg Good: Assuming we want to do Route 53. Do we like the word “core” urban environment?

Andy Casper: To me, that sounds like we are calculating load.

Kelly Warner: We will.

Gregg Good: So in theory, the baseline year is 2011. In theory, we are looking at total load reduction.

Ann Holtrop: For urban runoff capture what is the Stormwater Working Group doing?

Andy Casper: You mean naming interactions with other working groups?

Ann Holtrop: It will help in a statement to say we are looking at the interaction of those big pieces.

Eliana Brown: Yes.

Gregg Good: I don't know about stormwater.

Kelly Warner: I would like to end the period after "urban environment" in that statement. The goal in this committee is to do monitoring and other councils can work from there.

Andy Casper: Make the statement that it's not the rivers, it's the process.

Ann Holtrop: The important part is the types of activities.

Kelly Warner: For legislative endorsement, location helps.

Justin Vick: Pin it to implementation so they get the credit for it.

Laura Gentry: Highlighting "would this gage capture most of this area?" Is this going to capture the change? We can extrapolate though.

Ann Holtrop: There aren't as many point sources in that other river.

Laura Keefer: It's opportunistic.

Laura Gentry: We are using the process of elimination approach. The best we can do is to take the big contributor out.

Gregg Good: There are watershed groups like the one that looks at the Fox. There are lots of point sources going into Fox. What load is from what point source? We are ratcheting out the point sources to reach point source goals. We should take credit for that. There are lots of groups. That's what she's saying.

Andy Casper: Can you relate what you just said to legislative audience. Are you seeing the watershed groups as a route to that audience? I'm not clear.

Gregg Good: I'm not sure.

Eliana Brown: Brian?

Brian Miller: I think at the last meeting, they were talking about the whole thing. How do we tell our story to constituents and supporters? At some point you have to have support from high up in the state. How do we tell the folks that need to hear it?

Eliana Brown: So Route 53? This gage helps support implementation of urban stormwater.

Gregg Good: All this gage shows is what's happening. What's happening in core urban environment?

Eliana Brown: Are we jumping forward too much to be considering adaptive management?

Gregg Good: What does adaptive management even mean?

Brian Miller: The Strategy is adaptive management with all of its programs and policies. We are measuring what point sources are doing and what's happening in the water. At some point, you have to draw a conclusion. Then, you have to decide if you have to make changes or not. You have to decide if you have reached your goal or not. Ultimately, you have to answer those questions.

Chuck Theiling: In terms of stormwater, what is the best form of adaptive management? Then you will have an incremental point source reduction.

Eliana Brown: So I added a sentence.

Gregg Good: Take out northeast Illinois? Add core?

Kelly Warner: Should we use the word "core" or "concentrated"? I think northeast Illinois helps with location buy-in.

Ann Holtrop: I like the suggestion of putting the period after urban environment.

Kelly Warner: The 2nd sentence is for buy-in of other committees. The monitoring doesn't inform BMP implementation.

Laura Gentry: Can I ask a point source question? Measuring at Joliet, doesn't represent Springfield, etc. Can we use that as a representative for other cities? Is the same magnitude comparable?

Rick Cobb: No.

Justin Vick: If they see it, they might try to implement the same stuff in Chicago.

Ann Holtrop: The difference is that we are restricting our geography for a different type of environment. We will use it to talk about the other gage in the network.

Laura Keefer: Coming from northeast Illinois, there is concentrated urban environment in northeast Illinois. For the purpose statement, we are "monitoring to capture nutrient loads coming from a concentrated urban environment in northeast Illinois."

Ann Holtrop: It's the same constraints. We just can't go down any further.

Gregg Good: Are we mentioning specifically the streams?

Ann Holtrop: We can show them a map.

Justin Vick: What about including the Chicago and Des Plaines watersheds.

Kelly Warner: For the purpose statement, we are “monitoring to capture nutrient loads coming from a concentrated urban environment in northeast Illinois. Cumulative annual loadings will be estimated at the station that encompasses the Chicago River and Des Plaines watersheds.”

Kelly Warner: This ties it into other committees.

Gregg Good: Okay, for the purpose statement, we are “monitoring to capture nutrient loads coming from a concentrated urban environment in NE Illinois. Cumulative annual loadings will be estimated at the station that encompasses the Chicago River and Des Plaines watersheds. This will track the impacts of Illinois NLRS implementation.”

Gregg Good: We are doing NPDES permitting whether or not we had an Illinois NLRS.

Kelly Warner: Okay, for the purpose statement, we are “monitoring to capture nutrient loads coming from a concentrated urban environment in northeast Illinois. Cumulative annual loadings will be estimated at the station that encompasses the Chicago River and Des Plaines watersheds. This will track the impacts of Illinois NLRS implementation such as point source controls and stormwater management, and other activities.”

Havana Lowlands Groundwater Study - Section 106 Monitoring Grant Update

Gregg Good: Okay, Rick is up next.

Rick Cobb: I’ve talked about it before, the purpose of monitoring and primary tasks. In Mason County, USGS, tried to put in a continuous monitoring well. They couldn’t get permission to drill, so we went out to the tree farm, which was public property. The well will be drilled sometime this month. It’s interesting to get changes in concentration, so they used a geoprobe. They will do Quiver Creek and collect samples there. So we will install a 4-inch monitoring well and collect continuous monitoring data. Some discrete water quality samples will be collected. We will collect nitrate data, field parameters, etc. We will also be looking at nitrogen isotopes. There are increasing nitrate trends, so we want to try to figure that out. We are trying to do a baseline assessment. In Quiver Creek we will measure discharge rate. We will measure specific conductance and surface water discharge. USGS will go out and collect those samples. Once we get a report done, we will put it out for stakeholder input before it is finalized. USGS showed that some of the highest loads are during low flow conditions. Which means some is groundwater.

Chuck Theiling: As far as application rates, are farmers recording that?

Rick Cobb: I had a meeting with the Department of Agriculture. The irrigators group put fertilizer on directly and also redress. So we don’t know how much is actually put on. In an initial early discussion, there’s not a lot of research.

Laura Gentry: The worst thing you could do is apply it all as one big slug in the fall. Is the tree farm cooperating?

Ann Holtrop: Yes. It’s our guys, the State of Illinois.

Rick Cobb: This is up gradient from tree farm; it's going from east to west.

Laura Gentry: It's coming from the agriculture, specifically the irrigators.

Kelly Warner: You can assume what the changes are, but you don't know until you know.

Rick Cobb: All we have are the discrete samples.

Laura Gentry: What are they growing?

Rick Cobb: Popcorn and seed corn.

Gregg Good: So, I asked Kelly Warner to push a pencil on the numbers for the supergages. This is an estimate, a ballpark.

Kelly Warner: Here are the estimates. The main cost is for phosphorus. Illinois is on the innovative edge for doing phosphorus. We are still working out the kinks of the combined Iowa and Illinois Center.

Great Lakes to Gulf Virtual Observatory Update

Gregg Good: Next, we have Jong.

Jong Lee: We are working on bringing data points/sites from IEPA to Great Lakes to Gulf. All of the data is coming from the Ambient Water Quality Monitoring Network of 36 sites. We are almost done with the Fox River. The Fox has 568 sites with phosphorus and nitrogen. We are working on that now. So I think maybe within a couple weeks we can put it on the site and send a link.

Brian Miller: Jong, you did proof of concept, but not live?

Jong Lee: Its live, all 36 sites.

Brian Miller: What about the Fox?

Jong Lee: We did 5 and now we are processing the 500 or so.

Brian Miller: The question is if you select specific watersheds, you can drill down. If you wanted to add those, you would try it, show it, and go through and do it.

Jong Lee: In the Great Lakes to Gulf interface, there is watershed area.

Gregg Good: The 36 sites I gave you are in priority watersheds.

Jong Lee: Correct. We provide the data platform so you can visualize it.

Iowa Document: "Stream Water-Quality Monitoring Conducted in Support of the Iowa Nutrient Reduction Strategy

Gregg Good: Iowa's Annual Report supplemental documents include a monitoring document. Maybe it would be nice if we had a document that talked about monitoring to support the strategy.

Custom Soil Manufacturing for Beneficial Use of Dredged Material and Municipal Waste Recycling

Chuck Theiling: How can we deal with these big mountains of sand? How can I apply this to ecosystem restoration? It was expensive and now 10 years later, I found a way to get rid of sand. In order to make dirt, you need 3 components. If we can pull sand out, then we could mix with silt, manure, and biomass. Marty Long from Minnesota was trying to figure out how to get rid of manure at a veterinary school. He also had to get rid of sand. He has developed 3-4 top soil mixes to their specification. You are taking all of these waste products and all of this other garbage and make a product from it and making money off their garbage. He's doing all of this work on public land and making money. Markets are St. Louis and Chicago. With the emerald ash borer, the organic load and die out of ash trees can provide organic matter. SIAM model (sediment impact analysis methods) received quantitative estimates of if sediment would be removed from stream at a certain point. We want to grow the soil market. All of the soil in Chicago is owned by 2 families.

Kelly Warner: Do you separate out the metals?

Chuck Theiling: There are no metals in the sand. It's clean.

LUNCH BREAK

Vermilion River Watershed Nutrient Monitoring Plan Template Development

Gregg Good: For the statewide monitoring, we are now talking recently about developing a template for developing one of these plans. It was a fight between the Vermilion and Springfield watersheds. I looked at a couple reports at the last meeting, so let's work on these bullets. What's out there? Kelly said let's do a Google Doc. So let's go to the Google Doc. If you search Nutrient Monitoring Council, you can see the 3 documents. Are we writing the document?

Kelly Warner: I thought the plan was to do the first one and that would be the template.

Laura Keefer: At least we can write the guts and see where we land.

Gregg Good: Cindy Skrukrud put some verbiage in there. She threw some stuff in there about watershed description. All of the documents had land use and watershed description. How much stuff should be in there? Do we really need all of that stuff? I just cut and pasted some stuff out there. What about the historic and existing data or biological and water quality data? Laura?

Laura Keefer: I changed things, but I left a lot of clues. I haven't completed putting some stuff in here. It includes data source, agency, etc. This is all surface water, Rick. I didn't deliberately forget about you. If you are sampling in the stream, if you are spreadsheet aficionados, I used all of the bells and whistles. You can insert the HUC 8 and 12, there are state FIPS, and I've added links, so if you aren't sure of something; you can read more about it. That's generally the watershed information. Then the data site, the point, and what the site ID is. The next thing is, what's the point of record for that data point that you have? If you can get down to the month, that would be helpful. Get a coordinate in and it can be figured out and then you can input the methods, description, sample collection protocol, QA/QC, etc. It

doesn't have to be formal, just drop some information in there. It's kind of a repeat of the form, by knowing the agency; you have a good idea of how that data was collected. I haven't filled this all out yet. For the parameter code, what should we use?

Kelly Warner: USGS and Illinois EPA have the same parameter code.

Laura Keefer: If you don't know parameter code, don't go after it. We have all agreed if you sampled the stream and there is stream flow data, then we can compute loads. What's the stream flow nutrient time set? We came up with the reliability of data. It is color coded. These were the broad categories, this was as far as we have gotten. Help us develop this a little bit better. This is the foundation of what you need to work on when creating a monitoring plan.

Paul Davidson: Long-term, who would be putting data into this?

Laura Keefer: We would be creating a template.

Paul Davidson: What would be the scale size? What about local versus large scale?

Laura Keefer: It could be whatever as long as you tell us.

Kelly Warner: The primary purpose for the priority watershed plans is that each plan would have its own.

Chuck Theiling: Are you collecting the data too?

Laura Keefer: No, this is just for what is out there. I don't know if we are going to create a new one for groundwater or if we will amend it.

Paul Davidson: Is it compatible with Jong's data?

Laura Keefer: It will be more of the metadata.

Jong Lee: It could be more of a search code. Parameter code would be difficult.

Kelly Warner: If you have the parameter code, the method for analysis is the same.

Laura Keefer: I was thinking of making a glossary. Was the sample collected at the bank or in the middle? It makes a difference.

Paul Davidson: What is the method for supergages?

Kelly Warner: In situ, in the field, field filtered. The biggest question is filtered or unfiltered.

Laura Keefer: That's all I have.

Gregg Good: So is the action item that you want to populate it or do we feel like we are authoring the first draft?

Andy Casper: I'd call it a draft.

Gregg Good: The action item is to populate and comment.

Eliana Brown: So do we want to give a due date?

Kelly Warner: February 14th?

Eliana Brown: The next Policy Working Group is February 7th.

Kelly Warner: How about everyone populate one line?

Justin Vick: I don't have data on the Vermilion.

Kelly Warner: Then you're done!

Chuck Theiling: Only nutrient data?

Kelly Warner: Yes.

Rick Cobb: What about intakes?

Kelly Warner: Let's have Rick try to populate this one.

Paul Davidson: Do we have access to that?

Gregg Good: Jong set it up.

Jong Lee: If you send me your Gmail account, I can add you.

Paul Davidson: There is lots of data. Should it be in a database? There's a lot of data so a database might be better instead of a document.

Jong Lee: So maybe the next step is after you see what you have.

Kelly Warner: Then we can hook up to your dataset.

Ann Holtrop: Is this data we will own and manage as a group?

Justin Vick: First we would put together a survey for those who have collected biological data. So this is a general survey. After we get the data we look at it specifically. I took the data and created this; just a compilation. And then I started doing a chat list.

Ann Holtrop: As we were talking about it, I struggled doing this.

Justin Vick: What quality of data do you have? How deep do you want to go? We want to ask people what data they have.

Andy Casper: Comprehensive was the default.

Ann Holtrop: Are we trying to figure out if data exists long term to measure data against it as a baseline in the future?

Gregg Good: Yes. We shouldn't be just looking at loads but also load reduction. Hopefully we are still looking at long term macroinvertebrates and fish. This is to see what's out there in respect to monitoring, not just nutrient load.

Kelly Warner: As a non-biologist, what are we measuring? Is it sensitive to nutrients? Is it indicative to nutrients? And when did you measure it?

Andy Casper: To do so will require a decision on what is "sensitive" and what are other definitions. There are about 20 different papers that do it in about 20 different ways.

Justin Vick: They are a product of all of the stressors.

Andy Casper: The nutrients impact the algae, which all of the animals eat.

Gregg Good: I have to go back and see how priority watersheds were selected. I didn't look at biological data.

Laura Gentry: How were they selected? Mark David said Amy Walkenbach selected them.

Gregg Good: Nutrient reduction is Rule #1. It is nice to show a benefit to the macroinvertebrates and fish.

Andy Casper: You can safely say a system is in good or poor condition based on bugs and fish.

Ann Holtrop: When water quality is improved, you can see that in documented species. Local citizens would care more about that. How do we tell that story?

Laura Keefer: It's not biting off too much, just by documenting reduction of loads alone. It cannot be substantiated unless other things support it.

Kelly Warner: Maybe don't need it in a spreadsheet. Maybe we could use it only as a reference? We could use it as a metadata reference document, indicative of baseline conditions.

Laura Keefer: What about a monitoring plan like Vermilion that is collected weekly, continuously? We could develop a plan that has a frequency of sampling. I can't imagine long term continuous sampling is in anyone's budget. I like discrete samples along with an event, but maybe composite is the way to go. It's treading new ground.

Kelly Warner: I looked through it as my bibliography.

Ann Holtrop: No one thought it would go into the plan, but looked to it as a reference.

Kelly Warner: We selected a priority watershed as a plan. So this table was kind of the ultimate reference document for that.

Ann Holtrop: I don't think that's how we talked about it. Okay, let's write a plan but figure out what data is out there. Then we got into what do we want to know about data in the first place so we can go get it?

Gregg Good: It's difficult in a nutrient rich state. That's why we don't have nutrient standards-

Andy Casper: What about birds, fish, bugs, and plants? You could use one you have the best data for, although it may not be the best data in some of those watersheds.

Ann Holtrop: We talked about habitat and algae, if we stick to that as a smaller subset of biology.

Andy Casper: What about rare, unusual, or threatened species? We could characterize that.

Ann Holtrop: We could look at the species list in the data.

Laura Keefer: Do we have a time limit to get our charges done?

Gregg Good: I don't have the answers. We don't have a pot of money. If we come up with something, who's going to implement it? Who's got the money? Are we moving fast enough? Is the Policy Working Group directing us? There's not really a deadline. We have the charge, self-made, self-imposed charges, but are we developing plans?

Ann Holtrop: Charge number 1 is in the works, collecting data. Who is generating the 5-year averages?

Gregg Good: That's 1a. Most of 1 is happening. I'm struggling with 2.

Ann Holtrop: The one piece from a monitoring perspective is what's going on in the landscape. To determine if the Illinois NLRS is having any impact, we need to know what's happening on the ground.

Gregg Good: We are doing that.

Eliana Brown: We meet in 2 days to talk about it with the Agricultural Water Quality Partnership Forum Tech Subgroup meeting. There are 13 BMPs that Mark David recommended for agriculture. We identified people and tech people to help quantify and figure out how to capture all of that data. NASS is crafting a survey that covers what the Farm Service Agency doesn't know.

Ann Holtrop: Can you give me an example of one of those parameters?

Eliana Brown: Tile drained corn acres.

Ann Holtrop: What about putting on a nutrient inhibitor and tracking that piece of property?

Eliana Brown: Mark Schleusener surveyed 1,000 Illinois growers. Selection was random so, there was not mapping done.

Ann Holtrop: There is no way to connect what is happening on the ground to what we are doing.

Paul Davidson: It helps give a picture of what farmers are doing.

Eliana Brown: They have to keep the identities anonymous in the survey.

Laura Gentry: What about polling farmers? Farmers are doing a lot outside of these things. What about just asking about these things?

Ann Holtrop: We should start to look at relationships between what happens on the ground and what happened in the water. How do we know it's any of those BMPs that did it? How are we aligning these things?

Paul Davidson: That's the motivation of targeting certain watersheds. We can only get a state level NASS survey or we would need a lot more money.

Ann Holtrop: How are we capturing everything? What is Illinois EPA looking at? Is the Urban Stormwater Working Group looking at discharge?

Eliana Brown: You're asking an adaptive management question we don't have answers to.

Chuck Theiling: We have landscape data, and are chunking it down to watersheds, looking at nutrient movement. We are looking at a 50 meter pixel size. We can't crunch data without a supercomputer. How can you get enough measurements to measure your outcome? And you have to find a watershed where there is someone hitting it hard.

Laura Keefer: It's very controlled. We haven't talked about it with monitoring; it's not a 1-to-1. There's a lag factor, like with an increase in precipitation.

Ann Holtrop: At a point source facility, you don't see certain species. In other basins, there are different kinds of practices. That is where we need to tell the story.

Eliana Brown: Is there any value in having this group let other groups know what you are doing?

Laura Keefer: In the fall? It's getting late.

Ann Holtrop: Go with the gages, gulf hypoxia.

Eliana Brown: That is one goal; the other goal is to improve local water quality.

Gregg Good: Sanjay asked how it was going. From a statewide perspective, it's going great. The watershed perspective, I'm not sure. We have all struggled showing and documenting it is more difficult. We want to show that if you will make me do this, I want to know that there will be benefit. If you don't have examples what load reduction does for aquatic community, why are you making me do it?

Ann Holtrop: We have a specific question you want to answer. It should be a more focused answer.

Andy Casper: We can talk about quality or condition of the watershed.

Ann Holtrop: Or we can talk about what the one big change is.

Eliana Brown: The Policy Working Group meeting is on February 7th, the Tech Subgroup meeting is on Thursday. The point sources are giving all their data to Illinois EPA.

Ann Holtrop: What about the performance benchmark part of the Urban Stormwater group?

Eliana Brown: There are interim benchmarks.

Ann Holtrop: Is there a Point Source group?

Eliana Brown: NRLS document didn't include a Point Source group. Then Marcia called for it. It took a while to get off the ground and it's not as robust as other groups, but it exists.

Gregg Good: IWRC sets up and facilitates and sees everything that is happening.

Rick Cobb: Is the purpose for having watershed monitoring template more for the groups doing voluntary stuff? Is that the real purpose for this?

Gregg Good: U.S. EPA said that states need to develop a state nutrient reduction strategy. Priority watersheds need to be selected.

Eliana Brown: We made 27 maps to visualize and select watersheds.

Gregg Good: The Nutrient Monitoring Council made decisions for the maps; IWRC came up with the maps.

Rick Cobb: It seems like you really can't match at field scale of BMPs and monitoring on map.

Ann Holtrop: I think we need to ask the committees that question.

Laura Gentry: We have no idea what farmers are doing. Lots of farmers are doing things to prevent soil loss.

Ann Holtrop: It might be helpful for our group to see what exactly they are tracking.

Eliana Brown: All the final information is going into the biennial report.

Chuck Theiling: Are agriculture practices matched with nutrient outcomes?

Andy Casper: What about missing information on high quality or low quality land?

Eliana Brown: We are making changes to the land to make changes to water.

Laura Keefer: We won't get more refined to show causation relationships. If there is a shift, you can attribute it to changes. We will see changes sooner in watershed level than state scale.

Eliana Brown: Would you like me to send you agriculture publication specifications, Ann? Would that spreadsheet be helpful?

Gregg Good: Can you send it out to the whole council?

Laura Gentry: There is Landsat data out there. The publication came out. We are taking buffers out. You can look at cover crops.

Chuck Theiling: Crop compliance?

Andy Casper: Can't do that.

Chuck Theiling: What are they?

Laura Gentry: The Farm Bill has certain types of crop insurance.

Chuck Theiling: There are places in Illinois where there is a high instance of BMP application you can look at.

Laura Keefer: There is FSA data. We've been monitoring watersheds for years.

Rick Cobb: Is it monitoring is as improving water quality?

Laura Keefer: It's looking at it as annual trends.

Rick Cobb: Is it going up or down?

Laura Keefer: It is holding steady and going down. I haven't teased out precipitation, etc.

Laura Keefer: Besides the charge, I wonder if this is a good group to collectively agree that the how, when, and where is more. We can continue to monitor what is coming out of the state without breaking the bank, just monitoring smarter based on what they already know. If we need to monitor improvement, maybe we need to sample a different way.

Andy Casper: If we are aiming for a number that's not the threshold, then it looks like we've failed.

Laura Keefer: We can wait around 10 years for needle to move. It's not that it wasn't working, but it took that long to wait for the needle to move.

Rick Cobb: Where you have BMPs in place may be a better place to monitor than the priority watersheds.

Laura Keefer: It seemed like in some priority watersheds, nothing was selected that was doing CREP.

Laura Gentry: It was Illinois EPA that picked those using Mark David's data.

Laura Keefer: A 35 year sediment survey finished. It shows major tributaries in Illinois River basins showed something like 65% sediment deposition. It's not trends, it's a budget.

Andy Casper: A simulation model?

Laura Keefer: Somewhat.

Ann Holtrop: I'm identifying a disconnect between what charge is and what other groups are doing. We are trying to develop a monitoring strategy when we don't know what's happening on the ground. We need to spend some time reflecting on next steps. We've come a long way.

Eliana Brown: Is it an organizational or scientific disconnect?

Rick Cobb: All of the above.

Chuck Theiling: I don't see a connection between trying to fix the problem and monitoring change.

Ann Holtrop: If there is, the other groups tackling it.

Andy Casper: We have ability to get responses at a watershed level, but I don't know what we are responding to.

Eliana Brown: So I'm wondering, should this issue be discussed at the meeting on Thursday? Should someone attend?

Laura Keefer: NSAC is looking at biological indicators.

Eliana Brown: NSAC is a quick read.

Paul Davidson: They spoke at last Policy Working Group, but there weren't any large takeaways.

Laura Gentry: Mark David's research. There are county records of fertilizer, Landsat, etc. So it's not like there's not information out there. Are there no details on fine tuning data?

Ann Holtrop: That's a good starting path.

Eliana Brown: The Agricultural Water Quality Partnership Forum Tech Subgroup is looking at that. I sent you how they will track that.

Ann Holtrop: Are other groups doing that for every other practice?

Eliana Brown: Yes, a caveat is the Agriculture group. The Point Source, we already know, the monitoring and stormwater not nearly as significant, but we have been discussing.

Laura Gentry: Isn't Amy Walkenbach thinking about how to do the next science assessment?

Eliana Brown: Mark David is doing an update.

Gregg Good: Part of the issue is that we had some real leadership in Marcia. Amy is filling in but she has lots of responsibility. There are all of these part-time workers. Other states have full-time workers. Next fall is the big working meeting. The Policy Working Group is only getting together twice a year.

Eliana Brown: At the very least, how do you feel about having time at Policy Working Group in February to talk about issues, especially if we have quantified the issues?

Laura Keefer: We just need a smaller contingent. Gregg going is like tossing him to the wolves.

Ann Holtrop: I'll go with him.

Eliana Brown: So then, Laura Keefer, would you like to jump on the NSAC call? The next one is on January 9th. I would email Todd Royer and let them know that you are coming.

Laura Keefer: I'm wondering if Todd can talk with me and Gregg.

Next Steps

Gregg Good: So next steps?

Eliana Brown: The Nutrient Monitoring Council will report to IWRC by January 31st. We have a purpose statement for the Route 53 gage. We need to populate and identify issues; everyone does one line by February 7th with the contingency that it comes to the Policy Working Group meeting. The next meeting will be in Springfield. It's always helpful to send something out to the Policy Working Group ahead of time.

Gregg Good: The next meeting is in Springfield.