

Policy Working Group

May 22nd, 2019 – 1:00 – 4:00pm
Illinois Department of Agriculture
801 E Sangamon Ave, Springfield, IL



SUMMARY

Introductions/Group Charge

Eliana Brown welcomed the Policy Working Group and reviewed the group charge.

NSAC Update and Next Steps – Sanjay Sofat

Sanjay thanked everyone for their comments – the Illinois EPA received over one thousand. The next step is to have the Illinois EPA Bureau of Water technical staff review the comments over the next two months. Once the comments have been reviewed, the bureau will recommend a plan of action and determine an official agency position.

Updated Science Assessment – Greg Mclsaac

Greg Mclsaac provided an overview and results from the updated science assessment. Statewide riverine water flow, nitrate-N load and TP load estimates from 2013 – 2017 were 13%, 7%, and 28% greater than the 1980 – 1996 baseline period. The 2017 estimated point source TP and TN discharges were 22% and 14% lower than the 2011 estimates.

At the HUC 8 scale, nitrate and TP yields in 2012 – 2017 were generally similar to the 1997 – 2011 values, with some exceptions. He found TP load reductions in Chicago and Des Plaines and TP increases in the Upper Sangamon and elsewhere. He also found changes in nitrate-N load were correlated to changes in water flow for HUCs with high N yields. There are possible nitrate-N reductions per unit of water yield in the Mackinaw and Spoon Rivers and Henderson Creek.

Dr. Mclsaac provided some suggestions for further study and future updates. Suggestions include to identify the factors affecting changes in loads, sample rivers more frequently, especially for P at high flow, QA/QC point source data, use more than one year of point source discharge data, focus on monitored watersheds rather than HUCs, estimate loads in unmonitored watersheds by watershed characteristics rather than neighboring watersheds, and evaluate uncertainty and climate change impacts.

NASS Survey Results – Mark Schleusener

The NASS Survey is sent to farmers who have between 100 – 10,000 acres of farmland. This year, the survey was sent to 1,096 farms. There were two mailings and those who hadn't responded yet received reminder calls in late March as well. Funding for the survey is provided by NREC.

This year's survey recorded a higher response rate than previous surveys. Mark explained that increased familiarity with the NASS Survey may have contributed to increased farmer participation.

Survey results show that fewer farmers are using the MRTN strategy in favor of other industry-approved techniques. The most popular reason for reducing phosphorus applications was soil test information, followed by updated phosphorus removal rates in the Illinois Agronomy Handbook, and other reasons, including cost.

General knowledge questions show that respondents are most familiar with cover crops management and the MRTN strategy and least familiar with bioreactors, with over half of respondents reporting they are not at all knowledgeable about bioreactors. Mark noted an increase in “not at all knowledgeable” and “slightly knowledgeable” responses compared to the previous survey. This information could be used to direct outreach and education efforts to producers.

UMRBA Act, USGS Website – Gregg Good

Gregg provided an update on the Nutrient Monitoring Council, the next meeting is in September. He also showed the group how to navigate the new USGS Super Gage website and provided an explanation on the proposed Upper Mississippi River Water Quality Improvement Act.

The Upper Mississippi River Basin Association (UMRBA) is a five-state organization formed by the governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to coordinate river-related programs. The purpose of the proposed act is to better manage and understand sediment and nutrient flow from the Upper Mississippi River to the Gulf of Mexico and to improve and sustain clean water in the Upper Mississippi River and its watershed through a state-federal coordinated monitoring, assessment, and protection measures. This has been worked on over the last five or six months and Gregg thinks it would support what the Policy Working Group is doing regarding funds for monitoring and implementation. The next UMRBA meeting is in a couple of weeks in Moline, Illinois.

Biennial Report

Report Outline – Eliana Brown

Eliana outlined the chapters of the report and reviewed the logic model.

Staff and Financial – Eliana Brown

Eliana thanked the organizations and entities for submitting their spreadsheets. Staff involved in NLRS activities has increased. Overall spending in the agriculture sector has declined since 2016 with a greater fraction of the total spending come from private spending in 2018. Reported spending increased in the point source sector, likely due in part to additional partners reporting. Three partners responded to represent the stormwater sector. Due to the voluntary nature of the spreadsheet submittal, there is underreporting across all three sectors.

Outreach – Anna-Maria Marshall

Analyses are based on organizations’ reports about outreach and communication. Information presented today is for the agriculture sector only, stormwater and point source analyses are coming soon. Comparisons are complicated and different organizational reporting styles may contribute to underreporting. While there were fewer overall events, attendance at these events doubled. The popularity of the outreach types (print/media, radio/tv, social media and webinars) is about the same. Social media presence has increased, but is still underreported. Information and training on specific best management practices like technical assistance and rental programs have increased as well.

Agriculture Land Measures – Warren Goetsch

The data show that there have been significant gains in the last few years in cover crop acres. IDNR show CREP easement acres increased after the NLRS release and have since plateaued. Nutrient BMPs enrolled through NRCS EQIP has seen a slight decline in cover crops since 2017 and an increase in nutrient management. New wetland acres enrolled in WREP show increases in the last few years with a drop-off in 2018. New acres enrolled in CSP show that cumulative acres are increasing. Nitrogen and phosphorus

load reductions were applied to the Illinois EPA 319 program, so you can see the reductions per year for each practice. Known bioreactors and their acres treated in Illinois have doubled in the last two years. The 2018 Soil Transect Survey shows the trends in tillage practices and areas that are meeting or exceeding Tolerable (T) soil loss on county and HUC 8 levels. While we're not making all of the gains that we'd like, we've seen a reduction in ephemeral erosion in the last few years. Warren also explained the additional graphs and noted the plan is for there to be a paragraph accompanying each one in the Biennial Report.

Point Source – Trevor Sample

The Hypoxia Task Force is currently developing a report on point source nutrient loads in the Upper Mississippi River Basin. While the 213 Major municipalities in Illinois represent the largest nutrient loads, the original science assessment included industrial and other minor facilities as well, so these loads were estimated for 2017 to provide a proper accounting of total statewide point source nutrient loads. Minor Municipal Facilities were given the same loads as 2011 and data for MWRDGC, Decatur SDD, and Sauget were obtained directly from the facilities or their websites.

There was about a 22% reduction in phosphorus and a 14% reduction in nitrogen in 2017. Nutrient loads for point sources are still being developed for 2018. All of this will eventually be available by HUC 8 and uploaded to the Great Lakes to Gulf portal. There will be updates to the TMDLs, CAFOs, the state revolving fund, and water quality trading as well.

Adaptive Management Chapter – Trevor Sample

Policy Working Group members recommended that the 2019 Biennial Report address performance benchmarks, particularly for agriculture implementation tracking. The Performance Benchmark Committee met in August 2018 and again in April 2019, where a draft Performance Benchmark – Adaptive Management chapter was presented and discussed. The chapter will explain the assumptions behind the agriculture implementation scenarios, examine implementation trends, and combine practice data to estimate overall load reductions. The chapter will also look at the trends for point source reductions and project potential load reductions if all facilities are meeting the 1.0 mg/L and 0.5 mg/L goals.

Adaptive management will be a new chapter that wasn't in the previous Biennial Report. It will discuss the role of the Science Team and the processes for adding new agriculture conservation practices and updating practice performance. Future Biennial Reports may add practices or update practice performance, potentially changing the scenarios. There's also the potential to designate additional priority watersheds and include additional resource needs as well.

Report Logistics – Eliana Brown

The Steering Committee will send a draft report to the Policy Working Group by late June. Members will have two weeks to review the draft report and submit any comments. Final draft of the report is due to the Illinois EPA sometime in August or September, depending on how many comments are received. After a final review, the Biennial Report can be printed and released.

Hypoxia Task Force Update – Trevor Sample, Warren Goetsch

The Hypoxia Task Force meeting was held in Baton Rouge, Louisiana last week. The event was coupled with a nutrient roundtable to better understand how the federal government can assist states in their strategy implementation.

Warren informed the group that Dave Ross, Assistant Administrator for the Office of Water at the US EPA, is looking for more ways to engage the market. Warren noted the discussions that developed at the meeting were interesting and that he made some suggestions on how to improve nutrient strategy implementation. There was a gulf science update, a report on the nonpoint source, and the piloted project in Arkansas and Indiana is expanding to Illinois, Kentucky, and Minnesota. Trevor added that all the states are in different places in their strategies and everyone is trying to make sense of the data. The next meeting will be held in Kentucky this fall or winter.

The gulf cruise that determines the hypoxic zone size is setting sail this summer. Funding for the cruise continues until 2020. The Hypoxia Task Force is exploring other means of measuring the hypoxic zone.

Fall Conference – Eliana Brown

The conference will be held December 3rd and 4th in the Crowne Plaza in Springfield. There will be a research showcase on the evening of December 3rd.

NEXT STEPS

- Write, review, and release Biennial Report
- Plan fall conference

MINUTES

In attendance: Warren Goetsch, Illinois Department of Agriculture; Trevor Sample, Illinois EPA; Sanjay Sofat, Illinois EPA; Christine Davis, Illinois EPA; Dennis Bowman, Illinois Extension; Kay Anderson, American Bottoms Regional Wastewater Treatment Facility; Kris Reynolds, American Farmland Trust; Steve Stierwalt, Association of Illinois SWCDs; Randy Stein, Bloomington Normal Water Reclamation District; Liz Hobart, GROWMARK; Dick Lyons, Illinois Association of Drainage Districts; Mike Chandler, Illinois DNR; Kelly Thompson, Illinois Environmental Regulatory Group; Lauren Lurkins, Illinois Farm Bureau; Jean Payne, Illinois Fertilizer and Chemical Association; Julie Armstrong, Illinois NREC; Albert Cox, Metropolitan Water Reclamation District of Greater Chicago; Catie Gregg, Prairie Rivers Network; Albert Ettinger, Sierra Club/Mississippi River Collaborative; Ashley Maybanks, The Nature Conservancy; Gene Barickman, USDA-NRCS; Gregg Good, Illinois EPA; Jennifer Woodyard, Illinois Extension; Haley Haverback, Illinois Extension; George Czapar, Illinois Extension; John Quinn, Argonne National Library; Greg McIsaac, University of Illinois; Mark Schleusener, USDA-NASS; Emily Bruner, American Farmland Trust; Anna-Maria Marshall, University of Illinois; Michelle Bloomquist, Illinois Dept. of Natural Resources; Valerie Booth, Illinois Department of Agriculture; Eliana Brown, Illinois Extension; Kate Gardiner, Illinois Extension

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Sanjay thanked everyone for their comments – the Illinois EPA received over one thousand. The next step is to have the Illinois EPA Bureau of Water technical staff review the comments over the next two months. Once the comments have been reviewed, the bureau will recommend a plan of action and determine an official agency position.

Updated Science Assessment – Greg McIsaac

Greg McIsaac thanked all those who provided funding, data contributions, and helpful comments on the work. He has been working on updating the statewide loads for nitrogen and phosphorus. The baseline for this work is 1980 to 1996.

Statewide riverine flows and loads have increased in the last five years by 13% from the baseline, with an increase in nitrogen load of 7% and increase in phosphorus load of 28% since the baseline period. Statewide point source discharges have decreased, with a 14% reduction in Total N and a 22% reduction in Total P from 2011 to 2017. The annual, 5 year moving average for statewide annual water yield has been above the baseline for a number of years. Since the baseline, river flow has increased in all the state rivers measured, but especially in the Rock River, which increased by about one third.

Dr. McIsaac noted some challenges in monitoring and measuring the HUC 8 watersheds. Drainage areas of the monitoring locations do not always match the HUC boundaries and extrapolating from monitored area to HUC area introduces uncertainty and probability of inaccurate estimates. For 16 HUCs, monitored drainage area is between 85 – 115% of the actual HUC area. For another 9 HUCs, monitored drainage area is between 65 – 135% of the actual HUC area. For 15 HUCs, monitored drainage area differs from the HUC area by more than 35%. For 9 more HUCs, there is no monitoring data available. This is accounted for by taking averages of neighboring HUCs. Two HUCs draining to Lake Michigan are ignored. Corrections to Des Plaines HUC estimates are forthcoming.

There were some changes in HUC 8 estimation for Lower Sangamon and Lower Illinois-Senachewine Lake. There were some smaller changes in regards to water yield as well. For the original science assessment, small tributaries were used as proxies. In the update, upstream loads were subtracted from downstream load. Negative load estimates occurred in some years, possibly due to denitrification. Comparison of upstream and downstream concentrations is consistent with denitrification loss.

Point source loads for nitrogen are primarily concentrated in the Chicago region.

There is a close link between the water yield and TP loads. The Illinois River is the largest contributor to TP. In terms of individual facilities, the Sanitary District of Decatur is now the largest discharger of phosphorus, followed closely by some of the larger facilities in the Chicago area.

Dr. McIsaac provided some suggestions for further study and future updates. Suggestions include to identify the factors affecting changes in loads, sample rivers more frequently, especially for P at high flow, QA/QC point source data, use more than one year of point source discharge data, focus on monitored watersheds rather than HUCs, estimate loads in unmonitored watersheds by watershed characteristics rather than neighboring watersheds, and evaluate uncertainty and climate change impacts.

Questions

- What's the source of data for out of state data and do we trust it?

- Sources vary. Dr. Mclsaac used both USGS Super Gages and Illinois EPA sampling at the state border. For the Illinois River, he scaled back the loads by the fraction that's in neighboring states.
- In the report, with regards to data collected from superstations, that data was not used in determining estimates. What kind of recommendation do you have for dealing with that kind of data in the future?
 - The reason he didn't use the superstation data is that there is a difference between what the probes measure and the continuous monitoring. He wanted to use consistent methods to compare the baseline years, so he maintained the original method.
 - Another Policy Working Group interjected that when comparing data, it's best to use a similar approach and method of data collection. We should be looking to get better and better data collection.
- Your suggestion to focus on monitored watersheds makes a lot of sense. Do you or Trevor know how to align the practices with changes in water quality can align?
 - It's a good question, but it goes beyond what Dr. Mclsaac has worked on. He thinks it would be valuable information to have and Trevor added that we would need more data to make those comparisons. Currently, we only have cost-share data.
- We don't know why we're getting this increase in phosphorus with the point source?
 - There are a few ideas floating around – more intense rain events is one example. Factors and causes may vary across the state. Phosphorus has very long lag times as well, due to the storage in wetlands and river beds.
- Is there any value in looking at soil data in comparison to these high areas?
 - Not to Dr. Mclsaac's knowledge. There was a survey done in 2007 or 2008, but he's not sure if there's been a model developed.
- In the original science assessment, we didn't have superstations or real numbers for pounds moving. So it's possible that those numbers were estimated incorrectly?
 - Yes, it's possible. Nitrate loads tend to be higher when measured with superstations, but phosphorus loads are relatively close.

NASS Survey Results – Mark Schleusener

The NASS Survey is sent to farmers who have between 100 – 10,000 acres of farmland. This year, the survey was sent to 1,096 farms. There were two mailings and those who hadn't responded yet received reminder calls in late March as well. Funding for the survey is provided by NREC.

This year's survey response rate is better than that of the last survey, with usable reports up 11%. Mark explained that the NASS Survey has been going out for a few years now, thus familiarity may contribute to increased farmer participation. Mark noted that common items like tilled acres or MRTN have margins of error of 5 – 15%, while margins of error are higher for rarer practices like bioreactors.

Survey results show that fewer farmers are using the MRTN strategy in favor of other industry-approved techniques. Julie Armstrong noted that in previous surveys, MRTN was the only option for nitrogen management strategies, whereas this year the "other industry-approved technique" was added as an option. It is possible that respondents for past surveys marked they were using "MRTN" even if they were using a different strategy, which would explain the decline in MRTN responses for this survey.

The most popular reason for reducing phosphorus applications was soil test information, followed by updated phosphorus removal rates in the Illinois Agronomy Handbook, and other reasons, including cost.

General knowledge questions show that respondents are most familiar with cover crops management and the MRTN strategy and least familiar with bioreactors, with over half of respondents reporting they are not at all knowledgeable about bioreactors. Mark noted an increase in “not at all knowledgeable” and “slightly knowledgeable” responses compared to the previous survey. This information could be used to direct outreach and education efforts to producers.

Questions

- On that last slide, do you know if people are saying there’s 160,000 acres of constructed wetlands or acres treated by the practice?
 - The number represents acres draining into constructed wetlands.
- Does the survey explain what a constructed wetland is compared to a wetland?
 - Yes, people don’t read the survey questions very carefully so there is always room for lack of understanding.
- The percentage of corn acres with Fall/Winter nitrogen applied with a nitrification inhibitor seems low, do you know why?
 - The number of acres is correct, but the accompanying percentage is based on all corn tilled acres for the year, not just those in the fall.
- Do you ask what their total pounds of nitrogen are?
 - No, there is another data source that shows NPK on corn and soybeans. Some other sources have similar information.

UMRBA Act, USGS Website – Gregg Good

The last Nutrient Monitoring Council meeting was March 19th, 2019. Jong Lee gave an update on the Great Lakes to Gulf Virtual Observatory, which is meant to integrate water quality data from various sources and is available publicly at greatlakestogulf.org. Momcilo Markus presented to question whether there was a way to add climate variability/change to the NLRS and make climate-normalized goals. Kelly Warner and Paul Terrio gave an update on the USGS Super Gages, the impact of the government shutdown, and future Super Gage network funding. Currently, data will be collected via Super Gages through September 2020, after which Illinois EPA can no longer fund the project. Gregg asked the group to reach out if someone knows of a funding source. The next Nutrient Monitoring Council meeting is September 10th.

Gregg also showed the group how to navigate the new USGS Super Gage website and provided an explanation on the proposed Upper Mississippi River Water Quality Improvement Act.

The Upper Mississippi River Basin Association (UMRBA) is a five-state organization formed by the governors of Illinois, Iowa, Minnesota, Missouri, and Wisconsin to coordinate river-related programs. The purpose of the proposed act is to better manage and understand sediment and nutrient flow from the Upper Mississippi River to the Gulf of Mexico and to improve and sustain clean water in the Upper Mississippi River and its watershed through a state-federal coordinated monitoring, assessment, and protection measures. This has been worked on over the last five or six months and Gregg thinks it would support what the Policy Working Group is doing regarding funds for monitoring and implementation. The next UMRBA meeting is in a couple of weeks in Moline, Illinois.

Biennial Report

Report Outline – Eliana Brown

Eliana outlined the chapters of the report and the logic model.

Staff and Financial – Eliana Brown

Eliana thanked everyone for completing and submitting spreadsheets. Staff involved in NLRs activities has increased. Spending overall in the agriculture sector has gone down since 2016 with a greater fraction of private spending in 2018. In the point source sector, expenditures increased in 2018 with Fox Metro reporting. Rick Manner noted that there is probably underreporting due to the voluntary nature of the spreadsheet submittal. Three partners responded to represent the stormwater sector.

Outreach – Anna-Maria Marshall

Analyses are based on organizations' reports about outreach and communication. This is for the agriculture sector today, stormwater and point source analyses are coming soon. Comparisons are complicated, as there have been changes to the definitions of types of outreach and county SWCDs started reporting. Different organizational reporting styles may contribute to underreporting as well. While there were fewer overall events, attendance at these events doubled. The popularity of the outreach types (print/media, radio/tv, social media and webinars) is about the same. Social media presence has increased, but is still underreported. The NLRs itself was discussed at 37% of reported events with topics such as cover crops, soil health, and nutrient management discussed often as well. Information and training on specific best management practices like technical assistance and rental programs have increased.

Agriculture Land Measures – Warren Goetsch

Warren thanked the organizations and entities that provided the data and thanked Trevor, Eliana, and Kate for putting it into a format that is easy to understand for the report. There have been significant gains in the last few years in cover crop acres. IDNR show CREP easement acres, which increased after the NLRs release and have plateaued in the past few years. Nutrient BMPs enrolled through NRCS EQIP has seen a slight decline in cover crops since 2017 with an increase in nutrient management. New wetland acres enrolled in WREP show increases in the last few years with a drop-off in 2018. New acres enrolled in CSP show that cumulative acres are increasing. Nitrogen and phosphorus load reductions were applied to the Illinois EPA 319 program, so you can see the reductions per year for each practice. Known bioreactors and their acres treated in Illinois have doubled in the last two years. Cover crops have dominated. The department, in cooperation with SWCDs, conducts the Soil Transect Survey. The 2018 HUC 8 maps show the areas meeting or exceeding Tolerable (T) soil loss Graphs showing trends for types of tillage on corn, soybean, and small grains over the years was presented. We're not making the gains that we'd like, but we've seen a reduction in ephemeral erosion in the last few years. There will be an accompanying paragraph explaining the significance of these additional graphs and maps.

Point Source – Trevor Sample

The Hypoxia Task Force is currently developing a report on nutrient loads from point sources in the Upper Mississippi River Basin, which used the water pollutant loading tool on the ICIS data system to calculate loads. The report focused on major municipal facilities and the tool uses reported flow and concentration data reported by facilities through DMRs. Where a facility does not report, concentrations are estimated. The information was sent to each state to review and Illinois EPA found some errors.

While the 213 Major municipals represent the largest nutrient loads, the original Science Assessment included industrial and other minor facilities as well, so these loads were estimated for 2017 to provide a proper accounting of total statewide point source nutrient loads. Water Pollutant Loading Tool was used to estimate nutrient loads for Major/Minor industrials. Power Plants were excluded, as it is difficult to discern intake water from phosphate additions. Minor Municipal Facilities were given the same loads as 2011 and data for MWRDGC, Decatur SDD, and Sauget were obtained directly from the facilities or their websites.

There was about a 22% reduction in phosphorus and a 14% reduction in nitrogen in 2017. Trevor is still working on 2018 numbers. All of this will eventually be available by HUC 8, some of it already is available and it can be uploaded to the Great Lakes to Gulf portal. The 2017 Biennial Report gave statewide values for permits issued with phosphorus limits, permits to be issued requiring Optimization and Feasibility Studies, permits issued awaiting Optimization and Feasibility Studies, and the Optimization and Feasibility Studies submitted. These were also reported by watershed and study group areas. These measures will be updated for the 2019 Biennial Report. There will be updates to the TMDLs, CAFOs, the state revolving fund, and water quality trading as well.

Adaptive Management Chapter – Trevor Sample

In 2018, some Policy Working Group members recommended that the 2019 Biennial Report address performance benchmarks, particularly for agriculture implementation tracking. The Performance Benchmark Committee met in August 2018 and again in April 2019, where a draft Performance Benchmark – Adaptive Management chapter was presented and discussed. In the chapter, we’d like to explain the assumptions behind the agriculture implementation scenarios and how to establish conservation practice “benchmarks” without choosing a scenario. We plan to look at implementation trends so far and combine practice data to estimate overall load reductions. For point source implementation, we will look at the trends for point source reductions realized from the 2011 baseline loads to the 2017 and 2018 loads and project potential load reductions if all facilities are meeting the 1.0 mg/L and 0.5 mg/L goals.

Adaptive management will be a new chapter that wasn’t in the previous Biennial Report. It will discuss the role of the Science Team and the processes for adding new agriculture conservation practices and updating practice performance. Future Biennial Reports may add practices or update practice performance, potentially changing the scenarios. Cost-share of practices may drive implementation as more programs are available to incentivize adoption. There’s also the potential to designate additional priority watersheds. Trevor thought it would be useful to include a section on additional resource needs as well.

Report Logistics – Eliana Brown

The Steering Committee will send a draft report to the Policy Working Group by late June. Members will have two weeks to review the draft report and submit any comments. Final draft of the report is due to the Illinois EPA sometime in August or September, depending on how many comments are received. After a final review, the Biennial Report can be printed and released.

Hypoxia Task Force Update – Trevor Sample, Warren Goetsch

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Warren informed the group that Dave Ross, Assistant Administrator for the Office of Water at the US EPA, is looking for more ways to engage the market. Warren noted the discussions that developed at the meeting were interesting and that he suggested that the federal government adopt and fund more programs, like the federal crop insurance rebate program for cover crops.

Louisiana provided highlights from their nutrient strategy. There are two large projects with freshwater diversions in Lake Pontchartrain and Lake Okeechobee. There was a gulf science update, a report on the nonpoint source, and the piloted project in Arkansas and Indiana is expanding to Illinois, Kentucky, and Minnesota. Trevor added that all the states are in different places in their strategies and everyone is trying to make sense of the data. The next meeting will be held in Kentucky this fall or winter.

The gulf cruise that determines the hypoxic zone size is setting sail this summer. Funding for the cruise continues until 2020. The Hypoxia Task Force is exploring other means of measuring the hypoxic zone.

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