NLRS Workshop

Nov. 13th, 2018
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University of Illinois at Urbana-Champaign

SUMMARY AND NEXT STEPS

Opening Plenary

Welcome – *George Czapar, University of Illinois*

George Czapar welcomed everyone to the 2018 NLRS Workshop and gave a brief history of the work and partnerships that led up to the current Nutrient Loss Reduction Strategy, including the work done by CFAR and C-BMP. He praised the collaboration among NLRS partners and reminded us that it is necessary to work together if we are to reach our nutrient reduction goals.

SERA-46 Update – *Amanda Gumbert, University of Kentucky*

Amanda Gumbert described SERA-46, which is made up of two members of each land grant university in the Mississippi River Basin and whose goal is to promote effective implementation of science-based approaches to nutrient management and conservation that reduce nutrient losses to the environment. SERA-46 aims to assist in the optimization of cover crop practice performance, translate science in the tile drained areas into accessible information for states to adopt into policies, work in partnership with the American Society of Agronomy's Certified Crop Advisor (CCA) program, and create a network of watershed practitioners and farm leaders to strengthen the effectiveness of nutrient management strategies. After hosting a Watershed Leadership Summit in 2018, members recognized a need for a network of watershed leaders. The 2019 Watershed Leadership Summit will be held in Long Beach, Mississippi. SERA-46 is funded by USDA-NIFA funds, US EPA competitive funds, and the Walton Family Foundation. Valuable collaborations have been made with state and federal agencies represented by Hypoxia Task Force membership, farmer and farm advisors, state departments of agriculture, and other multi-state committees such as SERA-17 and NC-1190.

Working Group Breakout Sessions

Agriculture Water Quality Partnership Forum

Haley Haverback and Jennifer Woodyard updated the group on their role as Watershed Coordinators and encouraged partners to reach out if they want to collaborate. Laura Christianson and Reid Christianson described the Science Team's new process for adopting additional BMPs to the strategy. In preparation for the upcoming Biennial Report, Kate Gardiner reminded everyone to submit their Resources and Outreach spreadsheet and implementation data by December 31st, Warren Goetsch reminded NLRS partners to submit project updates, and Trevor Sample provided the report release schedule for 2019. The next Agriculture Water Quality Partnership Forum meeting will happen either April 23rd or April 30th, 2019.

Urban Stormwater Working Group

Mary Beth Falsey gave an update on the USWG Education and Tracking subgroups. Eliana Brown reviewed the last Biennial Report in preparation for the next report and reminded partners to get all resources and outreach information, implementation data, and partner project updates to Extension by December 31st. Lisa Merrifield described Extension's efforts to capture MS4 information. Reid Christianson updated the group on nutrient removal rate efficiencies. Given the geographical span of working group members, the next meeting will be the form of a conference call with a date to be determined.

Policy Working Group Meeting

Introductions

Nutrient Standards Update – *Sanjay Sofat, Illinois EPA*

The Nutrient Science Advisory Committee (NSAC) was tasked with providing a recommendation for nutrient standards for Illinois, via a scientific report to the Illinois EPA. Illinois EPA Bureau of Water Chief Sanjay Sofat described the official process after the Illinois EPA receives the report. They will open it up for review and comments. The next step is a 90-100 day public comment period. Afterward reviewing the comments, the Illinois EPA will decide next steps.

Working Group Updates

Agriculture Water Quality Partnership Forum – *Warren Goetsch, IDOA*

During the last meeting on March 12th, Elliot Lagacy gave a rundown of the Soil Transect Survey, Doug Bailey talked about FSA and cover crop reporting, and Trevor Sample of Illinois EPA talked about riparian buffers and filter strips as well as the project in Iowa, which takes students out to map the practices listed in their strategy. The group also discussed the need for a formal process for adding management practices to our suite of preferred practices in the strategy and Laura and Reid Christianson spoke on behalf of the Science Team. Bruce Henrikson presented on the STAR program, which came out of the Champaign County Soil and Water Conservation District as a way to recognize producers and a way to add value to the adoption of conservation practices and Mark Schleusener talked about the 2019 NASS Survey. Partner project updates, implementation data, and resource and outreach information will be included in the Biennial Report.

Urban Stormwater Working Group – *Mary Beth Falsey, DuPage County*

USWG had conference calls on May 14th and Aug 22nd and met in Chicago on Sept 26th. The introductory call in May established the education and tracking subgroups. In August, Tom Schueler of the Chesapeake Bay gave insight into how that area is handling stormwater BMP tracking and removal rates. In September, USWG met at the CMAP office in Chicago to discuss how DuPage County is tracking stormwater BMPs from Mary Beth Falsey and learn about the USGS Leaf Study from Roger Bannerman.

Performance Benchmark Committee – *Cindy Skrukrud, Sierra Club*

During the May 31st Policy Working Group meeting, it was determined that greater attention needs to be paid to meeting the NLRS goals. The Performance Benchmark Committee (PBC) met in August to develop a tracking framework and show a trajectory of projected outcomes for Illinois. PBC members provided suggestions for ways to reach NLRS goals, one of which was to add interim goals. The environmental groups and the Illinois EPA have agreed that unless a different number is developed

through local assessments, point source plants will meet a goal discharge limit of 0.5 mg/L. The greatest challenge remains the ability to track and project BMP adoption in Illinois.

Nutrient Monitoring Council – *Gregg Good, Illinois EPA*

At the last meeting in August, Trevor Sample updated members on the Watershed Coordinators and indicated there may be opportunities for future collaboration, Jong Lee updated members on the Great Lakes to Gulf Virtual Observatory, Kelly Warner updated members on the continuous groundwater monitoring in Havana, IL, Greg McIsaac described his newest research project, which will provide analysis and recommendations for phosphorus recovery and discharge reduction relevant to the Corn Belt region, and Paul Terrio and Tim Hodson explained the super gage results through water year 2017. There have been some changes in membership, Brian Metzke may replace Laura Keefer and there is an opening at the U.S. Army Corp of Engineers – Rock Island. The next Nutrient Monitoring Council meeting is scheduled for March 19th, 2019.

Farm Bill Update – *Jonathan Coppess, University of Illinois*

Jonathan Coppess explained that this Farm Bill comes in the midst of a political divide between urban and rural communities and partisan issues are leaving the Farm Bill stuck in stalemate. The Senate Farm Bill is mostly status quo, while the House Farm Bill has more controversial changes. Tensions have arisen between the Corn, Wheat, and Cotton Belts due to the unequal success of the Cotton Belt and a House Farm Bill more favorable to Cotton Belt conditions. The House Farm Bill aims to reduce funding for the SNAP Program, reduce the Conservation Reserve Program (CRP) acreage cap, and eliminate the Conservation Stewardship Program (CSP) while shifting funding into the Environmental Quality Incentives Program (EQIP). Jonathan speculated that Congress will try to reach an agreement before the House changes hands in January and new committees are formed.

Upcoming Biennial Report and Meetings

Biennial Report Outline and Release – *Trevor Sample, Illinois EPA*

All spreadsheets, implementation data, and partner project updates are due to Illinois Extension by December 31st. The first draft of the Biennial Report will come to the Policy Working Group at the end of May with comments due to Extension in June. By July, the second draft will go to the Steering Committee and Agency Directors. Final comments will then be incorporated and the report will be released for the Farm Progress Show in August, 2019.

Science Assessment Update Plan – *Greg McIsaac, University of Illinois*

The Nitrate and Total Phosphorus river loads will be based on the eight major river systems and calculated through the 2017 water year. The new HUC 8 analysis will report Nitrate and Total Phosphorus yields averaged over two periods: 2012 – 2017 and 2009 – 2017. The draft report will go to the Illinois EPA by mid-February of 2019.

Proposed 2019 Meeting Schedule – *Eliana Brown, Illinois Extension*

The Nutrient Monitoring Council will meet March 19th, the Agriculture Water Quality Partnership Forum will meet either April 23rd or April 30th, and the Policy Working Group will meet May 22nd, with feedback on the Biennial Report due by May 31st. The tentative Urban Stormwater Working Group meeting date is June 5th. All of these meetings will be held in Springfield, with the exception of the Urban Stormwater Working Group, which will meet in Chicago. The 2019 NLRS Conference will be November 5th – 6th in Springfield.

NEXT STEPS

Science Team to finalize procedure to add official practices to NLRS.

AWQPF to determine next meeting date.

USWG will continue to work on education and tracking. Specific areas to look into are a tracking app and a leaf collection certification.

The Steering Committee will finalize the outline for the Biennial Report.

MINUTES

Opening Plenary

Welcome – *George Czapar, University of Illinois*

Eliana Brown: Good morning, everyone, and welcome to the 2018 Nutrient Loss Reduction Strategy Workshop! Dr. George Czapar is an Associate Professor Emeritus and former Associate Dean and Director of Illinois Extension. He received his BS and MS degrees from the University of Illinois and PhD from Iowa State University. Dr. Czapar has been involved with the nutrient strategy from the beginning and will give our introduction today.

George Czapar: Welcome everyone. As you all know, the Nutrient Loss Reduction Strategy is a science-based partnership effort, involving collaboration with stakeholders, expanding education and outreach, helping identify research needs and leverage additional funding. Before all of this, there was C-FAR, the Illinois Council on Food and Agricultural Research. CFAR was formed in 1995 and focused a group of scientists to make water quality standards, including from the University of Illinois and the Science Surveys. CFAR created the foundation for some of the projects which followed. The strategic research in initiatives were food safety, information systems and technology, rural community development, swine odor and waste management, and last but not least, water quality. The focus on water quality led to the question of how to develop nutrient standards that are protective of water quality, but are also realistic and achievable. The answer, we found, was to focus on phosphorus. It was about people working towards a common goal and helped secure USDA-funded projects focused on research, outreach, and education like the Integrated Watershed Project, Salt Fork River Project, and the Embarras River Watershed Project. There was also a focus on making the information readily available and shareable. After C-FAR ended, there was the Illinois Council on Best Management Practices, the C-BMP, which assisted and encouraged adoption of best management practices to protect and improve water quality in Illinois. After that, we received additional support from the Illinois EPA and the Illinois NLRS Implementation included hiring watershed coordinators and forming an agricultural water quality team. Haley Haverback and Jennifer Woodyard are our two watershed coordinators, located in the priority watersheds. Our Water Quality team is made up of five assistant professors, many of whom are in the room now. It's so important to have this collaboration. Another collaborator to thank is NREC. It is critical to have funding going forward, this stable funding helps support current research and prepare for the future. And with that, I'll hand it over to Amanda.

Eliana Brown: Thanks, George.

SERA-46 Update – *Amanda Gumbert, University of Kentucky*

Eliana Brown: The NLRS is a story of cooperation and collaboration, strongly engaging the land-grant system at both the state and federal levels. That's where SERA-46 comes in. Our efforts are part of something bigger – not just our state. There are cooperative efforts across the basin. Dr. Amanda Gumbert serves as an Extension Water Quality Specialist with the University of Kentucky College of Agriculture, Food and Environment. She has worked on agriculture water quality issues for the past 17 years, with special interest in the Kentucky Ag Water Quality Act and streamside buffer zones. The overall goal of her work is to improve water quality in Kentucky by providing education and technical information to those whose decisions impact the environment. She holds BS and MS degrees in Plant and Soil Science and a PhD in Soil Science from the University of Kentucky. Amanda attributes her passion for agriculture and natural resources to growing up on a farm in rural Kentucky. Let's welcome Amanda!

Amanda Gumbert: Hello everyone, good morning. Alright, so I'm going to start with a quiz. Can someone tell me what this is an image of?

Audience: Watersheds, drainage to Gulf of Mexico, Mississippi River Basin.

Amanda Gumbert: Yes, sometimes I even get people saying the United States. All are correct. This is the scale of the work that we do. 41% of the continental US drains to the Gulf of Mexico via the Mississippi River. What's going on in all of those sub-basins affects the Mississippi River and Gulf of Mexico. The 2017 Hypoxic Zone was a record-setter, the largest on record since 1985. A bright spot was this year's dead zone was a bit smaller, though still larger than our goal. We want our plants to produce something, so we need nitrogen, phosphorus, and potassium. But we use too much of it. I think the common member of society thinks nutrients are a good thing. So if we talk about Nutrient Management, they think of what they need to consume, not what's going on the crops. I probably get more academic mileage out of the poop emoji than most people. Those of us who deal with manure get a kick out of that.

Amanda Gumbert: We have this entity called the Hypoxia Task Force, which brings together federal and state agencies working on the dead zone and is based in D.C., but consists of members from all over the Mississippi River Basin. From our understanding of the science from the Integrated Assessment and the reassessment, our goal is a 45% reduction in total nitrogen and total phosphorus loads flowing into the Gulf of Mexico to reduce the hypoxic zone to a five year running average of 5,000 sq. km.

Amanda Gumbert: SERA-46 members utilize various appointments (research, teaching, extension) to work on shared priorities. In 1862, the Morrill Act instituted the teaching, 1887 brought the Hatch Act to bring in research, and the Smith Lever Act brought in the extension in 1914. We do research on campus, teach in classrooms, but because I'm an Extension person, we also take all of this information and take it out to the communities who need it most. Everybody's Extension system looks different, but to me that's the exciting part about land grant universities.

Amanda Gumbert: So what is SERA-46, you might ask? SERA-46 stands for Southern Extension Research Activities committee number 46. It's a committee funded by the Formal USDA National Institute of Food and Ag (NIFA) and land grant universities, designed to promote multistate research and extension activities. There are 12 states, with at least 2 members from each land grant university. We are soil

ecologists, economists, engineers, ecologists, and social scientists and have a strong linkage/coordination with Hypoxia Task Force.

Amanda Gumbert: Priorities for collaborative work – anytime you get a committee together someone puts together a checklist. We made our first checklist in May 2018. We have 3 focus areas: strengthening networks, conservation systems research and outreach, and monitoring and tracking progress.

Amanda Gumbert: We want to assist in the optimization of cover crop practice performance. Beth Baker is co-leading recently-funded USDA-NIFA project expanding research and extension on cover crop implementation in the Mid-south/Mississippi Alluvial Valley, where the research priorities include environmental, agronomic, and economic impacts following implementation. Beth said "when I get home, I have a field day because my producers want a field day in January and they're going to terminate their cover crops." I think we should get another month going since she's looking at results in the south, because a lot of the early research has been done in the north.

Amanda Gumbert: We also want to translate science in tile drained areas into accessible information for states to adopt into policies to address nutrient use and movement, particularly with corn and nitrogen. Laura Christianson led the effort for the "Ten Ways to Reduce Nitrogen Loads from Drained Cropland in the Midwest." She's here today, hi Laura.

Amanda Gumbert: We also want to work closer with American Society of Agronomy's Certified Crop Advisor (CCA) Program. We want to collaborate with state CCA boards to update performance objectives.

Amanda Gumbert: As for using social indicators and civic engagement in Nutrient Reduction efforts, we are engaging communities beyond just land owners and land managers. We want them to go from knowledge and awareness all the way to where we see implementation and behavior change. How do we engage urban audiences? They live on a smaller plot of land and might not understand how their actions affect water.

Amanda Gumbert: We want to create a network of watershed practitioners and farmer leaders to strengthen the effectiveness of nutrient management strategies. We actually held a Watershed Leadership Summit to bring people together – not just the usual suspects, we brought in farmers and farm advisors (CCA, co-ops, etc.) and watershed project leaders. We met in Memphis and had about 50 participants. We brought them in to talk about how to strengthen these networks and engage farm advisor leaders and identified some needs, including a network of watershed project success, a watershed coordinator certification program, more precision tools for targeting conservation practice implementation, and more communication. That summit ultimately is leading to a network of watershed leaders. I was really excited that you have Jennifer and Haley. I've worked as a watershed coordinator before and I really could've benefitted from some training. We are planning another leadership summit for Feb. 2019 and meeting in Long Beach, Mississippi. One of the things that came out of the meeting was meeting in the Gulf – actually seeing the water and where the dead zone is. Personally, I'm not that affected in my day to day life by the Gulf and even though we know why we're working on this, it would help to see the area and meet the people who are directly affected.

Amanda Gumbert: Rebecca Power and Jamie Benning worked on a Farmer and Farm Advisory Leadership Needs Assessment. They're trying to characterize farmer leadership – what does it look like? Is it sustainable? We also want to identify any gaps in the existing education. They looked at literature and

programs to find out what exists. My interactions with farmers sometimes is that they don't want to see me. How do we empower our farmers to be watershed leaders and is that possible? That peer to peer interaction might be having a field day and showing off a BMP that they've installed.

Amanda Gumbert: Our general observations are that this is critical for watershed management, it's not a new idea but certainly important. Whatever issue is going on will affect them directly. We don't currently have learning opportunities dedicated to farmer led watershed initiatives. A platform for sharing experiences or ideas may be beneficial to farmers and supporting organizations.

Amanda Gumbert: As for continued work that we have going on, I want to recognize Laura Christianson and Reid Christianson. I appreciate being involved in that project. We want to facilitate dialogue between SERA-46 members and HTF staff. For future efforts, we want to expand farmer-led watershed leadership efforts and expand economics shared priority around on-farm economic.

Amanda Gumbert: We are funded by US EPA competitive funds, USDA-NIFA funds, and the Walton Family Foundation. We're always on the lookout for ways to fund projects. It's been valuable to work across state lines with people and state and federal agencies. Direct farmer and farm advisor audiences, as well as utilizing our Extension audiences. In Kentucky, our Department of Agriculture is there, but wondering if they should get involved. Whereas in Iowa, their governmental agencies are very involved in their nutrient reduction. There are still other committees we hope to get information from. Are there any questions?

Laura Christianson: Can you say more about the law you mentioned in Kentucky?

Amanda Gumbert: The law was passed in 1994. Honestly, I don't know what led up to that law being passed, other than some of it being an effort within the agricultural community to avoid being regulated by another entity. So if you have 10+ acres of agriculture, you need to follow it. The law is complaint-driven, so there is not direct enforcement of the law. It is your own responsibility to develop your water quality plan. We've been helping develop those and essentially we provide a list of BMPs. Example: if you have a herd of beef cattle, a practice is rotational grazing – it's great for herd health and grass. The only time it's truly checked or regulated is if you are a regulated or permitted agricultural facility. So some of our dairy and hog farms.

Audience Member: Is there a reason for 10 acres?

Amanda Gumbert: I don't know the answer to that. I think they thought that if you were less than 10 acres, you were just fiddling around with agriculture. We should go back and revise that because a lot of our fresh produce farmers can produce food on less than that.

Agriculture Water Quality Partnership Forum

Welcome and Introductions

Warren Goetsch: Welcome everyone, thank you everyone for your efforts. An update from our two newest members of the team – our watershed coordinators who were brought on by Illinois Extension through a 319 Grant by the Illinois EPA. For those of you who have heard me speak before, you've probably heard me talk about the Hypoxia Task Force. The strategies are being put together at the state level, but where the work gets done and true progress is at the watershed level and at the field level. These two individuals, our watershed coordinators, will help with that.

Science Team and Watershed Coordinators

Haley Haverback: We work with different organizations such as Illinois Farm Bureau and the Soil and Water Conservation Districts.

Jennifer Woodyard: Like Haley said, we've also been working with Illinois Farm Bureau and the SWCDs to being money into our watersheds. We've also been working with Todd Gleason on a NLRS Podcast. We try to make it practical so farmers can play it while they're driving around in the tractor. There should be some more coming out later this week. We just put on a cover crop field day – we were able to get a demonstrator. We want to focus on demonstrations so farmers can see what these practices would look like on their own farm. We also have a poster at this afternoon's research showcase, so come talk to us and if you would like to work with us, we would love that too.

Warren Goetsch: Before they get back to their seats, does anyone have any questions?

Audience Member: How are you promoting your podcast?

Jennifer Woodyard: NLRS has a Twitter and Facebook page, so Kate has been promoting those for us. Illinois Farm Bureau and the Illinois Corn Growers have also been promoting it.

Haley Haverback: You can also subscribe to the podcast so you get a notification whenever a new episode is released.

Reid Christianson: Have you guys gotten any follow ups or feedback from those podcasts?

Haley Haverback, Jennifer Woodyard: Not yet.

Warren Goetsch: We've also had some interest about how we've formally gone through the process of adding practices to the NLRS. We were blessed early on with a great science team who put together the original information, as with all good things there's a natural progression and folks come and folks go. I think we've again been blessed with a great group of people on our Science Team and I'd like to call on both of you, the Christiansons, to talk about the Science Team new practice adoption procedure.

Laura Christianson: Thanks Warren, as he said one of the things the Science Team has been tasked with is developing a process for adding new practices to our strategy. We aim to please, so we met this morning at 9:00 am to talk about what that process will look like. Developing a process like I just described is important because we want it to be consistent and transparent. It's important for the practices to be trackable and reportable because we will be reporting to the Hypoxia Task Force. So in my mind, that's why those practices are so important.

Reid Christianson: I also wanted to note that adding a practice to the strategy has some scientific credibility and we want to make sure we are being careful and that it is a science-based process.

Audience Member: Who do we contact if we want to add a practice?

Laura Christianson: There is an NLRS Gmail account – what is it?

Kate Gardiner: It's illinoisNLRS@gmail.com.

Laura Christianson: Thank you, Kate. illinoisNLRS@gmail.com. Our deadline will be determined by our Biennial Reporting. We suggest that for full consideration, submitting the practices before the year of the

Biennial Report. The Science Team will meet at least once per cycle to review proposals. The real meat of the proposals is probably what you're interested in and we will formalize this document. Practice proposals will include details about the practice and how it works, we also want the landscape the practice relates to.

Reid Christianson: And if there are any regional differences, that's good to include because it may function differently in the north, south, east, and west.

Laura Christianson: We want a table summarizing what you've found in literature, the studies you're citing need to be included in the packet. It should also include a cost efficiency. We also feel like the person submitting the proposal needs to include information on how the practice can be tracked. We need to be able to track practices if we're going to add them to the strategy.

Reid Christianson: As far as tracking, that sounds good. We have a couple other pieces of info to include, like what is the practice? Is it a modification of an existing practice? If so, why? Or is it a completely new practice? So bringing evidence forward for the practice is critical. Has the science advanced, or is this brand new? And finally, the criteria to review. We're thinking of doing peer-reviewed literature. That's the gold standard. On a case by case basis, we will consider practices that have been submitted in gray literature – a white paper, presented in a conference, etc.

Laura Christianson: We're also looking for as many site years as possible.

Reid Christianson: And then all of those studies should be at least at the field scale. Laboratory or pilot scale is valuable on a case by case basis, but we definitely want to see field scale.

Laura Christianson: And plot scale. A lot of our agronomic research is done on plots, so the bigger the better.

Reid Christianson: Location is important, so we'd ideally like practices that have been worked on within the state. But it's not required, especially if the regions are neighboring ours. We'd like to keep things close to home. The bigger the body of evidence and the more site years we have to look at and consider, the better. If we just have one site year, it would be hard to make a rigorous assessment on that. But if we have 30 years of evidence, that would be better.

Laura Christianson: One other thing that came up is that if there is an NRCS standard for the practice that would be important to include. Okay, are there any questions?

Albert Cox: Should all NRCS approved practices be automatically approved by default??

Laura Christianson: There's one practice that stands out to me, the drainage water management was not included in the NLRS, but the scientists doing the original assessment felt that there wasn't clear evidence for it. I think in IL we wanted to make sure there weren't any loose ends that weren't accounted for. There are also new practices that have come out, like saturated buffers, but we didn't have any research in IL for it.

Reid Christianson: There could be between 30-60 NRCS practice standards that could have an impact on water quality. In the Illinois Nutrient Loss Reduction Strategy, the list is much smaller.

Laura Gentry: Who comprises and leads the evaluation and assessment practice?

Laura Christianson: The Science Team.

Ben Gramig: How is tracking of implementation being done on practices that aren't being subsidized?

Reid Christianson: It's really tough, there are a few different mechanisms that the state's doing here, including the NASS Survey. Trevor, you're probably better at answering this.

Audience Member: Will an NRES person be on the Science Team? I'm noticing a lot of Crop Sciences faculty.

Laura Christianson: I'll turn to George on this one. I think an important factor, we want people doing nutrient research in an agricultural context.

George Czapar: This group is really advisory to the Illinois EPA, who makes the final decision. You guys make the ultimate call.

Trevor Sample: Right, based on the Science Team advice, we can bring it before the Policy Working Group and get their sense on it.

George Czapar: So if there's something missing from this group, it would make a lot of sense to bring it forward.

Albert Cox: I'm not sure how this fits here, but in the NLRS, there is the science assessment section and we have scenarios of implementation of BMPs that and the estimated percent reductions expected from each scenario. It seems that it will be a good approach that if we add practices into the strategy, we should also update the scenarios, because I think the intention was to use the rate of implementation of those scenarios as a measure of progress towards the goals and milestones.

Reid Christianson: That's a great idea, though I'm not sure if we're thinking of the implementation potential of some of these practices. I do agree that keeping strategies and BMPs current is a good idea.

Trevor Sample: We can play with scenarios all day long. If we add a practice or if performance of a BMP changes, then we can take that into account for future scenarios. For the next Biennial Report, we're updating the science assessment for the water quality section.

Reid Christianson: That's a great way to think about it – in two sections. The water quality and the agricultural BMP sections.

Lauren Lurkins: I would just like to say that I'm really excited to see this.

Laura Christianson: Thank you!

Spreadsheet and Implementation Data submittal reminder – *Kate Gardiner, Illinois Extension*

Kate Gardiner: We thank and appreciate everyone who submitted outreach spreadsheets in the summer. We hope everyone can submit a spreadsheet again for the second half of the year. It will be due December 31st, but please feel free to submit earlier than that if you have the information available. We are also accepting the implementation data on the same date – December 31st.

Partner Project Updates – *Warren Goetsch, IDOA*

Warren Goetsch: For those of you have read the Biennial Report, you may recall that we had state program and projects about each of those. We had existing initiatives and then in the Biennial Report, we had initiatives in addition to those programs and projects. We hope to continue that by updating and adding new programs. First, I would call upon our friend from NASS, Mark Schleusener.

Mark Schleusener: Because NASS is just finishing up the census, it's taking a longer time. I was adamant that we don't print the thing on white paper because people ignore white paper – it needs to be on color for people to pay attention. It will also be mailed twice. The phoning date is in March, I have to work around the times when NASS is doing other surveys. There does need to be time for data analysis. It's a good deal smaller than last year. We're aiming for the corn, soybean, and wheat people. When we're measuring, we want them to have at least 100 acres and less than 5,000 acres – we don't get a lot of responses from those with 5,000 acres or more. Staffing decisions made so far include the computer programming for calls – that's already been built and is ready. There's also computer editing and that has not been built yet. I need to work with that programmer. We've made plans for the computer analysis.

Lindsey Ramsey: We're going to promote the NASS Survey at the Illinois Farm Bureau Annual Meeting in Chicago via a brochure. We plan to explain that the survey is a way to measure progress on the NLRS and measure the non-program practices. We have a few thousand attending our Annual Meeting.

Mark Schleusener: And a lot of those will be farm managers, we probably should do some twittering. I love to make charts and graphs for Twitter. So that's my contribution. Any questions about the NASS Survey?

Audience Member: Are you targeting farm owners and operators?

Mark Schleusener: Just operators. We almost never talk to the landlord.

Ben Gramig: So your 1,096 is based on the same inference reliability that you base the other NASS Surveys on?

Mark Schleusener: I gave them a guideline of a confidence interval.

Ben Gramig: What's the expected response rate?

Mark Schleusener: I'm saying 60%. We got close to 60% last time. Are there any other questions?

Laura Christianson: Is this being funded by NREC?

Mark Schleusener: Yes, it is. Thanks, Julie.

Julie Armstrong: Yes, the NASS Survey is funded by NREC.

Mark Schleusener: This project has now been reviewed by the office of budget and have an MOU with NREC that makes the machinery work a little better.

Warren Goetsch: Thank you, Mark S. Earlier, we heard Illinois EPA redirected some 319 monies and that's how we got the watershed coordinators retarget and refocus a little bit. Here's NREC directing some of their funds to assist with the survey to get data so we can report what we're doing. I think you could go on and on of various examples where each stakeholder has redirected resources to further this effort. If we weren't doing that, we wouldn't be doing the things we're accomplishing. Moving on, if you recall, in the original strategy, we had existing initiatives. Whether they were state or federal projects or industry

related projects. I'd ask each of you to look at those and make sure that the paragraphs are still accurate and get those in. Same thing with the nonprofits. You notice we have new ones that were not included in the original strategy, but were included in the first Biennial Report. Look at those and see if they need to be updated. Then if there are new programs, we'd like a paragraph on those. Examples include the watershed coordinators, the STAR Program, etc. I had to get up so early, I turned on Channel 17 and there on the Ag Report was a discussion of the STAR program. If there are any other new projects, please make sure that we are aware of those so that we can get those in to the Biennial Report. We'd like half a page to a page description per project.

Trevor Sample: So instead of us trying to write your story, we want you to write your own story. I know some of you could give us 5-6 pages on what you're doing, but we want to keep the Biennial Report readable. We'd like to have that by the end for the year so we can put that into the Biennial Report and everyone can see what good work your organization is doing. The timeline for spreadsheets is December 31st. We hope to have the first draft by May 31st for the Policy Working Group. We have a couple of weeks for comments, then it goes to Extension in June. After they review it, it gets sent back to the Steering Committee and the new agency directors. Once we have comments internally, we'll have about a month to get it turned around and to the printer for August. It will be a similar release as last year, located in the media tent at the Farm Progress Show. Are there any questions?

Albert Cox: I don't recall that Kate mentioned sending out an email with the spreadsheet.

Trevor Sample: We can do that.

Albert Cox: For point source, we will talk about this again.

Trevor Sample: Cindy and I will be talking about point source during the Policy Working Group meeting.

Albert Cox: For point source, some of the activities will be collected at the end of the year so maybe December 31st is not a good date for the point source groups.

Trevor Sample: If you know you'll have something in January, just let Eliana know and then we can look for it.

Cindy Skrukrud: So for Albert's question, in terms of partner project updates, there were also watershed groups that reported for work going on?

Trevor Sample: Like the Fox River study group?

Cindy Skrukrud: Yes.

Trevor Sample: I'll go over this again.

Cindy Skrukrud: Perfect.

Guanglong Tian: Just making sure, we get a half page total?

Trevor Sample: Just a half-page per program.

Report Release Schedule – *Trevor Sample, Illinois EPA*

Trevor Sample: We'll talk future meetings in the Policy Working Group meeting. We will start scheduling out meetings for 2019. And I will let you know that the next annual workshop will be a 2-day conference in Springfield, similar to last year's conference, and we'll provide food and drink.

Warren Goetsch: Are there any thoughts on the next Agriculture Water Quality Partnership Forum meeting for April 23rd vs. April 30th?

No comments

Future Topics and Next Meetings – *Warren Goetsch, IDOA*

Trevor Sample: If you have any new topics you want to talk about, let us know and we'll put you on the agenda. We want to hear from you what kind of discussions you would like to have next year.

Warren Goetsch: Are there any comments or questions?

No comments

Warren Goetsch: Alright then, we can break for lunch. We'll see you back in this room at 1:30pm.

Urban Stormwater Working Group

Introductions

In attendance: Reema Abi-Akar, Tri-County Regional Planning Commission; Eliana Brown, University of Illinois Extension; Reid Christianson, University of Illinois; Deanna Doohaluk, TCF/DuPage River Salt Creek Workgroup; Jeff Edstrom, IDNR Coastal Program; Veronica Fall, Illinos-Indiana Sea Grant and Midwestern Regional Climate Center; Mary Beth Falsey, DuPage County; Leslie Heath, City of Champaign; Holly Hirchert, Illinois EPA; Holly Hudson, CMAP; Layne Knoche, University of Illinois Extension; Heidi Leuszler, Parkland College; Betsy Liggett, University of Illinois F&S; Stephen McCracken, TCF/DuPage River Salt Creek Workgroup; Nick Menninga, Downers Grove Sanitary District; Lisa Merrifield, University of Illinois Extension; Mary Mitros, DuPage County; Kayla Myers, University of Illinois Extension; Alex Nagy, City of Champaign; John Quinn, Argonne National Laboratory; Justin Vick, MWRDGC; Kelly Warner, USGS; Jennifer Wasik, MWRDGC; and Liping Zhang, John Deere

Subgroup Updates:

Education Subgroup:

Mary Beth Falsey: The Education Subgroup calls were June 26th and August 7th. The subgroup's charge is to explore ways to provide stormwater education resources and to make audiences aware of stormwater issues. Eliana Brown and Kate Gardiner expanded upon the Calumet River resource repository spreadsheet, with keywords. Now Lisa Merrifield and her intern are working on making it a searchable document to be housed on IAFSM website. The Stormwater 101 PowerPoint is available as a template for any municipality, student group, and council members, etc. to use to teach about stormwater and why it's important to those who are not stormwater professionals.

Tracking Subgroup:

Mary Beth Falsey: The Tracking Subgroup calls were June 28th and July 24th. The subgroup's charge is to explore ways to track stormwater BMPs for the Biennial Report and find ways to capture this information. During one of our calls, Reid Christianson presented a spreadsheet used for all nonpoint source implementation and I demonstrated DuPage County's GIS tool for managing stormwater. We need to determine how to collect this information state-wide. Currently, Lisa Merrifield is exploring ways to mine the MS4 reports for data.

NLRS Biennial Report:

Review of Last Report – *Eliana Brown, University of Illinois Extension*

Eliana Brown: The NLRS has a second Biennial Report coming in August 2019, so tracking is necessary. What stormwater achievements can we establish in Illinois?

USWG Members: Agriculture sector, point source sector, stormwater sector?

Eliana Brown: Stormwater can be a challenge to track. Typically, these projects are not eligible for state and federal cost share programs like agriculture. It is easier to track agriculture because of this. Reid Christianson has been working on a Mississippi River Basin regional program. What points do we want to track? Mary Beth Falsey's program in DuPage County uses GIS to track stormwater basins and green infrastructure. Lisa Merrifield is working with the Illinois EPA and MS4 reports for data mining. NLRS Biennial Report will include sections on resources, outreach, land & facilities, as well as water. How much staff, funding, etc. is going towards this effort? How many outreach efforts are there? Answering these questions leads to more infrastructure being installed with the goal of reduction of nutrients in water. A resources and outreach spreadsheet has been sent to USWG members requesting information, with the next due date December 31, 2018. Implementation Data: Illinois EPA 319 program, Illinois green infrastructure grant program (program has been discontinued). DuPage County information is requested from Mary Beth Falsey. Do the MWRD folks have a suggestion on who to contact to request information?

Justin Vick and Jennifer Wasik: Contact information for Joe Kratzer will be sent to Eliana Brown regarding numbers and partner projects.

Eliana Brown: Partner projects are listed in the report. Can we include new initiatives in next report? We would like to include a narrative about green infrastructure grants, among other things. Allison Neubauer of Illinois-Indiana Sea Grant received an ICE grant from Extension to work with Sea Grant and Agriculture Communications in ACES. She will do social science work with homeowner surveys to determine the formatting and develop focus groups to refine the campaign.

Heidi Leuszler: Parkland is hoping to become a training center for national green infrastructure certification. The program helps with standardization of BMP vocabulary.

Jeff Edstrom: Coastal programs are putting out another piece for projects, anyone in a coastal region should keep an eye out.

Eliana Brown: Thank you to those who submitted the Resources and Outreach spreadsheet for the first half of the year. The next due date is December 31st. That goes for the implementation data and partner project updates as well. USWG members should write and turn in a half-page to a page-long report. You can send them all to Kate Gardiner at kgardin2@illinois.edu.

Extension Efforts to Capture MS4 Information – *Lisa Merrifield, University of Illinois Extension*

Lisa Merrifield: The EPA has a lot of data, there are 379 MS4 permits, 14 pending & 278 waivers have been mapped. Waivers can exist for communities under 10,000 people and that do not significantly contribute to nutrient contamination. In terms of the practices, it is hard to find volume data, so we are relying on narrative reports. For now, we are only doing checklists. What are some ways the Extension can get involved in community outreach to help with data mining? We should start with qualitative and quantitative assessments. We are not currently capturing any non-MS4 communities, but we have a few contacts in non-MS4 areas to help. A goal is to create GIS mapping and pair that with other existing statewide data. The State Water Survey is updating rainfall and floodplain maps, which would be good overlapping information. Discussion of non-MS4 areas, the EPA deals with many rural communities which are not defined and are without means to implement ordinances to control stormwater, and some of those communities do not consider that their responsibility. Many communities do not consider it important and so they are not included in annual reports. We have to teach them to "brag." Tolono and Mahomet were brought into the Champaign urbanized area, but these places do not have to submit a report. In Chicagoland, open space and green infrastructure is included in the data collecting process. Because of many complexities across the state, putting all of this together might not have a comprehensive look. The quality of some reports is poor (i.e. resolution issues) and not all are posted online. The MS4 Reports come from Trevor Sample of Illinois EPA.

Jeff Edstrom: Connecticut has developed an app for locating rain gardens. Can we try to get crowd-sourced data?

Stephen McCracken: Would this generate a map of where the programs are, not efficiency or capacity?

Jeff Edstrom: Yes, it would just be a report of things being done, not the quality.

Nutrient Removal Efficiencies – *Reid Christianson, University of Illinois*

Reid Christianson: New development vs retrofitting. We need to work with the three sectors we have. If we want to start working on new development, we have to come to a consensus. We have to improve the accounting system and the tracking of nutrient reductions at the state level with point source and agriculture and urban non-point sources. To keep accounting straight, we need to get aggressive with it.

Mary Beth Falsey: Are we only looking at retrofits? It is hard to separate them for tracking purposes. If we go down this route for accounting, how do we track land use change, how does it affect urban vs. agricultural loads? Post construction runoff control is required by law, so what are we comparing it against? Are we comparing it to agriculture or if they are not following the law? What is the benchmark for new development?

Eliana Brown: The tracking subgroup will tackle these issues.

Reid Christianson: Existing development is a good target for introducing NRLS strategies.

USWG Member: Many communities need plans, but it is a weak spot in annual MS4 reports. Education is getting better; public participation is not. Green infrastructure is going in, but EPA is not being made aware of it. Monitoring is an "unfunded band aid" which is not being implemented as quickly as some people like.

Reid Christianson: Provision for post construction runoff control – mitigation piece for any development. Existing land with little or no stormwater management needs to be addressed. The nature of the permit is that we cannot tell them what to do. They have to come up with a plan, which is one of the weakest areas in annual reports of existing and new development. Education is being chipped away at. Projects like highway cleanup programs or rain gardens, electronic recycling drop off, hazardous waste drop off, etc. is not reported by public participation, and trying to get people to put that in the report is difficult. Best management within retrofitting: we are trying to track progress but need location at agriculture scale looking at 8 locations. What is happening on the ground, what type of land is being treated by that practice type? There are many ways to look at BMPs. We are trying to track progress over time, be transparent, and be simple. There are two potential ways to do this – similar to the Chesapeake Bay:

1. Design based approach: How much water is being treated relative to the size of the drainage basin? These have more detail because the practice design is included into the fold, but it also lumps a lot into two categories – RR (runoff reduction) and ST – (stormwater treatment). We can use retrofit adjustment curves to find relative reduction. Everything is based on how much runoff any given practice is treating. The curve can be used once you have enough information about the practice.
2. Tracking nitrogen and phosphorus: A recognized source for this model/report is needed. What is the name of practice, what does it do, and what is the mechanism for removal and value? This is similar to the agriculture conservation side of things.
    - STEPL Model: Put together by the EPA, the numbers are based on dated literature from 90's and early 2000's.
    - We have to think about the naming conventions – what kind of detail, how much detail, how can we lump the practices? We need the names to match to organize properly. Can we focus on biggest practices in state to get the ball rolling?

Alex Nagy: How do we organize and translate the education? How do we quantify educational BMPs?

Eliana Brown: Think of the logic model – the more outreach happens, the more the practices will happen. It takes time to get people to adopt or fund this on a municipal level.

Reid Christianson: It is a missing link and it would be beneficial to explore options.

Leslie Heath: There are not currently standard definitions that match up with other states. The SWCS has been working on an update for new construction, rain gardens, wet ponds, and constructed wetland standards for a couple of years, which will be a perfect source of definitions for BMPs. Setting the definitions is the most important part, or else we cannot continue with the other aspects.

Future Topics and Next Meetings – *Eliana Brown, University of Illinois Extension*

Eliana Brown: How do we reach MS4s? We know from maps and her experience, with quarterly meetings where working groups get together. Groups talk within their pods but there is not a lot of inter-pod talk:

Alex Nagy: Macon County is working towards developing the "inter-pod" talk right now, but statewide is a different story.

Lisa Merrifield: This is something the Extension can help with. Would that be useful?

Alex Nagy: We have a heavy workload and extra meetings can be a struggle, but in general, it would be beneficial.

Eliana Brown: What kind of value would be needed to make it worthwhile? Can this activity be counted as PDH? The Great Lakes commission has a peer to peer mentoring network. It's done a first round to pair municipalities, and a nomination period to pair a high performing MS4s with new MS4s to help them out with all the things they need to accomplish, which is one thing that could come out of something like this. Should Lisa explore the need for this kind of network?

Alex Nagy, Leslie Heath: Yes. It's hard to find MS4 communities and who is running them. Knowing this would be good for education and outreach opportunities.

Eliana Brown: As for the Statewide MS4 Contact Network?

Mary Beth Falsey: It would be good to have a statewide network of MS4 communities and contacts to see what everyone else is doing. This would be helpful for answering questions, collaboration and networking.

Lisa Merrifield: A steering committee will be developed to explore this. We will continue the conversation.

Eliana Brown: Julia Noordyk of Wisconsin Sea Grant developed a green infrastructure code audit. She is willing to speak with us about it.

Mary Beth Falsey: A DuPage county golf course on a forest preserve with wetland implementation has become a good example green infrastructure project.

Eliana Brown: Can we develop a crowd sourcing app that can help track green infrastructure with information and push reminders for maintenance of the green infrastructure? How do we craft messaging around climate change? We don't know how many MS4s are currently doing that. So far, we have been doing a lot of calls. Most face-to-face meetings happen in Chicago. Is this working for everyone? Julia mentioned meeting at the Chicago Botanic Garden.

Holly Hudson: CMAP could host as well.

Eliana Brown: Thank you, Holly!

Eliana Brown: Next year's NRLS Conference is November 5th – 6th, 2019 in Springfield. Please provide feedback on any topics that need to be covered. We will see you after lunch back in the Monsanto Room downstairs.

Policy Working Group Meeting

Introductions

Nutrient Standards Update – *Sanjay Sofat, Illinois EPA*

Eliana Brown: Our Policy Working Group sectors helped with the formation of the Nutrient Science Advisory Committee, which had its first meeting three years ago this month. We anticipated 5-6 meetings total. We ended up having 31 meetings and calls! I just want to point out what a difficult, arduous task this was. They've had their last meeting and are now wrapping up their report to the Illinois EPA. Illinois

EPA Bureau of Water Chief Sanjay Sofat will now give an overview of the process of what happens after they receive the report.

Sanjay Sofat: My understanding is that we will get the report by December 10th. Once we get it, we will open it up for review and comments. Prior to posting that, we will send you emails and letters to notify you when we are posting it for your review and comments. Once we do that, the next step is public comment, which will be 90-100 days. We would like you to review, analyze, and comment. Even for Illinois EPA, this will be the first time we're seeing it. After we receive your comments in writing, we will decide the next steps. I have no idea how scientifically sound the report is as I have not read it yet. Are there any questions?

Rick Manner: Do you have an approximate date?

Sanjay Sofat: December 10th. We are preparing a massive stakeholder list and if you are kind enough to give us your email that would be great.

Lauren Lurkins: Are you going to have the comments available for folks to look at?

Sanjay Sofat: We will first review before posting them online. If anyone has a desire to read them, I will definitely give it to them.

Working Group Updates

Agriculture Water Quality Partnership Forum – *Warren Goetsch, IDOA*

Warren Goetsch: Quickly, we met as a group on March 12th, you can see the presentations that were made. Elliot Lagacy gave us a rundown of the Soil Transect Survey, which we will incorporate in the next Biennial Report. We also talked about FSA and cover crop reporting with Doug Bailey. We hope to have a better refinement of that data in this version of the Biennial Report. Trevor Sample of Illinois EPA talked about riparian buffers and filter strips as well as the project in Iowa, which takes students out to map the practices listed in their strategy. We also talked about the need for a formal process for adding management practices to our suite of preferred practices in the strategy. Laura Christianson and Reid Christianson spoke about this progress. We also had a presentation on the STAR program. When I turned on the TV this morning, there was a farm reporter talking about the STAR program, which seems to be gaining some momentum. That program came out of the Champaign County Soil and Water Conservation District as a way to recognize producers and a way to add value to the adoption of conservation practices. We also talked about the 2019 NASS Survey. In terms of the survey, this is the schedule that Mark talked about. We'll see that first mailing around the first of the year, the second mailing a month later, and a phone call follow up in March. There's a hopeful publication date of June 1st. The plan is for 1,096 farms with an anticipated return rate of 60%. It will be targeted at producers with between 100 – 5,000 acres of cropland. The forms will be returned, the data will be entered, and then the computer programming side of things. There's a lot more to these kinds of surveys than you think. I believe it was mentioned that the calling scripts are done, the analysis is ready and hopefully all of that will culminate with a report. There's talk of a brochure to advertise at the Illinois Farm Bureau annual meeting in December. We are attempting to update the various projects our partners are doing in the Biennial Report – everything after the first strategy came out and then adding in new programs since the publication of the last Biennial Report.

Urban Stormwater Working Group – *Mary Beth Falsey, DuPage County*

Eliana Brown: Next up is Mary Beth Falsey of DuPage County. Mary Beth is new to the Policy Working Group and she's representing the Urban Stormwater Working Group.

Mary Beth Falsey: Just to give you a quick overview of the Urban Stormwater Working Group and what we've done so far, we had three meetings on May 14th, Aug 22nd, and Sept 26th. May 14th, we just had an introductory conference call and discussed general information and established the education and tracking subgroups. On August 22nd, we had a call with Tom Schueler from the Chesapeake Bay area. The Chesapeake Bay has been doing this work for a while and are ahead of the game, so we looked to them for some guidance on tracking BMPs and BMP removal rates for phosphorus and nitrogen. On Sept. 26th, we had an in-person meeting at CMAP and I gave an update on DuPage County's BMPs and our stormwater inventory. We use a lot of different GIS resources, inventory, and databases to map these practices out – spatially and numerically. However, the real interesting part of the meeting was Roger Bannerman's talk on leaf litter in the streets and how it affects our nutrient loadings. To sum it up, he has partnered with Bill Selbig of USGS to look at street sweeping and leaf litter in roadways and how that impacts our urban stream areas. They found that the highest loadings come in the fall when the leaves drop from the trees. They found an increase during the spring too. You really will have to check out Roger's study. They also found that increased city leaf collection can help and eventually wants to do a crediting system if they increase their street sweeping practices and also determining the most cost effective ways. Different trees affect the amount of nutrients loaded as well.

Mary Beth Falsey: The education subgroup had calls on June 26th and August 27th. They talked about ways to provide stormwater education resources and how to make audiences aware of stormwater issues, like minimizing salt use and how it's important not to dump things down the drain. They're also creating a resource repository and a Stormwater 101 PPT to introduce folks to stormwater. Here is a list of the Stormwater Resources, as you can see there are resources from CMAP, MWRD, etc. that can be shared across the states. This will be housed on the IAFSM website.

Mary Beth Falsey: The tracking subgroup had conference calls on June 28th and July 24th. On June 28th, we brainstormed and explored ways to track stormwater BMPs for the Biennial Report. We talked about ways to capture this information, what information we want regarding these BMPs, how much volume they are processing, etc. It's a large task, so we're trying to narrow it down to a statewide level. Reid Christianson presented a spreadsheet that's used for all nonpoint source implementation (location, BMP, program, installation date). But how do we collect this information in a manageable format from a statewide level? That's something we're still trying to figure out. This is a DuPage County map of funded projects and we're starting to inventory our detention basins and other green infrastructure. We have about 1/3 of the county completed and this is something that our staff will do between other projects. As you can see here, we have a green roof with the location and year completed. Extension is evaluating MS4 reports for information/data to see what kind of information the MS4s are reporting. For this map of Illinois, you can see the MS4s indicated by shaded areas. So the blank areas are rural areas that do not have MS4 requirements.

Mary Beth Falsey: As for future projects and next meetings, someone had mentioned golf courses. Preserve at the Oak Meadows is a forest preserve-owned golf course and they incorporated lots of different water quality practices, which is unique because we consider golf courses to be a source of pollution. But Oak Meadows is a good example of how these can be resources as well. Are there any questions?

Audience Member: You mentioned something earlier about a crediting program?

Mary Beth Falsey: That's something that Roger Bannerman is working on – about how timed street sweeping is helping with nutrient loads. So he's investigating how municipalities can benefit from having a timely street sweeping regimen.

Performance Benchmark Committee – *Cindy Skrukrud, Sierra Club*

Cindy Skrukrud: Good afternoon everyone, I'm happy to be here on behalf of the Peformance Benchmark Committee. You can see that the mission of the PBC was to work with a point source community at Illinois EPA to identify ways to track point source efforts and ways to show the progress. I have one major update on projections and Trevor will follow me to talk about the tracking efforts. At our May 31st Policy Working Group meeting, we discussed our need to talk about goals and it was agreed for the Performance Benchmark Committee to show a trajectory of our projected outcomes. The Performance Benchmark Committee and other representatives met in August to develop a tracking framework. Here are the folks who are listed as members of our committee, but one of the things I've heard from folks is that we need to be broadening the committee. We welcome any of you to talk with me or Albert Cox if you'd like to be included. We're thinking we will meet again early next year in January or February.

Cindy Skrukrud: The next two slides probably look familiar because they are pulled from the NLRS. As you probably remember, the strategy did not prescribe ways to achieve the results, but rather offered ways to do it. So these scenarios are kind of like recipes and some of these strategies don't include all the ingredients that we have on hand. For example, they don't include point source reductions and that's an ingredient we know we have in our pantry and that's an ingredient we know we'll want to use. Here we've talked about needing a bit more information to make that stew to keep us fed at the end of our meal. It talks about buffers on all applicable cropland. The question is – what does that mean? How much land do we actually need? Those are some ideas that the committee is throwing around. How do we measure where we're at and where are we headed? You can see there is a column for 2015 that's blank – we tried to gather the information we needed, but we couldn't. We didn't get every point source reporting the information and Illinois EPA didn't have the resources to pull that information. After I'm done, Trevor will talk about the strides that Illinois EPA has made for our next Biennial Report.

Cindy Skrukrud: At the August committee meeting, members gave some suggestions for ways to reach our goals, one of which was to add interim goals. That suggestion was made by Caroline Wade of The Nature Conservancy. The challenge is collecting the information to get a good representation of the amount of acres where the practices are being implemented. So Trevor and Warren indicated that for the next Biennial Report, they will see how the reporting can be tweaked to incorporate some of these findings. To give you some new information that we've gathered since that August meeting, this slide shows some examples and I've highlighted the new information. So first, under Point Sources, we have a new data point on our trajectory. The environmental groups and the Illinois EPA have agreed that unless a different number is developed through local assessments, these plants will meet 0.5 mg/L. If you look at the new column there for estimated acres, Trevor has worked with Dr. McIsaac to determine those. Can we better define the total number of acres on the ground needed to meet those recommendations? Our challenge remains in our ability to track and project their adoption. I'm hoping with the new surveys being done and the new partner project updates, we'll be better able to track implementation. One thing we need to be thinking about is our state's next budget and any capital plan. I'm glad George reminded us of previous

funding with CFAR. I wanted to remind folks that when the Biennial Report came out, we got it out to all the state legislators and discussed at our last legislative meeting, those resolutions haven't been adopted yet but we're hoping that we can get the legislature to act on those resolutions. Now I'll turn it over to Trevor.

Trevor Sample: We have the estimates from what the point source contribution was in nitrogen and phosphorus. The Hypoxia Task Force has point and nonpoint source working groups. The nonpoint source group report should be coming out next month. We will take the information that our agency gave to them to compile this. This is going to be only for major municipalities and this type of information goes through 2017. We'll also be talking about those with numeric discharge limits in their permit and the final load numbers for nitrogen and phosphorus. These may be changed a little bit, they're still in draft form. We want to make sure we agree with the numbers attributed to each facility. This isn't the whole table, just one page – just know that each facility is listed and will all be in the Hypoxia Task Force report coming out this month. We will also be looking at 2018 data for our facilities using the same methodology. In the last Biennial Report, we looked at plants that have to do optimization and feasibility studies. We will be updating these numbers in the next Biennial Report.

Nutrient Monitoring Council – *Gregg Good, Illinois EPA*

Gregg Good: We last gave an update about the Nutrient Monitoring Council in May, so I'll primarily be talking about our most recent meeting in August. I think the only membership change is that [Brian] Metzke may be assigned to the group. These are our charges, we're trying to figure out what's leaving the state with our super gage network. Trevor gave us an update on the Watershed Coordinators and the Science Team. I do want to talk more about the NLRS Data Portal. Jong Lee from NCSA is working on this project with Ted Kratschmer and it's something that's taken on a life of its own. This portal is powered by the GLTG Virtual Observatory, which gathers data for a variety of different sources. We asked the folks to update some of the station names and you can the type of data that is listed in the portal. There's a date range to show what type of data is available. We have phosphorus data from USGS and Cindy provided data from the Fox River Study Group as well. New sites across the border in Iowa have been added. When the data is all uploaded, you'll be able to see what is there and you can look at phosphorus and nitrogen and you'll be able to use this portal to see changes over time. I think that this portal will be an amazingly useful tool. Ted has a paper that he will be showing during the research showcase. We also have a discussion on groundwater so we have a 106 monitoring grant, which we use to study groundwater quality near Havana, Illinois. There is continuous monitoring in the groundwater by Quiver Creek.

Greg McIsaac: What we're looking at is trying to create a model that can be applied across the Corn Belt. We have partners from neighboring states and we're focusing on Decatur because it has both point and nonpoint source pollution. We're looking at different ways to capture the phosphorus and another part of the team. There's been a lot of cooperation from the Soil and Water Conservation District and they have given us information they weren't required to report to the Illinois EPA. About 85% of the phosphorus is coming from a combination of ethanol production, wastewater, and soybean crushing wastewater. Over the next 3-4 years, we will be putting together a model that can be applicable to sites with similar conditions and hope the analysis we do can help communities find a cost effective way to recover phosphorus and put it towards more useful purposes. We have two posters in the poster session if anyone has questions.

Gregg Good: Thank you, Greg. At our last meeting, Kelly Warner gave an update on the super gages. They're also doing a side project looking at ambient water quality monitoring data. We have about 146 stations now. We do a good job of collecting data, but not as great a job at looking at it. So Kelly and Paul Terrio will be looking at that. Paul Terrio and Tim Hodson have developed a report on the sites where we have super gages and have continuously recorded phosphorus every 2 hours. This is what you would get from each of the sites. This one happens to be at the Illinois River at Florence. We had continuous data being recorded long before this particular project started. Similarly, they are experimenting with sediment. They have some expertise looking at suspended sediment, sediment load in terms of tons per day. Then they come up with these nice tables and in terms of load, 228 million pounds had left during that period of record. I'm not sure if any of those shock you, but that's what's coming out of the super gage stations. Nitrate has been pretty good, phosphate has been troublesome. Our next meeting is March 19th. Are there any questions?

Rick Manner: Do you have any plans for harvesting?

Greg McIsaac: It would either be in the treatment plant or the processing plant. So that's where we're looking to capture some of the phosphorus.

Rick Manner: So when you're talking recovery, you're not really talking nonpoint source?

Greg McIsaac: We may be looking at that.

Suzanne Bissonnette: I did have a question for Cindy.

Cindy Skrukrud: I think Trevor better take this one.

Trevor Sample: When it says "MRTN" in the strategy that means that all acres should be using the MRTN for their rate. There were about 11 million acres of corn last reported. It wasn't quite clear how many acres corresponded with those practices. Dr. McIsaac had that information from when he worked with Mark David.

Lauren Lurkins: Have you talked about the three party agreement for permits, is that available publicly?

Rick Manner: You can look at any draft these days, it has about a half page of text that is semi-legal talk. An interesting part was EPA said they couldn't speak for IEPA, IWEA said they couldn't speak for all facilities, etc., so nobody ended up signing it.

Kay Anderson: Right, nobody signed it.

Rick Manner: The people in the room said they wouldn't object. So that's along enough time table that most treatment plants should be able to accommodate it. So there was the discussion of how to do this and how to honor the work of existing watershed groups and discuss the exceptions. Basically, the ultimate product is in draft permits coming out now. IEPA is trying to write up a couple hundred of them in six months. So it's strange not to have a great celebration but it's being talked about mostly on the side.

Lauren Lurkins: I don't want all the permits.

Cindy Skrukrud: We could send you one as an example.

Sanjay Sofat: I think we can share what we are showing to the public, but one thing I would say is that just looking at the agreement without understanding how it will work might be hard. It's complicated in many

ways. There are two ways to look at it 1) what were you thinking by not signing an agreement and 2) this is one way to make things work. You don't always have to sign an agreement. You could say, "Without signing an agreement, how are you going to do it?" Well we can try.

Lauren Lurkins: I wasn't being critical, I think it's cool. I was just thinking about how to trade.

Sanjay Sofat: I think that's a good question. Maybe it's time to talk about trading. I think it's in phases. We get something in place and if the report is good, we can think about what to do next. I think we can share what Amy has shared.

Farm Bill Update – Jonathan Coppess

Eliana Brown: Dr. Jonathan Coppess is a clinical assistant professor in Agriculture and Consumer Economics. He is the former administrator of the Farm Service Agency (FSA) and grew up on his family's corn and soybean farm. He maintains an interest in the seven-generation family farm that his father and brother continue to operate. He earned a J.D. with honors from the George Washington University Law School in Washington, D.C.

Jonathan Coppess: We are stuck in a stalemate. This map will show you party vote by county – the taller the tower, the more votes. This is the 2016 presidential election. So this will tell you that the country is very much divided between the rural and urban areas. As for the Farm Bill, the Corn Belt doesn't agree with the Cotton Belt and neither of them agree with the Wheat Belt. You put this together and you can see why we're having problems. This increases our disagreements about various programs and policies.

Jonathan Coppess: For a little bit of a background on how we sort through Farm Bills, we have to write them within a zero sum game called baseline. You get a certain amount of money and have to cut money somewhere to spend more someplace else, so that creates political clashes. Nothing else creates more uproar than SNAP, it has increased drastically in the amount of Americans participating in this since 2007. A program like SNAP peaks a little bit after the recession, when people have exhausted their savings. As the economy grows, the program will gradually decline. It peaked in 2013 and is down quite a bit by now. Unfortunately, those decreases have not decreased the political challenges that come along with writing the Farm Bill.

Jonathan Coppess: There have been lots of talk of crop prices changing, those prices have come down substantially during this farm bill debate. President Trump's tariff war has also affected the prices, in particular soybean prices in Illinois. As we've announced the tariffs and China's tariff revenge, prices have fallen in corn and soybeans. Now there's millions of dollars for commodities affected by the tariff issues. All of this has fed into the Farm Bill. Farmers have been in a five year decision between two programs that trigger on prices or yield. The idea of a fixed price floor like $3.70 on corn has become more popular.

Jonathan Coppess: But given that we are talking about water quality, conservation is probably of more interest to this group. We've reduced the Conservation Reserve Program (CRP) acreage cap down to 24 million acres, which we've already reached, so there are no new acres going into that program unless acres come out. We've continued EQIP and rewrote the easements and created a new Regional Conservation Partnership Program (RCPP) program. We continued the Precision Conservation Management program that Laura Gentry started. I showed you a bit of the politics, we know we're doing more with money. The House started to move its Farm Bill around in the spring. The House Farm Bill was

very favorable to Cotton Belt conditions. Conservation is where we see a big concern with what the House wanted to do – they wanted to eliminate the CSP and shift funding into EQIP.

Jonathan Coppess: To really complicate things, they also went after the SNAP Program and proposed very controversial changes to the SNAP Program. Without getting into program details, this program helps low income families so to reduce spending, you change the requirements or eliminate some of the benefits. Instead, the House made more stringent work requirements, especially if you were an able-bodied adult with no dependents. At the same time, they plowed millions into administrative costs. So if you set aside the specifics, you see the political challenges here because they were cutting money to low income families and funneling the monies into the administrative side. It was a strictly partisan fight and a partisan bill. So keep that in mind with the midterm results on how this will change. We are watching closely to see how this negotiation goes. It added controversies that were already existing among farm groups. We see that in light of the different revenues by crop, cotton has done better than other commodities in actual revenues and yields as well as in policy. So that sets us up for challenges as one group does much better than others. USDA created two specific special payment programs for cotton. Not to pick on one commodity, but it is frustrating that the Farm Bill is stuck in stalemate due to partisan issues and one crop is benefitting majorly over others.

Jonathan Coppess: I want to highlight what the House is doing in terms of conservation. The problem is we have no great way of explaining this or putting this in the clearest mechanisms/measures. What does this mean for a state like Illinois? If you can't see this, it's all posted on farm doc daily. Illinois is one of the largest recipients of CRP funded dollars. If you're currently under contract, that contract will continue, you just can't renew it. So this puts a lot of political pressure on the Farm Bill. If we break this up state by state, states like Minnesota and Illinois are more likely to have funding at risk due to the CRP. So this raises a lot of concerns when it comes to funding for farmers wanting to implement NLRS practices.

Jonathan Coppess: Picking fights on the SNAP program has landed the House in hot water. We took the estimates for SNAP – we see the shift from benefits to people and the administrative side. I mentioned the voting issue, these are the House districts that originally voted in the Farm Bill. So you can see the politics behind this – it got to be very partisan. In fact, the Farm Bill got shut down in 2014 based on the debate over the SNAP Program. It's not just me picking on one chamber, I am a former Senate staffer so it's easy for me to pick on the House. I don't want to leave that impression because I think the Senate is important in a comparison of this program. The Senate rejected the House provisions on SNAP 68 to 30 and made some minor changes to conservation. The Senate Farm Bill was largely status quo and passed 86 to 11. So now we're in a stalemate, the House and the Senate are trying to figure out which version of these bills go to the President's desk.

Jonathan Coppess: We have just experienced a major turnover in the midterm elections – the House is changing hands. This is a map of the votes by district. Where there's a section with lines through it is where it flipped. We're shifting some of the political changes in the House and then our map changes. And you start to step back and wonder what does this mean long term and how do we get a Farm Bill passed? We are seeing a pretty drastic change in the elimination of CSP and this just plays into the dysfunctional issues of Congress where we seem to be at a height of polarization and disagreement. So if you're counting on this and waiting on this to wrap up, I think we're waiting for the House to concede on the SNAP issue. If not, we come back in January with a whole new congress and it starts over with new

members in committees. If you're looking for a ray of hope, I don't think everyone wants to start over so I think they will be motivated to reach an agreement. Are there any questions?

Audience Member: I heard they expect to see the Farm Bill passed in the next session.

Jonathan Coppess: We're all optimists. There's a very clear path and there's no mystery to what needs to happen. To pass, the House needs to concede on SNAP and we'll see what happens with CSP. There's optimism because we're starting to hear some members of Congress talking of conceding and if that's the case, we might get a Farm Bill.

Upcoming Biennial Report and Meetings

Biennial Report Outline and Release – *Trevor Sample, Illinois EPA*

Trevor Sample: This is what we used for the last Biennial Report in 2017. The original strategy was broken up by sector. Is that still okay with everyone, do you like consistency?

no comments

Trevor Sample: Alright, we'll use the same format.

Albert Cox: In this format, each workgroup will be responsible for writing their own updates?

Eliana Brown: Each working group would have some paragraphs that you would send us of updates on your progress. We would also have implementation data and some partner updates. We talked about those in the breakout sessions, so which updates we include. You'll probably receive an email from Kate or me asking for a half-page update.

Trevor Sample: Performance Benchmark Committee won't have to write their own update.

Albert Cox: Ah, okay.

Cindy Skrukrud: Trevor, remind me where do watershed reports go?

Trevor Sample: I think we put that in Performance Benchmark Committee last time.

Eliana Brown: We did. Yes.

Cindy Skrukrud: But then I'm thinking of someplace like Lake Springfield watershed?

Trevor Sample: That was in the partner updates.

Cindy Skrukrud: So depending on who is leading the watershed updates determines where it goes.

Trevor Sample: Yes. So the other watershed type projects will go under the partner updates. That's how we had it in the last report.

Greg McIsaac: Will the Science Team have anything?

Trevor Sample: Not yet, because nothing has been submitted to them yet. So they won't be due this year, but the year after. The only thing that will be in the science assessment will be your work, which we'll talk about next.

Albert Cox: I think we need to think a bit more about what the format of report and whether we should use the same format as the last report. For example, the Performance Benchmark Committee purpose was not to actually collect the data and summarize it. The purpose was to come up with a framework and metrics, not necessarily compiling the data. However, according to format of the last report it is assuming that that committee is responsible for doing that. This is not the case, you might be compiling that information.

Trevor Sample: A lot of that information will be coming other committees. So if you'd like to have another Performance Benchmark Committee meeting, we can have one of those at the start of the year. If you have any suggestions for revising the format of the report, feel free to send me those suggestions. This is what our report timeline looks like. There will be a draft for the Policy Working Group in May, then the Steering Committee and agency directors get one more look at it. We'll be shooting for release in August 2019. I'll turn it over to Eliana now.

Science Team Assessment Update Plan – *Greg McIsaac, University of Illinois*

Eliana Brown: Thank you, Trevor. Dr McIsaac is an associate professor emeritus. As most of you know, he was part of the original science team that made the science assessment for the NLRS.

Greg McIsaac: I appreciate the opportunity to talk about what we will be doing. I started working on this about 6 weeks ago and I'll keep working on it for the next two months. They're two different scales. There's some non-monitored areas in Illinois. I'll also be updating the HUC 8 nitrate and total phosphorus yields. We only did those one time for the NLRS and those were 2011 water years. I'll be submitting a draft report to the Illinois EPA in mid-February. This is what the state nitrate loads look like. The dotted red line is the five year running average. You can see that the 5 year average changes quite a bit and that's mostly due to changes in rainfall and river flow. The statewide load was down 8-10% and at that time the water flow was roughly equal to that of the baseline period so it did seem like we were making some progress. We need to look at these loads in relation to how much water is flowing. In 2013 to 2017, water flow was up 13%, so we may expect higher numbers. USGS provides the daily flows and then we need an estimate of the daily concentrations. Shifting over to the HUC 8 concentrations, we take the HUC 8 totals and subtract the HUC point source numbers to get the total HUC 8 nonpoint source pollution. Since the last HUC 8 went up through the 2011 water year, we have 2012 to 2017 water years to report. The average flows for those years were similar to the baseline years. I think what we want to do with this numbers is compare the different HUCs to each other under similar conditions. These methods that I'm using are mostly the same from the original NLRS, but a few of the sites have been discontinued. Only about 3 of 40 sites don't have information that we can update. The monitoring locations don't correspond to the HUC boundaries, so I'll be exploring ways to link those up.

Proposed 2019 Meeting Schedule – *Eliana Brown, University of Illinois Extension*

Eliana Brown: This isn't complete, but this is what we're thinking. March 19th for the Nutrient Monitoring Council meeting, April 23rd or the 30th will be the Agriculture Water Quality Partnership Forum meeting, and May 22nd will be the Policy Working Group meeting. You saw the timeline for the Biennial Report, this meeting will be your reminder because we'll want to get your feedback by May 31st. The tentative Urban Stormwater Working Group meeting date is June 5th. This last date, Nov. 5th – 6th, will be the Springfield 2019 NLRS Conference. It will be a larger two-day conference. We had a call for conflict dates, so thank

you everyone who responded. I was happy that I was able to get a few dates on the schedule. Do these conflict with anyone? If not, forever hold your peace.

no conflicts mentioned

Eliana Brown: I want to thank you all for coming today and for your continued interest in NLRS. I've recently given a few presentations about our strategy and the feedback I've gotten is how lucky we are to have these great partnerships. This is attributable to all of the work that you do. So, let's go upstairs for well-deserved refreshments and see some research posters!