Policy Working Group

Meeting Notes

Meeting 2: November 18, 2015, Champaign, IL

Summary

1:00 – 1:15 pm	Introductions
1:15 – 2:00 pm	**Implementation actions and initiatives by Sector** ➢ Environmental group representatives have served on several NLRS workgroups. They are: working with watershed groups, engaged with monitoring, serving on Nutrient Research and Education Council, and making comments to Illinois EPA on NPDES permit drafts. (Cindy Skrukrud) ➢ The Point Source sector has many voluntary efforts going beyond what has been required by permits, including adding nutrient removal processes at MWRDGC, Peoria, DeKalb, Fox River WRD's West Plant, and Fox WRD's sidestream treatment. UCSD is routing more flow to the SW plant (which was converted from chemical to biological P removal in 2005). They expect that there is a point of diminishing returns on removal. An Illinois Environmental Utility is being discussed. The Utility advocates are working on a white paper. In addition the regulatory direction mentioned in the Strategy is occurring with all dischargers getting either fully formed limits or Feasibility and Optimization plans.(Rick Manner) ➢ The Agriculture sector is continuing to have well attended meetings including the Farm Progress Show in September. Last Friday, the Farm Bureau started another series of meetings with 13 scheduled. They will continue to talk about the strategy at winter conferences. Farm Week has over 100 articles about the nutrients. CBMP's website has many tools and newsletter. They are working on practical BMP list and when to do them. (Lauren Lurkins) ➢ The University held a Youth Photo Contest. Photos are available for the PWG to use for implementation. Ag and point source videos are in the works. They are also working on a website that will serve as a portal. It won't duplicate what exists, but will have short descriptions and links. Let IWRC know if any groups need any outreach SWAG. (Anjanette Riley)
2:00 – 3:00 pm	**Status of NLRS Implementation Workgroups, Forums, and Councils** ➢ Nutrient Monitoring Council has met twice. Next meeting is Dec 3. USGS Super Gauges coming on line so will be able to show what is leaving Illinois. Gathered monitoring location information from each agency to make maps of current long term monitoring and selected Top 6 watersheds. The next meeting will have presentations by Jong Lee, NCSA, and Cindy Skrukrud, Sierra Club. ➢ Agriculture Water Quality Partnership Forum (AWQPF) is building on and refocusing existing programs to educate growers. Shawn Wilcockson to work with group to put together list of voluntary programs. The Tech Subgroup meeting included a presentation about Iowa's logic model. The Tech Subgroup adopted the logic model for Illinois and filled it out during a subsequent conference call. They also determined that data sets are available that support a baseline year of 2011. A NASS Survey is being planned for Spring 2016 to fill in BMP implementation gaps.

	➢ Urban Stormwater Working Group has acquired several new members and will have a call on Dec 11. ➢ Point Source Working Group will be convening soon. ➢ Performance Benchmarks Working Group will be convening soon. Discussion topics to include: baseline year, benchmarks vetted in reality, benchmark metrics, and targeted watersheds vs. statewide outreach. ➢ **Baseline year discussion– At the last meeting, the Policy Working Group thought 2011 was a good baseline year. Tasked AWQPF Tech Subgroup to determine if data sets would support that selection. They said they would work as long as there was +/- 1-2 year. Following discussion, there appeared to be general acceptance of 2011 as a baseline year.**
3:00 – 4:00 pm	**Nutrient Science Advisory Committee (NSAC)** NSAC members introduced themselves by providing brief biographical information. ➢ Environmental Sector Address to NSAC– Albert Ettinger Making a *policy* decision. Water quality standards are inexact. They must protect the "most sensitive use". Not to be concerned with economic considerations. Standard needs to be set at level well before where P ceases to be limiting. Setting standards above point where P ceases to be limiting is worthless. Illinois has few waters where P is still limiting so must be able to look at different states. This is going to take some time to see a difference due to existing sediment. ➢ Point Source – Nick Menninga CFAR research included academic, vetted work, finding that flowing waters in IL generally do not exhibit impacts from nutrients. IEPA is already identifying and working with those streams that do appear to exhibit some impact. IAWA is supportive of development of scientifically derived and defensible standards. Environmental impacts need to be justified with tangible benefits. Cause and effect relationship must be clearly identifiable between nutrients and aquatic life. Statewide blanket approach (ie, eco-region or algal growth threshold) overly simplistic, does not match previous CFAR work Important to express WQS as longer term averages (e.g. seasonal 3 mo/6 mo limit). Daily limits are more problematic than weekly limits and so on….Remember that Point Source is a biological process. This makes shorter term limit challenging. ➢ Agriculture – Lauren Lurkins Nutrient criteria should make sense from economic standpoint. Do not see how one number statewide makes sense. Local level is more meaningful.

Next Steps

- NSAC will be providing updates at each PWG meeting. NSAC may not be present at every meeting, but there will be regular interaction. PWG will be invited when outside speakers present.

- Data sets opportunity. Provide qualitative data set descriptions to Eliana Brown for consideration by NSAC. Include QA/QC information. DEADLINE: Dec 31

Meeting Notes

ELIANA BROWN: Please sign in attendance sheet as official record of attendance.

BRIAN MILLER: Let's start with introductions and we will skip the Nutrient Science Advisory Committee (NSAC) and save them for last. We are here to help facilitate and implement the Illinois Nutrient Loss Reduction Strategy (NLRS).

Member Introductions

Rick Manner, Urbana Champaign Sanitary District; Kay Anderson, American Bottoms Regional Wastewater Treatment Facility; Nick Menninga, Downers Grove Sanitary District; Albert Cox (for David St. Pierre), Metropolitan Water Reclamation District of Greater Chicago; Thomas Granato, Metropolitan Water Reclamation District of Greater Chicago; Randy Stein, Bloomington Normal Water Reclamation District; Alec Davis, Illinois Environmental Regulatory Group; Chuck Spencer (for Liz Hobart), GROWMARK; Lauren Lurkins, Illinois Farm Bureau; Jean Payne, Illinois Fertilizer and Chemical Association; Rodney Weinzierl, Illinois Corn Growers Association; Dick Lyons, Illinois Association of Drainage Districts; Kelly Thompson, Association of Illinois Soil and Water Conservation Districts; Ted Meckes, City, Water, Light and Power; Kevin Culver, Aqua America; Albert Ettinger, Mississippi River Collaborative/Sierra Club; Kim Knowles, Prairie Rivers Network; Cindy Skrukurd, Sierra Club of Illinois; Marcia Willhite, Illinois EPA; Warren Goetsch, Illinois Department of Agriculture; Kerry Goodrich, USDA-NRCS

BRIAN MILLER: Now over to the NSAC and they will get to introduce themselves now and more extensively later in the meeting.

NSAC Introductions

Candace Bauer, USEPA; Walter Hill; Todd Royer; Paul Terrio, USGS; Matt Whiles; Douglas McLaughlin

Facilitators and Other Attendees

Brian Miller, Illinois Water Resources Center; Lisa Merrifield, Illinois Water Resources Center; Eliana Brown, Illinois Water Resources Center; Katie Hollenbeck, Illinois Water Resources Center; Anjanette Riley, Illinois Water Resources Center; Amy Walkenbach, Illinois EPA; Shawn Wilcockson, Illinois EPA; Trevor Sample, Illinois EPA; Richard Winkel, PRI-UI; Lyndsey Ramsey, Illinois Farm Bureau; Jennifer Wasik, Metropolitan Water Reclamation District of Greater Chicago; Gregg Good, Illinois EPA; Bob Mosher, Illinois EPA-WQS; Richard Breckenridge, Illinois EPA; Andrew Rehn, Prairie Rivers Network; Gina Bean, AISWCD; Alissa Kiedrowski, Illinois Soybean Association.

BRIAN MILLER: We are taking notes, transcripts and also next steps and conclusions. Our group is getting bigger so there are a few additional people here today.

MARCIA WILLHITE: So we started meeting for the NLRS in 2013. The draft was written and the NLRS was put out for comment in 2014 and the NLRS was released in July of 2015.

BRIAN MILLER: Comments were made about increasing representation in the storm water and working group so there are new members. All of the sectors have been busy with implementation of strategy. We are giving each sector time to talk about their progress and will give the storm water sector a pass this time. We will start with environmental sector, Cindy?

CINDY SKRUKRUD: I will cover some of what environmental groups have been doing. We have been serving on subcommittees and have been on the Nutrient Monitoring Council (NMC). We are doing outreach and have the Sierra Club members hosting sessions for us to talk about the NLRS in Oak Park, Octavia, and Rock Island and Rock Island had an earth week event. We have met with SWCD and Farm Bureau from the Fox River watershed and are doing work on implementing the strategy to address statewide losses and impairments in the watershed. There is a long standing group in DuPage and Lake Co. is forming a group. We are involved in monitoring efforts and the Sierra Club is doing monitoring in subcommittees. We have environmental representatives on the Nutrient Research and Education Council to make recommendations on funding for next year. Environmental groups are also nudging the IEPA to implement the strategy in discharge permits on major sewage treatment plants to make sure that permits issued are addressing local impairments cause by nutrient pollution.

BRIAN MILLER: Next, the point source sector, Rick?

RICK MANNER: From the point source view, one thing that is noteworthy is that Illinois is admittedly in low teens in terms of the entire county as far as percentage production. We are talking about how to lower that. It is a multi-year process with many voluntary efforts to work on chemical removal, biological treatment, and looking at nitrogen removal to do both nitrogen and phosphorus removal. Phosphorus removal processes is useful for the future. Peoria is doing a lot of work to look to the future along with DeKalb Sanitary District in doing biological phosphorus removal. Fox River is doing BNR and side stream treatment. In Urbana Champaign, we have converted from chemical removal to biological removal and reduced 20,000 ppy. We are rerouting some of our flow to our plant that removed P. treatment plants. Not going to reduce nitrogen or phosphorus, DuPage River and Salt Creek watershed group. The long term solution is an environmental utility with many partners working on that and working on funding right now.

THOMAS GRANATO: The group is developing a white paper now and bringing in an outside facilitator to complete the process.

RICK MANNER: Springfield is removing phosphorus and permits in primary watershed near Chicago are getting 1mg/L limits. Natural operations incorporate phosphorus into it and removing about half phosphorus. And will be removing 90-95% phosphorus. The key point is you can't get much more that 90-95% and cost doesn't get you much further than the goal. All treatment plants are getting optimization plans and feasibility plans are now required. Every place is different and numbers are different so feasibility plans can analyze how much each treatment plant can do and rewards innovators with limits. Have we actually seen reductions at treatment plants? Have we seen a change in the biota?

WALTER HILL: What is side stream treatment?

RICK MANNER: Side stream is reject water. It's concentrated with nutrients. Conventional wastewater treatment routes them to the headworks. Sidestream treatment routes them to nutrient removal processes.

TED MECKES: So a one million gallon treatment would have discharge of 3 lbs?

RICK MANNER: I'm not sure, but probably a little better but I haven't run one.

BRIAN MILLER: So now let's switch to the agriculture sector update.

LAUREN LURKINS: We have been busy, so here is an update from August forward. I heard that the Farm Progress show was awesome. The focus was on conservation with cover crop demonstrations. The Farm Bureau had water tests, and the Illinois Soybean Association had an exhibit to "try one thing". CBMP's tag line is "what is your strategy?" We also had NLRS literature. Farmers have finished up harvesting and our meeting season has started up for the winter. We do meetings with members at county levels and big conferences. I "force" our farmers to listen to me talk about the strategy. We get into the nitty gritty and if they want more, they can read more via provided links. We have lots of education at our disposal. We have been doing media coverage. Farm Week has had over 150 articles on nutrient issues. There have been interviews on our rural farm radio station. We also have 13 meetings scheduled from now to end of March. Personally, I have spoken to 3,000 farmers. With regard to the Council on Best Management Practices (CBMP) we are adding staff and resources. In 2016 CBMP will help farmers figure out cover crops. Corn Growers is having demonstration fields. Watershed projects have industry components all working together and engaging people. Corn Growers will offer water testing to find out nitrogen levels to see information coming off the fields. CBMP has a newsletter which you can sign up for. Practical BMPs are based on season. Illinois Soybean Association is working on phosphorus education in southern and western portions of the state. Illinois Pork Producers Association have their winter meeting and breakout sessions. IFCA has Keep it for our crop.

KIM KNOWLES: What is the service that talks about BMPs for the season?

LAUREN LURKINS: Council for Best Management Practices (CBMP).

BRIAN MILLER: So next we have a university report.

ANJANETTE RILEY: I'm going to talk about what the water center has been doing via communication. We announced the finalists for the "Water Is…" youth photo contest mostly on social media to garner public knowledge. Photos are available for all of us to use so contact me to get access to high resolution versions. Eliana and I are working on 2 videos. There is a video on bioreactors and a video for the point source community. We are working on implementation of the webpage to go on the website to discuss what everyone is doing to make it easier to show what all others are doing as a portal. We have SWAG that we have including NLRS bumper stickers and rain gages. So if you want any of this we can provide it for your audience.

BRIAN MILLER: For the NRLS, we have 5 different committees/working groups/forums and these are all of the meetings that have occurred thus far. Here are future meetings dates.

ELIANA BROWN: You were also provided a copy of future meeting dates.

BRIAN MILLER: The first group is the NMC and Gregg Good will report on what's been happening there.

GREGG GOOD: I'm a chair of the newly formed NMC. I work for IEPA and the first thing was to nail down exactly what we are supposed to be doing. We want to determine what is being exported out of the state. Then, what is being removed from priority watersheds, and lastly develop prioritized monitoring. So these are our charges.

KEVIN CULVER: Have you looked into what is coming into the state?

GREGG GOOD: No. I will show you our maps in a second. Doug Yeskis gave a talk on the new 8 superstation network. USGS has the contract and IEPA is funding this. With this network, we are covering 75% of the land network but it varies depending on rainfall, etc. There is some discussion about putting additional ones in to measure nutrients incoming and additional sampling. We have welders and here are the typical installations to get pH, conductivity, nitrate, phosphate, etc. to determine total phosphorus and predict those coming out of those stations. Every 15 minutes we are getting nitrate and phosphate every 2 hours. All are installed and having some difficulty at Vermillion site. So that's what we are doing at the statewide level. What about showing loads, trends, etc.? So where is monitoring going on in the state right now? So we generated some maps that show IEPA, USGS, Metropolitan Water Reclamation District of Greater Chicago, GREON, LTRMP, Riverwatch, Macroinvertebrates, Fish, etc. So also looking at aggregated maps to see what sampling looks like. So what is our next step? We should have watershed nutrient monitoring plans developed for each watershed. So we can get back to our goals? So where do we start? Let's look at the top 6. At the end of our meeting, we knew the AWQPF meeting was coming up and we wanted their opinions and they picked their top 8. So there is some overlap between the 2. 4 other states and Illinois did and updated monitoring for the Mississippi River and what are the monitoring designs to answer questions? And who will do this and what is the timeline? Who develops these plans? How do we assess data once we receive it? At the next meeting, we will go over charges, and are developing more watershed maps, Cindy might give a talk, and there will be a GREON demonstration with Jong Lee. The next meeting is December 3.

KAY ANDERSON: USGS data, is it available on USGS website?

PAUL TERRIO: In general, yes it is. If there are questions about the data, then sometimes it is not there. But most recent data may be provisional.

BRIAN MILLER: Next the Agricultural Water Quality Partnership Forum (AWQPF). Warren?

WARREN GOETSCH: We have had 2 meetings so far and decided that our GIS people needed a subgroup, so we had 2 technical subgroup meetings as well. Many things are going on with the agricultural community and one of our biggest charges is to herd chickens. The charge is to steer and coordinate to avoid duplications. The charge is to identify holes or improve focus and try to keep track of management practice implementation. We have to have a way of demonstrating progress. Hopefully we can make sure to focus state resources as well as federal partners to get the most for our buck and look for

potential for other tools such as a certification program to use in the future. Lauren summarized well, the roadshows enhanced awareness and moving to BMP adoption, CBMP hired a PR management firm. Nutrient Research Education Council is developing a hypoxia action plan to refocus existing plans and identify gaps. One gap we know about is absentee and female land owners.

ALBERT ETTINGER: Do you talk to women differently from men?

WARREN GOETSCH: There may be a case where women have inherited land and may not know about the nutrient issue as opposed to a land manager which is traditionally male. It's important to get the attention of farm manager to see an increase in adoption of BMPs.

We had 2 meetings. In our August meeting, we had Dr. Lawrence from Iowa State University talk about their measurement metrics for success. They create awareness, attitude adjustment, adoption of practices and improved water quality. So you start with human interaction and get to improved water quality. There is an incredible amount of data out there so how can we possibly mine and massage that data to where we can actually use that data. We looked at where data might be currently housed to get a better handle on the adoption rates of various processes. For some types of land, we may already have data, but how can we mine that data? We did the same thing for water and punted most of things towards NMC. An issue was the base date. When is the recent data useable etc. The base date of 2011 +/- 2 years would be an appropriate year for adoption of base year. Next steps are to discuss the priority watersheds in more detail and work toward selection. IEPA has employed a contractual worker, Shawn Wilcockson, and tasked him to put together a voluntary listing of programs in priority watersheds. Finally – we have upcoming meetings set in the DOA facility in Springfield.

BRIAN MILLER: Next up is urban storm water working group with Amy.

AMY WALKENBACH: These are the charges to the committee, we have some new storm water folks, funding opportunities, and are working on outreach and education things as well. The big thing has been trying to increase our working committee. A lot of people we are targeting are municipality type people. We have a slew of new folks on the committee and represent a bunch of different types of municipalities/organizations. Our next meetings are set, and were initially supposed to meet once a year, but doesn't allow for a lot to get done. The sector and the working group need to be more coordinated. There will be 3 calls with 1 face to face meeting. With new folks, we will have that face to face meeting earlier in the year. If you want to participate, feel free to contact me.

ALEC DAVIS: Are you reaching out to private landowners, realtor associations, or private property owners?

AMY WALKENBACH: Not recently, but we reached out to realtors association and association for homeowners. If we have a way to bring them into the table, we would like to hear it.

BRIAN MILLER: Next up is the point source working group, Marcia?

MARCIA WILLHITE: We have not met once yet, but we will need to work through conversations going on now. I will commit to working toward point source committee.

BRIAN MILLER: Next is the performance benchmark committee, Cindy?

CINDY SKRUKRUD: We need 45% reduction in phosphorus in removed from state. 2025 milestone but need benchmarks to reach targets. People have volunteered to be on the committee. We are looking to hold a meeting in January. IDA and IEPA will be involved. What is our starting baseline recommendation, apparently 2011, thank you Warren. We want the benchmarks vetted in reality. We need to be aware it takes time for these practices to be adopted. Benchmarks can certainly be adapted as we go along, or rate of adoption of certain practices. We need benchmark metrics, numeric benchmarks is easy for point sources, so who will compile that information. We can certainly do estimates from agricultural practices on the ground. We can have what is the adoption of practices and how much are people engaged in this issue. And talk about targeted watersheds vs. statewide outreach. We need balance to reach ultimate reeducation goals at the statewide level.

LAUREN LURKINS: Question for Warren, what do you think estimated time is on the survey?

WARREN GOETSCH: Several agricultural organizations have stepped up to commit dollars to fund the survey. The timeline is run by that. A certain portion of money needs spent by the end of the year. My hope is to get a document before the end of the year and have it out by winter when they would actually respond. It would be good to have it out this winter. I received copies of surveys from other states and Mark Schleusener has been helping, and he's doing field testing, but my plan is to get something out this winter.

BRIAN MILLER: Warren talked about baseline year as well as Cindy. The last PWG meeting, we posed a question of what is the baseline. 2011 was the result. Do we have implementation to support that? Yes, it was reasonable +/- 1 or 2 years, and 2011 was a reasonable baseline. That's the recommendation and we were asked to bring it all back to you all. Any concerns?

ALEC DAVIS: Talking about achieving a goal, why aren't we looking at the same baseline as the strategy's goal? Have we talked about the same number? What about 1980-1996 for a time period?

MARCIA WILLHITE: I think that is what we will be doing. But we are looking at from what year will be using for implementation of the strategy. We are putting the baseline year for our loading target is consistent with other states. For measuring implementation, 2011-end year for science assessment.

WARREN GOETSCH: Mark David had to look at other datasets from science assessment and that uncertainty is included in the numbers to begin with. The most reasonable was 2011. There is a wide range of datasets. Mark David was using what is available.

ALEC DAVIS: From the 1996 threshold, in using 2011, we will lose a lot there. I see potential that something will be there not accounted for. Again, I know less about agricultural sector.

MARCIA WILLHITE: By comparison, the point source side, the hypoxia task force has put together a task force to measure progress from starting where. And they are looking at the 1990s for measuring implementation. Point source groups have implementation of programs all over the board. If we are missing a decade of implementation, then we should talk more.

ALEC DAVIS: How do we know we will meet our goal hitting this implementation target?

MARCIA WILLHITE: Cindy's group, what are we going to measure, and then set interim goals to measure if we are on track to meet that goal. From the point source side, what will measures be? Pounds reduced? Implementation of BMP? We haven't had that conversation.

BRIAN MILLER: The science assessment decided what loading was as of 2011. The strategy went in place in 2015 and we need to report in 2 years what our progress is.

ALBERT COX: We had previous discussions on this. Progress will be measured based on 5 year averages, therefore , you need to have a starting year for measuring progress which in not necessarily the baseline year identified in the Gulf Hypoxia Plan. If our baseline year for measurement is 2011 our first measurement will cover 2011-2016, that will be my understanding.

BREAK

BRIAN MILLER: At the last PWG meeting, we were going to select a NSAC. You will have the opportunity to talk with the NSAC and what it means for various sectors. So please let the NSAC know of data sets and available resources. Newly formed NSAC and agreed to come to the meeting. So first we should do introductions. So remind everyone who you are and what you do.

Doug McLaughlin: I've been a principal research scientist for 12 years in water resources related research for 30 years. In the last few years, I've been looking at approaches for developing numeric criteria, statistical methods, ways to convert data, and decision making data. How is decision making impacted? I served on EPA science advisory board committees, and looked at nutrient concentrations as stressors and biological responses. Draft guidance for conductivity. I'm interested in link between science and decision making.

Candace Bauer: I work for the USEPA Region 5, and have worked with all states developing in nutrient criteria data. I have designed initial studies in collecting and analyze data. I'm an aquatic ecologist in training and have worked with water quality standards.

Walter Hill: I'm retired but worked for the Illinois Natural History Survey (INHS) and worked at the National lab and looked at nutrients as part of the Seafare study. We looked as nutrient concentrations and responses of algae and looked at Kickapoo creek at the Bloomington treatment plant and also did lab stream experiments that looked at algal growth.

Paul Terrio: I have worked for USGS for 30 years in Illinois. I have participated in water quality related studies related to nutrients and sediment. Nutrient standards are not new to me for 10 years. I have worked with IEPA to develop nutrient standards.

Todd Royer: I work at Indiana University and was part of the CFAR studies and at U of I, I worked with Mark David. I did work with the statewide measurements that were made and have that data set to work with. I looked at nitrogen and phosphorus cycling in streams/rivers and nitrogen transport. I have lots of interest in water quality and nutrient standards.

Matt Whiles: I work at SIU in ecology. I was involved in CFAR and was the token invertebrate guy. I work with stream invertebrates and amphibians, responses to stressors, biodiversity and ecosystem function from sites here in Illinois all the way to Brazil.

BRIAN MILLER: Remind NSAC what the charge is:

MARCIA WILLHITE: Determine numeric criteria for nutrients most appropriate for Illinois waterbodies based on science available and to consider whether the standard should be statewide or watershed specific. We also wanted to remind the group that we would get a recommendation on standards from the NSAC. We are interested in how these standards get implemented. Implementation plan would be well discussed. We want to have information coming and going on a regular basis to where they are in their work.

THOMAS GRANATO: For the first 2 points on committee charge, there is a potential that they may not be able to develop a numerical standard. Is part of the charge to come up with standard irregardless of he data gaps?

MARCIA WILLHITE: In reviewing information available, if they identified gaps, that would be what they report out to us.

ALEC DAVIS: So is the scope is to look at existing studies?

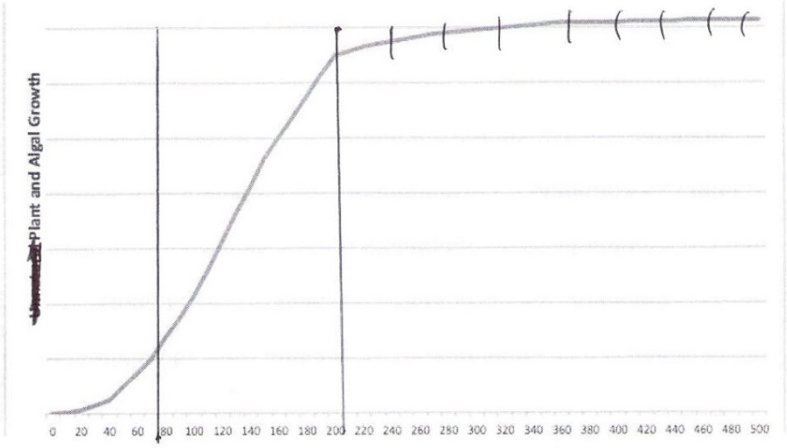
MARCIA WILLHITE: That's the start. If panel identifies gaps, we need to consider that observation.

BRIAN MILLER: Next we have an address from 3 of the sectors from the gracious volunteers to give presentations.

ALBERT ETTINGER: I have a few points to make here. I am a lawyer, not a scientist, but I have read a lot of papers and worked with experts on nutrient pollution. I want to talk about the criteria selection process as a matter of law and policy. I enjoy working with scientists. They always want more data, but sometimes we need decisions now, a policy decision. Water quality standards are inexact. Many people have contrasted criteria for toxins with those for nutrients and act as if toxic standards are very hard and exact while nutrient standards are soft and unscientific. But for toxic standards the concentration is set for an acute standard by using half of 50% of the concentration at which half of bugs die. All standards must protect the most sensitive use, often the aquatic life use, but the most sensitive use may be recreation in some cases. When we look at statewide standards, we will have to protect the most sensitive use in the whole state. Economic considerations are of no consequence at all for setting criteria. Economic considerations are taken account of in other parts of the regulatory process. There is some natural level of phosphorus and a natural level of plant and algal growth that goes with that. But if phosphorus pollution is added, unnatural growth results until at some point adding phosphorus ceases to matter anymore because phosphorus has ceased to be limiting. In most cases in Illinois streams, there is no scientific correlation between the level of phosphorus and plant or algal growth because the levels are far too high and one is just comparing differing levels of way too much phosphorus. You need to get phosphorus down to where it matters and then you will see correlative differences. Because most

Illinois waters are way over the level at which phosphorus is limiting algal growth, the NSAC will need to look rivers and streams in other states where differing levels of phosphorus can be seen to matter. In setting criteria, Wisconsin differentiated between rivers and streams. Minnesota and Florida broke their states down to ecoregions and set separate criteria for each region. The last thing is that we recognize that restoring Illinois waters is that this is going to take some time. The NSAC needs to set targets based on what proper levels should be even if Illinois rivers and streams are generally way over those levels now. Then all of the stakeholders will have to look at implementation and how to get down to those levels and, at that point, economic considerations can be taken into account.

(Ettinger presented the following graph)



ALEC DAVIS: What is the vertical axis on your graph?

ALBERT ETTINGER: Phosphorus is x, chlorophyll a is y (or any measure of plant or algal grown). The first line from the left is the natural level, the second line is where phosphorus stops being limiting and adding more phosphorus doesn't matter to growth.

BRIAN MILLER: Next we will hear from the point source perspective, Nick Menninga.

NICK MENNINGA: I'm the general manager of Downers Grove sanitary district representing point source. IAWA is the voice of wastewater agencies in Illinois. We are supportive of development of scientifically derived standards for specific streams. Specific streams might benefit from nutrient standards. The earlier CFAR process came close to formulating water quality standards amendments and then the gulf hypoxia emphasis became a priority. There are considerable uncertainties in hitting the right targets. Nutrient technology limits are expensive and range in costs. We understand additional greenhouse gas emissions will occur due to removal of nutrients, especially with chemical removal. Biological nutrient removal (BNR) plants, we feel, are more sustainable, less costly in the long run. Long term limits are necessary to make BNR possible. Any new nutrient regulation should show benefits in the streams, with clear cause of nutrients and an effect on aquatic life. Algal growth threshold in a laboratory seems overly simplistic and standards should be expressed so algal limits can be applied. We are interested in a holistic approach to nutrients, including wetland management, non-point source managements, etc.

ALBERT ETTINGER: A number as opposed to monthly or seasonal basis?

MARCIA WILLHITE: No form on what they must follow. The types of forms that are approvable by USEPA are best.

NICK MENNINGA: It helps to look at longer term averages, as opposed to monthly, weekly, daily average.

CANDICE BAUER: Which limits are most problematic?

NICK MENNINGA: The most problematic in order does daily, weekly, monthly, seasonally, etc.

WALTER HILL: How long is longer term?

NICK MENNINGA: Seasonal.

RICK MANNER: Make sure that it performs well all the time. You still have to perform – regardless of rainfall, etc. With short term limits, extreme weather events cause great problems. Streets flood and we still have to manage that increase in flow.

NICK MENNINGA: You are mostly looking at the biology. What is the length of time phosphorus or algae does have an impact on the stream, so consider that it's important to us.

ALBERT ETTINGER: We all agree; it's not a toxin. We realize with nutrients, it's a different story. What a reasonable averaging time from a biologic point of view versus a wastewater point of view.

BRIAN MILLER: Next the agricultural group, Lauren?

LAUREN LURKINS: My background is in environmental law and we are focused on practical application and the practical aspects picking the right numbers and implementation. Farmers have to respond to inputs and then sell. How do you wrap your arms around what happens. The financial aspect of how people comply with standards cannot be underestimated. A number that is chosen should be achieved for point and non-point sources and makes sense from an economic standpoint. One number statewide would not be achievable, so either on different waterbodies or watershed approach. Farmers love the local aspect of things.

KIM KNOWLES: How does water quality standard impact farming?

LAUREN LURKINS: TMDLS can change, it doesn't impact us right now, but we are concerned.

JEAN PAYNE: We apply nitrogen and phosphorus to produce crops. If we knew the rain, we could apply perfectly. We are trying to manage and match without excess of application, but can't tell weather patterns. Weather has 95% of an impact on us and what we do depends on weather.

ALBERT ETTINGER: Is there a link between agriculture and water quality standards. How do criteria impact the design of BMPs for agriculture? Is there a link?

KIM KNOWLES: I don't see the link.

ALBERT ETTINGER: Criteria will not directly affect agriculture. I'm not disagreeing with Lauren. As of right now, there is no link and there is a lot of implementation that will go after you select the number. You are biologists, not agriculture or economists. So for here, we are looking for a number that protects waters.

MARCIA WILLHITE: In the regulatory scheme of identifying impaired waters in developing TMDL is identifying the target. So the water quality standard is the target for the model. There is an allocated load for point source and non-point source so management for BMPs is when non-point source allocation is understood. If you know that for your watershed, you have to reduce nitrogen by 50%, it represents how many pounds needs to be reduced. So that's maybe the link.

ALBERT ETTINGER: The thing is that we can't enforce it.

MARCIA WILLHITE: These are voluntary actions. Not a piece in regulatory scheme.

ALEC DAVIS: Except for point sources that are harmed.

MARCIA WILLHITE: We don't rescale point sources to satisfy non-point source deficits.

WARREN GOETSCH: This is assuming that agriculture is not doing fair share vs. doing more than their fair share.

KAY ANDERSON: What is the plan for interfacing going forward at each meeting?

MARCIA WILLHITE: We will update periodically with the NSAC and will update each PWG.

BRIAN MILLER: There will be times when they want input, invite outside speakers, etc. The hope is that there will be regular interaction.

KAY ANDERSON: They will be accepting data for review?

BRIAN MILLER: Some sectors may have reports on data and want a vehicle to make it available for use if they choose to use it.

KAY ANDERSON: What is the mechanism for providing data?

MARCIA WILLHITE: Do folks have data? In general? Can they send data to the IWRC or IEPA?

BRIAN MILLER: In qualitative terms we can make that available?

KAY ANDERSON: Will we know in advance what the most critical studies that you are relying on? A bibliography that they can share it with us?

THOMAS GRANATO: Data that is not published? Gray data?

BRIAN MILLER: Yes, a data set or report that you might not have available and they can hear about it qualitatively. Send the data to Eliana.

TODD ROYER: Include QA/QC data with data to Eliana. Not all data sets are created equal.

BRIAN MILLER: Is it reasonable to make us aware of this in the next 30 days?

MARCIA WILLHITE: There is value in getting peer reviewed literature into the NSAC hands. PWG members really want to make them aware.

DOUG MCLAUGHLIN: There is lots of data that people are aware of within this room to put in front of the committee.

ELIANA BROWN: December 31st is deadline for data/papers to make NSAC aware.

BRIAN MILLER: Thank you all.