

Policy Working Group

Meeting Notes

Meeting 3: Mar 8, 2016 – Illinois EPA, Sangamo Room

1:00 – 4:00 pm

Conclusions and Next Steps

1 – 1:10 pm	Introductions
1:10 – 1:40 pm	<p>Implementation actions and initiatives by Sector – 5 minutes each</p> <p>Anjanette Riley (University) reiterated a plan that addresses updating and reporting needs. Working Group members should look for an email with instructions.</p> <p>Cindy Skrukud (Environmental Group) said that the Fox River Study Group is looking at nutrients in the Fox River. The conservation advisory committee recently has had an appellate court decision on what we are doing regarding nutrients. Others are working on outreach efforts including absentee landowners.</p> <p>Tom Granato (Point Source) spoke about P removal and indicated that as a sector it may be challenging to capture the information due to a lack of an organization which cover all point sources statewide.</p> <p>Jean Payne (Agriculture) covered the ag partner and CBMP outreach efforts.</p> <p>Drinking Water (Ted Meckes) reported that the Illinois Lakes Management Association Conference had talks on urban and agriculture.</p> <p>Hal Sprague (Stormwater) spoke about the stormwater quantity (Urban Flooding Awareness Act) and quality (green infrastructure) efforts.</p>
1:40 – 2:00 pm	<p>Nutrient Science Advisory Committee Update</p> <p>Candice Bauer, USEPA, provided information about data analysis and an upcoming workplan.</p>
2:00 – 2:40 pm	<p>Status of NLRs Implementation Workgroups, Forums, and Councils – 10 minutes each</p> <p>Nutrient Monitoring Council (Gregg Good): They are incorporating Fox R data in to Great Lakes to Gulf platform. They have monitoring throughout the state.</p> <p>Ag Water Quality Partnership Forum and Technical Subcommittee (Warren Goetsch): they continue to work on populating the Logic Model. A special NASS survey will be helpful to fill in information gaps.</p> <p>Urban Stormwater Working Group (Amy Walkenbach): Forming subcommittees focusing on education. Target audiences include government officials, practitioners, and general public.</p> <p>Benchmark Working Group (Cindy Skrukud) had their first meeting to think about steps to get Illinois to interim and final reduction targets.</p>
2:40 – 2:50 pm	Break
2:50 – 3:55 pm	<p>Identify adaptive management adjustments and update the strategy 45% nutrient reduction date</p> <p>The group decided to stay with interim goal and if there was a need to have an ultimate goal then it would be the gulf hypoxia task force year (2035).</p>

	<p>Explore funding strategies and innovative programs</p> <p>Guest Speaker Chuck Theilling, U.S. Army Corp of Engineers presented “Hydroponic nutrient reduction potential in levee management districts:— with implications for nutrient trading”. The group discussed trading programs and most agreed that they are tied nutrient criteria. They reiterated that they would like more information about the numeric nutrient criteria development.</p>
	<p>Next steps and future meeting topics</p> <ul style="list-style-type: none"> ➤ The Point Source Working Group may be the appropriate body for the sector to better address P removal across the state. ➤ NSAC will finalize their work plan and make it available to the PWG. They will discuss a plan for interaction with PWG. ➤ NMC will discuss if there is a need for additional monitoring (supergage) for flow coming into Illinois. ➤ Several PWG members provided several points of feedback which included: 1. a mechanism to add agenda items; 2. reduced time spent on updates during meetings; 3. an interaction strategy and workplan from NSAC. IWRC addressed these concerns in an email dated 3/18/16. This email also addressed 4. a need to reinvigorate the member list.

In attendance: Rick Manner, Urbana Champaign Sanitary District; Kay Anderson, American Bottoms Regional Wastewater Treatment Facility; Nick Menninga, Downers Grove Sanitary District; Albert Cox, 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; Antonette Palumbo, Illinois Environmental Regulatory Group; Tim Laatsch, GROWMARK; Dan Maggart, GROWMARK; Jennifer Tirey, Illinois Pork Producers Association; Lauren Lurkins, Illinois Farm Bureau; Jean Payne, Illinois Fertilizer and Chemical 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; Mark David, UIUC NRES; Albert Ettinger, Mississippi River Collaborative/Sierra Club; Kim Knowles, Prairie Rivers Network; Cindy Skrukurd, Sierra Club of Illinois; Amy Walkenbach, Illinois EPA; WARREN Goetsch, Illinois Department of Agriculture; Wade Conn, USDA-NRCS; Andrew Rehn, Prairie Rivers Network; Brian Miller, Illinois Water Resources Center; Eliana Brown, Illinois Water Resources Center; Katie Hollenbeck, Illinois Water Resources Center; Shawn Wilcoxson, Illinois EPA; Trevor Sample, Illinois EPA; Chuck Theilling, U.S. Army Corps of Engineers; Matt Larson, Carollo Engineers; Matt Short, Illinois EPA; Amy Roady, Illinois Soybean Association; Erika Powers, Barnes and Thornbury; Jeff Walk, The Nature Conservancy; Paul Davison, UIUC; Corey Mitchell, UIUC; Andrew Rehn, Prairie Rivers Network; Rodney Weinzierl, Illinois Corn Grower’s Association

Phone: Anjanette Riley, Illinois Water Resources Center; Kevin Culver, Aqua America; Candice Bauer, NSAC; Hal Sprague, Center for Neighborhood Technology in Chicago

Introductions

BRIAN MILLER: I wanted to start today by taking 5 minutes to do quick updates on each of the sectors.

ANJANETTE RILEY: For the University update, first is that everybody officially on the Policy Working Group should have received an email that gave updates on each sector. If you want to be added to the list, grab KH or EB and give them your email and I'll add it to list. At the top of that email I laid out a plan going forward. We have gone from a more freeform style to a more standardized approach to update the reporting process. There is an excel spreadsheet on the Policy Working Group and subgroups, not organized by sector, but by organization and it will be updated between March and May for updating and for reporting purposes. I can answer questions and you will be hearing from me. Also, IWRC is working with the Dean's Office at UIUC to set up a faculty briefing to give an opportunity to ACES researchers to learn about research and NLRs.

BRIAN MILLER: Did you all receive the update that AJR is talking about? Okay, we want to spend more time talking about policy. We wanted an environmental update, so next up is Cindy.

CINDY SKRUKRUD: You should have been given the update that the Fox River Study Group is looking at nutrients in the Fox River. The conservation advisory committee recently has had an appellate court decision on what we are doing regarding nutrients. Katrina Phillips has been working on a clean water toolkit. We have also been working on a no fertilizer pledge and expenditures for nutrient removal.

KIM KNOWLES: Prairie Rivers Network got a grant to do outreach to absentee land owners partnered with the Macon County Soil and Water Conservation District on NLRs practices. We got a grant for one time but maybe we will receive additional funding.

BRIAN MILLER: Point source update, Tom?

THOMAS GRANATO: In terms of point sources and how the sector is progressing on permits, the focus is on phosphorus in the state. We have a hard time doing it because there is no organization covering the sector. Maybe we will be talking to you from the perspective based on the absence of a statewide comprehensive sector. For the Metropolitan Water Reclamation District, a sector wide initiative kicked off during last 6 months. We completed another calendar year and implemented full scale phosphorus removal to 0.94 mg/l. In 2014 we did 0.987 mg/l. As matter of reference, 1.0 mg/l is the standard. We had about 4 months of challenge and primarily occurring the 2nd half of year of having enough of carbon enrichment to nourish the phosphorus removal process. We are trying to use internal carbon more effectively and we have initiate some studies looking at various types of carbon supplementation to process. The good news is that performance testing of the new phosphorous recovery system will begin in April. This recovery system will generate a slow release fertilizer and will help towards achieving the 1.0 mg/l monthly average. We are seeing a reduction relative to the baseline, not as much nutrient removal as we would see once we optimize the process. As we are working on removing nutrients from

wastewater stream, phosphorus is removed from the water and partitioned in the biosolids. We are developing BMPs for biosolids management to reduce loss of nutrients from biosolids applied to farmland.. We had a kickoff workshop and had good participation such as Peoria, Fox Metro, University of Illinois, Champaign-Urbana, etc. Albert followed that up by starting to formulate workgroups. It is voluntary, but we are hoping to have some recommendations to IEPA for biosolids nutrient management.

BRIAN MILLER: Question: do we need to get the sector together in absence of a larger body? Marcia couldn't be here today to give the point source working group update.

THOMAS GRANATO: What is the status of that group?

BRIAN MILLER: It hasn't met yet.

MARK DAVID: It's a one point in time of point source loads for most plants measuring phosphorus in major plants. Who will figure out the amount every year?

COREY MITCHELL: They collect that data.

AMY WALKENBACH: We have it, but where it sits, I'm not sure.

COREY MITCHELL: Every plant has own data set.

MARK DAVID: It needs to be a rigorous number; it is never really complete for Illinois. There are wildly inaccurate values.

COREY MITCHELL: But the question is how?

JEAN PAYNE:—The positive news is that in all the meetings we have had in the ag sector, we have yet to have a farmer react negatively to the strategy.—It's ingrained that this will impact the way we farm. In agriculture, it's difficult to move the needle initially. There is use of an nitrogen stabilizers and working with retailers we gave up an entire month of ammonia application waiting for soil temperatures to drop. But it doesn't always play out; warm wet fall will impact the conversion of ammonia to nitrate faster than we anticipated.—I know nitrate levels in the lakes at this point are higher than what we would like to see and IFCA launched a special spring nitrogen management program to take into account the potential for nitrogen loss. We are evaluating where we are with application and can make BMP improvements. The Water sampling testing kit has been very popular. They read about it and ask about it. Visit www.illinoiscbmp.org and you can see things going on in agriculture sector. NREC funded the site, as well as monitors on tiles to give us first window into reality when we have different timings of tile and helps us a lot to what we think it going on. We trained 400 ag retailers and CCAs for the new 4R certification will give them a credential designation and will continue to urge crop advisors to take the certification. Lake Vermilion struggles with nitrate levels and we asked the ag retailers to bring in triple super phosphate fertilizer to take some nitrogen out of the fall application system.—The retailers stocked it and sold all of it.—The farmers were very responsive to this.—We have seen demand for nitrogen stabilizer and feel really good about toughness of the message and ask what they need to be

doing. It doesn't happen overnight and work together to manage. We can do all the BMPs in the world, but when nature throws curveball, we need to deal. There is also a Soybean Association handout.

BRIAN MILLER: Next up is drinking water, Ted?

TED MECKES: Illinois Lakes Management Association Conference had talks on urban and agriculture. Illinois Water Works Association has 20 talks on urban and agriculture. The water industry needs help. We teamed up with Springfield CMP, SWCD, etc. We had a meeting in February that had 106 attendees and we are seeing people start to care and getting more nitrate levels up. Hopefully rainfall helps us, but education is the key for us and all of the entities that help get our word out. We don't want to say buy bottled water your water can kill your baby, etc. We are looking at urban issues, development, pavement, and keeping things out of lake that shouldn't be there.

BRIAN MILLER: Hal are you on the phone?

HAL SPRAGUE: I'm Hal Sprague, from the Center for Neighborhood Technology in Chicago. Storm water is broken into 2 basic missions: 1.) Reduce local flooding 2.) Pollution reduction. On the flooding side, there are lots of activities like the urban flooding awareness act. On the quality side, we are working on MS4s, working on consent decrees, working on private land and reporting on features put in of green infrastructure that reduces volume of runoff and improves quality.

BRIAN MILLER: Questions, no? Thanks Hal! Now Nutrient Science Advisory Committee update?

CANDICE BAUER: I am Candace Bauer and a part of the NSAC. I will go through an update and have time for people to ask questions. Thanks for this opportunity. We have been meeting and having phone calls since November and used the time to try to work through issues in hopes that we can put together a framework of moving forward. There is a good sense for what our plan is for moving forward. I will summarize the highlights. We have been taking a look at the info compiled in previous work on nutrient criteria development as well of work done in other states. They have put together new numeric nutrient criteria over past few years. Not just in region V, but across nation. What are types of criteria being developed? In light of existing guidance, we are looking at recent publications on streams and on using stressor response on nutrient and criteria development. We have worked toward pulling information together and with charge we have been given, so what are our next steps in rivers and streams nutrient criteria? We are trying to pull information together. On the next slide, we have been trying to focus on what data are available in Illinois and working with IEPA staff to understand database available and knowing additional data sources available out there as well. We are looking at data for nitrogen and phosphorus and information of algae as well as looking at habitat, macro and fish data available from EPA and DNR as well. We are hoping to pull together an updated dataset that includes 10 years of data that EPA has collected high quality dataset and working with IEPA staff to pull data together. One of the major steps working as NSAC is how we can use that data to inform what right nutrient dataset to establish criteria. We hope to update the dataset to look at data mid-2000 to 2015. IEPA will provide funding and do analysis to look at data to analyze and support nutrient data criteria. We will be working to provide framework of our work but will be working with USEPA contractors to look at what types of analysis we would like them to do. We are still at work plan formulation stage. We hope to get info to

contractors this summer and start getting initial results by fall. Those are the major updates, we will putting together conclusions and next steps at end of each meeting. We want all info and data in front of us moving forward. With that, the next meeting is in April to talk about work. Questions?

KAY ANDERSON: Question: about what kind of data analysis procedures are you talking about using N steps?

CANDICE BAUER: We are still evaluating what types of analysis we are going to do. We have a vehicle to the previous report by Tetra Tech. They will work with us to say these are what we have done with another state's similar data steps. This will be an example or published literature. Those would be ways to come up with analysis. The distribution of data is in the 25% percentile of phosphorus. Look at relationship between nitrogen and phosphorus and algae or biota. We will look at correlation and relationship where we see and use that to refine.

THOMAS GRANATO: When the process was initiated, in addition to monthly meetings, the plan was to also hold occasional public meetings. At what point do we envision when will public meetings be held?

CANDICE BAUER: We have been talking about that and haven't come to any specific conclusions. We want to put forward a framework, a conceptual model, to provide for feedback for.

BRIAN MILLER: They are working on plan of work. Once they have plan of work, it will be made available. When NSAC had something to present or speakers, or criteria from another state, we might want to invite speakers from other states.

CANDICE BAUER: There is no specific timeline or plan for that. Folks can submit suggestions to Brian Miller or Eliana Brown for the committee.

BRIAN MILLER: In one month, we will have a plan of work and as moving forward, there should be a meeting or two before we bring it back to group.

CANDICE BAUER: We want to see what dataset is and would like to have an initial set of analysis before it's finalized, but we haven't weighed in specifically and can see a fall timeframe for when is most helpful for additional dialogue to discuss that we could share.

THOMAS GRANATO: What is the overall timeframe?

BRIAN MILLER: 2 years.

CANDICE BAUER: We didn't get started until November. I can see taking until summer or winter 2017 as what we are pushing towards.

BRIAN MILLER: The next opportunity, anything to consider for the agenda?

LAUREN LURKINS: Stakeholders would like to be a fly on the wall. Would that be allowed? I would love that opportunity.

BRIAN MILLER: They are still trying to get organized. There may be a month after, for what datasets are available, with the timeline. At this point, they are still trying to put together specifics.

ALBERT COX: It is reasonable to wait for the work plan before submitting comments.

BRIAN MILLER: The next PWG meeting is August 30. Maybe if we can try to shoot for some time then?

CANDICE BAUER: I take that back. I'm not sure what products other than work plan would be available. It would certainly be helpful. Is there another PWG scheduled after Aug 30?

ELIANA BROWN: Not yet. It will be 4-6 months after Aug 30.

BRIAN MILLER: Any questions for Candice? If not, let's move forward. Let's move to reports from working committees. There are 7 working committees. We are meeting every 2 weeks, and of the 7 committees you will hear from 5 committees aggregated into 4 reports. Point Source Group will stand up soon. NMC is up first, Gregg?

NUTRIENT MONITORING COUNCIL UPDATE

GREGG GOOD: I am the chair of NMC. We've had 3 meetings so far. Our last meeting was December 3. I will reiterate the charge. 1a.) What's leaving state. 1b.) What's leaving priority watershed. 1c.) Trends and loads. We are aiming for 2 local water quality outcomes, happy bugs and fish and fewer standards violations. There is a statewide network of supergauge that takes the DO, phosphorus, etc. Ultimately, there are annual loading summaries on what's leaving the state.

LAUREN LURKINS: In our meeting on Saturday in Ogden County, that's when they asked what's coming into the state.

GREGG GOOD: Ideally it measures what's coming in on the Fox, but it's not a super duper one. It would be nice to have more of these out there.

LAUREN LURKINS: Farmers believe dirty water is coming from Wisconsin.

MARK DAVID: For the estimate for the Rock, do you take that part out? Can you do the loads and subtract out the Wisconsin part?

GREGG GOOD: There is a network of 146 monitoring stations. Matt, how many collected with USGS stations?

MATT SHORT: About 90.

CINDY SKRUKRUD: The discussion of Kankakee? It hasn't happened yet.

GREGG GOOD: We can talk about that in April. So that's the statewide network. We talked about developing watershed nutrient monitoring plans. 18-20 watersheds have been identified and came up with a list where we thought a lot of monitoring going on and the take home is that there is a lot of monitoring going on already. I presented at the AWQPF meeting and some implementation was being

done, by no means is NMC wed to those 6 watersheds. All goes to show through monitoring. We want to go where there is the most money, outreach and education, and BMPs. Hopefully we will get guidance on that. Who develops the monitoring plans? Is there a budget, retrieve aggregate, etc.? How to assess trends, etc.? There are lots of questions to explore. The next meeting is April 5. We talked with Jong Lee and he has GREON data and the data that is available for the Fox. The most recent thing is data criteria and what collection data are we looking for. The next meeting is April 5.

KIM KNOWLES: During presentations, if questions come up, where do we do that?

GREGG GOOD: NMC needs input from everyone. So far, we only talked to AWQPF. For some watersheds, we want to know where money is spent and where implementation is going to show through monitoring that we are doing some good. At individual watersheds, we want to know what is going right now.

BRIAN MILLER: How to get input from group? When we are meeting, we discussed that question in terms of BMPs and trying to look where that intersected with monitoring. The first time we brought it up at AWQPF, the committee wanted to think about it. Amy presented data on watersheds. We still didn't get to final decisions. Drinking water reservoirs in terms of BMPs and monitoring. Those are KIC watersheds outlined in red. The questions becomes, if we are gonna pick at one or two more, it depends on who we ask and when?

KIM KNOWLES: I would like to create spaces where we are working and not reporting. Before the meeting, we can add items to the agenda; we shouldn't have 3 committee meetings before. At the last agriculture meeting, first time issues were presented to group. Whether or not they were presented before, there's not a space to grapple and discuss issues. People can come prepared to do that.

LAUREN LURKINS: It is helpful to have something presented, but then think and discuss at the next meeting. It takes a little bit of time to chew over and talk with the right people. Really, it's a question for the whole PWG, would you rather do it face to face or do something where we send it out to you? We can do it at the beginning of meeting or respond to something we send it out to you.

CINDY SKRUKRUD: It is helpful to send out in advance and then allow discussion at the meeting.

RODNEY WEINZIERL: You'd have to send it out. If we are deploying resources in one watershed, it is hard to pull out and shift to another.

BRIAN MILLER: Out on the edges where everyone working somewhere, not everyone working there. How to get input?

ALEC DAVIS: If I send it out, if you talk me through it, I can come back with more meaningful input.

KIM KNOWLES: We can hash it out and make decision.

BRIAN MILLER: We have the synthesis maps and all the 319 maps. We will figure it out.

KIM KNOWLES: This is just one question. Absentee land owners, the strategy for that, what is it?

BRIAN MILLER: Do you see that as whole PWG or AWQPF meeting issue?

KIM KNOWLES: A sector meeting. I would like to turn this into a working meeting too.

AWQPF UPDATE

WARREN GOETSCH: 2 things. 1.) I have copies of the strategy. 2.) I want to report on activities of AWQPF. We created a technical subgroup to focus on data available with fed or state agencies. The charge is to steer and coordinate outreach and education. Agricultural groups have been incredible and all been active. Jean just barely scratched the surface. Farm groups have done incredible job in terms of outreach and education. We have been charged with looking at ways to track BMP implementation, cost sharing and targeting, and other tools. The issue of absentee land owners was discussed. We also talked about farm managers and rural appraisers. American Farmland Trust and Prairie Rivers Network are working in terms of getting the message out to absentee landowners. The tech subgroup met and has representatives with ideas to look at the data sources organizations have to match with practices. We have the potential to fill in holes. We also discussed issues of base date. We looked at the Iowa logic model. John Lawrence came from Iowa State and discussed their logic model looked at outputs and outcomes. For inputs and human measures table, I don't know enough about CBMP conservation story map but it has a positive story to tell in BMP adoption in outreach and education. We look to the NMC to fill in the water measures table. The spreadsheet was an attempt to answer land measures questions. I mentioned the NASS survey. It will be mailed out in July, with a second mailing date of 1st of August. There were limited phone interviews and we have results. We hope to allow answering questions of adoption rate in 2011 and 2015 and repeating similar survey every 2 years to incorporate into biannual reporting in association with NLRs. We looked at water table management as an additional practice, perhaps others might incorporate those into the strategy. We are working on the table, while is too difficult to read in current form and includes practice, units, who provides the info, etc. We also talked about the priority watershed map and looked at where the highest percentage of management options will be. We are trying to look at places where our success/lack of success is occurring. Also, the next step is targeting, the state tech committee, working with NRCS. There are limitations in federal farm bureau program. The state tech nutrient subcommittee is March 15.

URBAN STORMWATER WORKING GROUP UPDATE

AMY WALKENBACH: So far we have had 2 meetings of Stormwater Working Group. There was new attention of people coming to meeting, worked on reaching out for more robust committee. We tried to reach out to municipalities impacted by stormwater and public works folks, not just water quality, but for flooding issues. Folks dealing with this in not just dealing with flooding but other issues, so it is hard to get them to attend meetings. We are reaching out to other types of folks. Our 2nd meeting was in December, a conference call. We stepped back from stuff we wanted to talk about and revisited strategy development, etc. because of structure, not all of it was accomplished but we did get more people

interested in stormwater. We talked about the reissued MS4 permits. How can they be used to reach NLRS goals? We talked about the gap in outreach program, education, and outreach type things. How to educate at all levels and along with that, how to pay for those programs? We talked about some subcommittee meetings. Financial, education and outreach, legislation and talked about legislation is a low priority. Not all depends on legislation at this point. We are looking at outreach and education as a big priority. We are working with Rick Winkel with PRI and working out developing a plan to present to the committee to educate decision makers and thinking public works folks don't have support of their leaders so that's where the focus is on activities. We have a face to face meeting in April. Furthermore, if anyone interested in listening or participating, check out the website.

BRIAN MILLER: Cindy, the Benchmark Working Group?

PERFORMANCE BENCHMARK WORKING GROUP UPDATE

CINDY SKRUKRUD: The Benchmark Working Group has gotten together to think about steps to get Illinois to interim and final reduction targets. We have had 1 meeting so far. We haven't adopted a scenario; we really need a roadmap with 5 year interval of where to go to where we want to be. IFB hosted us, with participation from various sectors, wastewater, urban and environmental sectors. We talked more about agricultural issues since a lot more folks. What we ended up happening was a freeform discussion. It was a very initial discussion. Sector subcommittees are providing input to what benchmarks are. It's important that the PWG weigh in on this. What the Agricultural Working Group is tackling. The benchmarks to interim targets and 45% reduction targets. Indicators on improving water quality. Outreach metrics should be part of plan to get word out to folks. The NASS survey is very important to get the info back to set agriculture BMPs. We had discussions about target BMPs for the state. The on the ground situation is different in different parts of states. Urban communities can be reporting in annual reporting as required by annual municipal storm water permits. Mark Henson would throw out a strawman to address nonpoint agricultural source program. Next thing is to get together and respond to that. Albert Ettinger to track programs and funding, follow Iowa model, track out, facilities and land, practices implemented, measure discharge and load reduction. We need to answer the hanging question from the earlier discussion. It's on me to schedule the next meeting and always be conscious of the discussion going on. Eliana Brown tracked down the hypoxia task force to congress report. You all have my contact info. Lauren and Kim for outreach information. We would like feedback from PWG, how far to proceed with discussion at subcommittee level before asking for feedback from PWG?

WARREN GOETSCH: One criticism is too many meetings and too many committees and I understand and no more meetings but if no other reason, keep this topic out in front and continue to raise awareness. There is potential for significant redundancies and consider if we can incorporate instead of separate one, some issues are unique to some sectors. A dozen of benchmark discussions with half people not having a direct interest.

CINDY SKRUKRUD: It makes sense for wastewater and urban to continue with it. We will have to wait till we have survey done until we set benchmarks.

BRIAN MILLER: Also, initially NLRS had 4 committees and some committees won't be around forever since some will complete a task. The Benchmark Committee gets input and broad stakeholder. There is a big flurry of activity. Hope is that it is something we can begin to phase out. Get with us and put it on the table.

CINDY SKRUKRUD: The value of pulling together Benchmark Committee will develop steps to achieve goals. Nag to other sectors to put together plans. Integrated plan of reduction is seeking all sectors.

BREAK

BRIAN MILLER: What we usually do is remind us all what the charges are in the strategy. For the PWG, we want to explore funding opportunities, network with appropriate people and groups, adjustments and update strategy. We are starting to move to new things, start thinking ahead to new and innovative ideas. One issue still out there is in the NLRS did not identify the target year for 45% nutrient reduction. Do we want to name a year?

WARREN GOETSCH: Benchmarking Group asked if there was a date we should be shooting for. The revised goal? Update action plan to 2035. Over 140 comments, there was a 2040 number thrown out, do we really need one at all? The basin wide strategy did adopt 2035.

BRIAN MILLER: What is the temperature of the group on what we want to do on this one?

CINDY SKRUKRUD: 2035 is consistent with the gulf hypoxia task force. There are lots of comments on the strategy that suggested 2040. We at least need target to shoot at. Are we on track? Do we need to accelerate efforts?

RICK MANNER: Is there a summarization on the commenter's reasons?

CINDY SKRUKRUD: We weren't aware of 2035 number and thought 2015 + 25 years is 2040.

MARK DAVID: All comments came in before, so no one knew about 2035.

LAUREN LURKINS: Rodney's retirement date. We're aware that the gulf hypoxia task force looked at things we aren't looking at, and continue to be looking at the changes. In agriculture, we are focused on 10 year timeframe. Before Rodney retires, where are we? Are we more concerned on the 10 year, by 2025, 15% nitrogen, 25% phosphorus reductions?

BRIAN MILLER: So the interim benchmark, do you want something that stays consistent?

LAUREN LURKINS: We have to talk about it meetings to farmers and have to make to 45%. We are concerned about the 10 year, that's our focus. Talk past retirement dates, potentially lose momentum. It's a nonissue for me, even if we have one.

WARREN GOETSCH: It probably doesn't mean a whole lot. It suggests the benchmark thing so important. The interim goal made a lot of sense and that where we need to keep focus.

DICK LYONS: The average age of a farmer is 50. They can focus on that goal, but if goal is way out there, they will look past it.

ALBERT ETTINGER: The interim goal more important. I don't know why we wouldn't use gulf hypoxia task force.

ALEC DAVIS: What are other states doing?

WARREN GOETSCH: Minnesota is consistent with the gulf hypoxia task force. I can't remember for Indiana.

LAUREN LURKINS: We are setting ourselves apart by having an interim for a state.

BRIAN MILLER: So stay with interim goal and if we had to have an ultimate goal we'll go with the gulf hypoxia task force year. One other thing is to stretch ourselves and think of new opportunities. Chuck Theiling is developing an innovative idea. He had 15 years in Army Corps of Engineers and started in Havana, 5 years with natural History Survey.

CHUCK THEILING: I've had some support with the Army Corps of Engineers, but have a personal interest with support from the Corps. I'm a regional technical specialist, in ecological modeling, a systems approach; promote water resources management that fit the upper Mississippi river system. Watershed feed down to the ocean, but floodplains have been excluded from the river networks. The ecological role of floodplain is no longer there. So I'll talk about the setting, a couple of conceptual models, and about about ecosystems service. Christine Todd Whitman announced nutrient credit trading policy in 2003. Drainage districts can help achieve nutrient reduction if supported by nutrient trading. I discuss the area between Grafton and Peoria where there is a large increase in nitrogen in river water.

Each levee and drainage district is a separate entity and has been working for ~100 years. Tributaries flow between each levee district but the floodplain is excluded. River habitats remaining between the levees and connected to the river are degraded and floodplains are drained and developed for crops.

Drainage district infrastructure can be used to sequester nutrients using hydroponic nutrient abatement – floating treatment wetlands, algal turf scrubbers. Emergent wetland plants on rafts with roots that go down into contaminated water. There are several different styles commercially available, Beemats are very thin and planted in cups and you use plants for feed or mulch to capture nutrients. Focus on nutrient reductions in our work. Algal turf scrubbers are another alternative, they grow blue-green turf algae which is different than engineered planktonic “super algae” grown in lab settings. This is a mat algae, all you have to do is scoop it up. Research shows productivity is greater than that of corn and functions across a range of temperatures. A \$400K New York demonstration, proposed fuel, feed, fertilizer, and pharmaceutical products in a There are a lot of ways to chain products, you can get methane or carbon to supplement algal growth from an anaerobic digester with no waste products.

There is too much “waste water” going downstream, we need economical ways to harvest it. The National Research Council considered algae production limiting factors, and floodplain nutrient farming

overcomes them.—The National Research Council looked at turf scrubbers. Large amount of water required, land area, nutrients, all not an issue in Midwest.

We scoped the concept for the floodplain confluence of the Fabius River.—The HUC-8 subwatershed is channelized so the whole drainage district has no interior drainage. About 30,000 acres total isolated by levees in several separate drainage districts separated by tributaries. There are many miles of ditches where I want to get in and work, and the other uses in the area influence opportunities to do work. We can put floating islands in ditches and algal turf scrubbers would require—only 10ft along ditches. It is possible to integrate phytoremediation methods using Raceways, polyculture, algal turfscrubbers, etc. A feasibility study identified benefits including TMDL credit as a tributary interceptor or for the mainstem. Theoretically, send nutrient credits throughout the Mississippi Basin.

Farmers might give up a section of corn for economical beneficial purpose, nutrient credit training. Schematic shows current regulatory system. Need to control reductions and get whatever cost it is. Conversely if you put in nutrient trading option, go for total load reduction by basin and achieve nutrient trading least cost solution. BMPs, agricultural sources can provide enhanced nutrient reduction options. A trading region would come out with lower cost nutrient reduction option at the bottom. This increases the inventory of nutrient reduction projects without giving up agriculture.— It also puts more “currency” into nutrient credit market. We can look at risk informed decision making, adaptive management and science, innovative financing. Watershed based budgeting, establishing limits and operating as a community. With more CRP or CREP, there’s more nutrient reduction. A Corps of Engineers report and manuscript on this topic look at potential denitrification rates. I can take questions.

JEAN PAYNE: Growing time?

MARK DAVID: January-June.

JEAN PAYNE: Is it warm enough?

CHUCK THEILING: We use hoop houses, drainage ditches, temperature dependent, algae and microbes operate earlier than the plants.

JEAN PAYNE: If a hot spell and dries up, will they die?

CHUCK THEILING: We are looking at mainstreams and drainage districts with permanent water, a dependable water supply. Bioswales in a ditch are dormant when dry. They would respond quicker than a plant.

COREY MITCHELL: Nutrients removal?

CHUCK THEILING: There is no way to remove enough nutrients. The question is how to express these numbers to normal people.

RICK MANNER: Matting algae? Nonnative?

CHUCK THEILING: Native stock, what comes in when comes on. Good diatom mix goes to biodiesel very quick. We dredge huge piles of sand, it makes useful soil amendment product.

KIM KNOWLES: Contact information?

RICK MANNER: Blening, tried or just talking?

CHUCK THEILING: Corps of Engineers looking for beneficial uses, but that's more Department of Energy. Pull off diesel from diatoms and our nitrogen products, to potentially get useful product out of each part.

BRIAN MILLER: We looked at other options, moist soil management.

CHUCK THEILING: Using drainage ditch as detention basin. With infrastructure out, it models out okay.

BRIAN MILLER: Innovative ideas going on in the district. Thanks Chuck. This sets up dialogue. As we were developing NLRS, where to get money for BMPs. Consider trading program options. At the time, there wasn't enough to put in strategy. Since that time, we can consider the number of trading. Marcia asked that we bring it back to PWG for a temperature reading. Is this something we want still on the table?

KAY ANDERSON: The thing balancing with trading is gulf hypoxia. It's numerical with nutrient rule making establish what a local effect is.

ALBERT ETTINGER: I agree. People get excited about trading, until there is a number, and then it is hard to get anyone paid. As she said, local impacts are a big problem. For the Gulf of Mexico impact, theoretically you can hijack nutrients between here and New Orleans.

BRIAN MILLER: Until we hear about nutrient criteria, we cannot reach conclusion.

KAY ANDERSON: We won't be able to reach a conclusion.

ALBERT ETTINGER: Come about with nutrient criteria numbers, could result in a pollution control board proceeding and stakeholder discussion meeting. For a variety of reasons, I would like to see number produced before.

BRIAN MILLER: Prior to 2003, the number of prototype trading programs in US, most trading programs out there is experimental. It's a supply and demand problem, generally. There are lots of processes in place to develop these. These don't happen overnight. They can see the credit process and begin trading. Some ideas like Chuck has may be able to jump start the process.

ALBERT ETTINGER: Not categorically opposed to trading, dubiously broad in application or trading being good for. Not interested in getting through other portions, getting through and then beginning discussions.

BRIAN MILLER: Other comments on trading? Any other issues to get on the table? Or do background work on?

KIM KNOWLES: Can we follow up with you on email?

BRIAN MILLER: It is safer if you sent it to Eliana Brown.

CINDY SKRUKRUD: On the trading topic. It's a smaller scale of Chesapeake Bay in Illinois. Any discussion of trading within a watershed like Lake Springfield?

ALBERT ETTINGER: Not yet. All in favor of trading but have to decide to make more reductions someplace and less somewhere else. Some groups working off of a model like CO2 reduction is not going to work for water.

LAUREN LURKINS: We need to know where this is headed, we're not part of numeric standards, and we need to know more on the work of numeric standards. We're not inserting opinions or positions, just interested in being aware of what's being discussed. Anyone is welcome to listen to how I phrase these discussions to farmers. I'm a big process person, big effort. We like to tell farmers what's going on. All this big stuff is happening in a room with the door shut.

ANDREW REHN: When making group decisions, is there some sort of decision making structure that is important to implement?

BRIAN MILLER: Right now, let's keep focus on short term date, try to get consensus when we can. If there needs to be something more, how do we consider it from an agency perspective?

WARREN GOETSCH: In the survey, what we tried to do was to see what the consensus was, trying to weight that. Put the document out for comment and come out with compromise. Not appear democracy, trying to get consensus of all groups.

BRIAN MILLER: Great, so we are finished right at 4:00 and thank you for hard work. Thank you.