phosphorus discharges from point sources down to a concentration of 0.3 mg/L or lower as was recommended by the USEPA Science Advisory Board.

A scenario from the Science Assessment should be adopted to achieve the Phase 1 milestones and Targets, keeping in mind that additional measures may be taken to meet or exceed the milestones and targets. Scenario NP1 or NP2 should be adopted to meet the Targets. Scenario NP2 is the only scenario that includes reductions from both point source and agricultural practices and meets the 45% reduction target for both total phosphorus and Nitrate-nitrogen. If NP1 is selected as the scenario, it should be adjusted to meet the 45% Nitrate-nitrogen reduction target, as the current option only provides 35% reduction. Due to the low cost and high effectiveness of bioreactors at removing Nitrogen, more could be added to Scenario NP1 in order to reach the target of 45% reduction by 2040.

It is important to note that because nutrient losses have increased since the baseline years of 1980-1996, larger reductions are now needed and 45% reductions serve as a conservative goal, while obviously more easily achievable. Reductions of 46% for nitrate-nitrogen and 50% reduction for phosphorus are more appropriate targets based on the recent increase in nutrient losses.

In addition to adopting concrete scenarios for the Phase 1 milestones and final Targets, interim five-year targets should be set for meeting these two important milestones. The plan should include interim practice adoption benchmarks for both needed agricultural management practice changes and wastewater treatment improvements that follow a schedule at least as aggressive as 20% of the needed improvements by 2020, 40% by 2025, 60% by 2030, 80% by 2035 and 100% by 2040. We recognize that the Phase 1 milestone of 25% reduction by 2025 for Total phosphorus is slightly ahead of this schedule. We fully anticipate that wastewater treatment improvements can be made on a more aggressive timeline and that phosphorus reductions of greater than 45% will be needed to address current water quality problems due to excessive nutrients within Illinois waterways.

Comments on Specific Text

- Page 2.1, Table 2.1:

Table 2.1. Watershed milestones and targets.

Nutrient	**Phase 1 Milestones**	**Target**
Nitrate-nitrogen	15 percent by 2025	45 percent by 2040
Total phosphorus	25 percent by 2025	45 percent by 2040

Page 2.1 states that the load reduction goal is intended to apply equally across the state's 8-digit HUCs. Given that priority watersheds have been identified in the plan, and given that some watersheds contribute far more nitrogen and phosphorous than others, we think this statement should be changed to reflect a priority watershed approach (while acknowledging that everyone needs to do their part).

Chapter 4: Watershed Prioritization

Comments on Specific Text

- Page 4.2 under "Nitrate-Nitrogen":

Add Flint Creek – Henderson Creek Watershed (0708104) to the list of priority watersheds (or please explain why it was removed since the May 2014 draft).

- Page 4.3 under "Priority Watersheds for Point Sources":

  While the Chicago/Little Calumet Watershed (07120003) does contribute a substantial total phosphorus load (3.69 million lb/yr), it does not rank at the top of the prioritization due to current water quality and the lack of watershed-based plans in the watershed. It will be among the watersheds required to develop a watershed based plan identifying needed reductions in phosphorus. ~~This will be considered when addressing point source inputs.~~

- Page 4.4 under "Nutrient Loss Reductions in Priority Watersheds":

Please clarify which watersheds are the 'top 10 watersheds' that will be required to develop a watershed based plan; on pages 4.2-4.4 watersheds are given multiple names (e.g., 07130001). It would be helpful if the 10 watersheds were mapped, like the KIC watersheds were in Figure 4.1. Clearly the Chicago/Little Calumet Watershed with its high phosphorus load should be included.

Chapter 5: Nutrient Loss Reduction Strategy for Point Sources

General Comments

This chapter does not, but should (according to the Stoner memo), address how the agency will ensure the effectiveness of stormwater permits that discharge to nutrient-impaired waters; permittees, as point sources, should be addressed in this chapter. Adding discharge or receiving water monitoring and reporting requirements to permits is one way the agency can ensure effectiveness.

Comments on Specific Text

- Page 5.2 under "Fox River Study Group":

Segments of the Fox River have also been listed as impaired due to aquatic algae in recent 303(d) reports.

ISWS has developed computer models for FRSG of the Fox River watershed downstream of the Stratton Dam, including 33 watershed loading models and a Fox River mainstem receiving stream model. These were calibrated using data collected by FRSG members as well as low flow and storm event data collected by ISWS and Deuchler Environmental. Currently, FRSG, working with the consulting firm Limnotech and ISWS, is using the models to evaluate alternative management scenarios, including dam removal (13 dams remain on the Fox River mainstem)and nutrient reductions from point sources, urban runoff, and agricultural runoff in order to complete the development of the Fox River Implementation Plan. This plan, scheduled to be completed by ~~July~~December 2015, will include needed reductions in total phosphorus discharges and instream projects to resolve the dissolved oxygen and algal impairments of the Fox River.

- Page 5.5 under "Permit Limits for Metropolitan Water Reclamation District of Greater Chicago":

When the permits for the Calumet, Stickney, and O'Brien plants, which discharge a total of 5.7 million lb P/yr and are a primary contributor to total phosphorus loading to the Illinois River, were renewed in 2013, total phosphorus limits of a monthly average of 1 mg/L were included for implementation in the next 4-10 years. After the phosphorus limit is fully implemented, and assuming a practical annual average effluent concentration of 0.7 mg/L, phosphorus loading will be reduced to approximately 2.6 million pounds annually. The extent of the further reductions needed to meet water quality standards applicable to the Chicago Area Waterways, the Lower Des Plaines and the Upper Illinois River will be studied in order to allow WQBELs to be written into the permits to be issued in 2018.

- Page 5.5 under "Total Maximum Daily Loads (TMDL)":

At the time of publication, 76 TMDLs are under development. IEPA will shortly, like other states, begin to more conscientiously list rivers and streams as impaired by phosphorus as necessary and begin preparing TMDLs needed to prevent violations of the dissolved oxygen standards and narrative standards against "offensive conditions" and "unnatural sludge."

Chapter 6: Nutrient Loss Reduction Strategies for Agricultural Non-Point Sources

General Comments

The Strategy charges agricultural non-point sources with meeting the state's nitrogen and phosphorus loss reduction goals in proportion to their contribution. However, the Draft Strategy provides no further guidance or expectations other than to suggest that voluntary best management practice adoption will help (but by no means guarantee) goal attainment. Interim benchmarks for determining if the voluntary approach is working are needed. We suggest that the Strategy set five-year interim targets for the adoption of agriculture management practices identified in an adopted scenario that meets the 45% reduction goals for both Total Phosphorus and Nitrate-Nitrogen (like Scenario NP2 does): 20% by 2020, 40% by 2025, 60% by 2030, 80% by 2035, 100% by 2040. Consequences should be identified for not meeting targets so farmers have a strong motivation to act. For example, the Strategy could state that practices in Scenario NP2 will become mandatory for certain farmers if the 2025 goal and subsequent goals are not met. There is precedent for creating cleanup plans with consequences; see the Chesapeake Clean Water Blueprint http://www.cbf.org/how-we-save-the-bay/chesapeake-clean-water-blueprint/what-is-the-chesapeake-clean-water-blueprint).

Several agriculture groups have agreed to start tracking adoption of certain nutrient stewardship practices (as discussed in Chapter 9), but it is unclear whether the tracking will be statewide or reflect all the practices in Scenario NP2. The Strategy should commit to establishing the current, statewide adoption rates for the agricultural practices identified in Scenario NP2 so that the state has a baseline to work with.

Create methods for tracking future practice adoption.

This chapter should include a table consisting of the actions that need to be taken for the pollution reduction goals to be met. Agencies and other entities should be assigned to particular actions with deadlines. Without assigned tasks and accountability, the Strategy will not succeed.

State Programs and Projects section

There is a general lack of discussion about how or whether these programs will change (e.g., become more targeted) in the future to address nutrient loss reduction, or whether agencies will/can seek increased funding for these programs. The Strategy would benefit from a discussion of the desired funding and future of these programs, a future that allows these programs to be a more effective tool for nutrient loss reduction.

The Strategy should commit IEPA to establishing and implementing a strategy for inspecting small and medium AFOs in priority watersheds for discharge violations, once all large CAFOs are inspected.

The Strategy should commit IEPA to petitioning for a rule that updates 35 IAC 560 to require all who land-apply livestock waste to meet technical standards that minimize the loss of nitrogen and phosphorus. Currently, 35 IAC 560 states: "The intent of this document is to present livestock waste application guidelines for the livestock producers of Illinois." (Section 560.101(c)) As such, the majority of Illinois' livestock operators (i.e., small AFOs, medium AFOs, and non-operators who apply livestock waste) are

allowed unbridled discretion in how livestock waste is land-applied. This is a serious gap that the state should fill.

Comments on Specific Text

- Page 6.16 under "Expanded Outreach and Education":
  Add need for a water quality monitoring program to help farmers and landowners better understand the nutrient losses from their fields.

Chapter 7: Nutrient Loss Reduction Strategy for Urban Non-point Sources

General Comments

State IEPA's support for legislation that gives authority to all Illinois counties to pass county-wide stormwater plans and ordinances.

Target 319 funds to nutrient-impaired watersheds in the future.

Chapter 8: Numeric Nutrient Criteria

General Comments

IEPA should take action on the following, and include descriptions of these actions in this section:

- *Move forward and establish a statewide phosphorus standard for rivers and streams now. There are ample data from Illinois and surrounding states to do so.*
- *Write numeric permit limits to prohibit discharges that may cause or contribute to violations of dissolved oxygen and narrative standards regarding plant and algal growth of other than natural origin to prevent impairments of aquatic life, drinking water and recreational uses of rivers, streams and lakes.*
- *Conduct studies on watersheds known to contribute large volumes of phosphorus downstream, like Chicago and Des Plaines Rivers, to determine phosphorus reductions needed to protect water quality standards and existing and designated uses.*

Detailed Comments on Numeric Nutrient Criteria

Chapter 8 of the Illinois Nutrient Reduction Strategy focuses on Numeric Nutrient Criteria, recognizing that numeric criteria for nitrogen and phosphorus (N and P) are ultimately necessary to meet the requirements of the Clean Water Act and the state's nutrient reduction goals. Regrettably, however, despite the availability of substantial data that could be used to set phosphorus criteria, the Draft Strategy seizes on the all-to-common refrain of "scientific uncertainly" to justify further unwarranted delays in the development of these crucial water quality standards.

U.S. EPA has recognized, and continues to recognize, that numeric nutrient criteria are one of the "key building blocks" necessary for effective state nutrient reduction programs. The Agency's 2011 Framework Memo states that:

> *It has long been EPA's position that numeric nutrient criteria targeted at different categories of water bodies and informed by scientific understanding of the relationship between nutrient loadings and water quality impairment are ultimately necessary for effective state programs. Our support for numeric standards has been expressed on several occasions, including a June 1998 National Strategy for Development of Regional Nutrient Criteria, a November 2001 national action plan for the development and establishment of numeric nutrient criteria, and a May 2007 memo from the Assistant Administrator for Water calling for accelerated progress towards the development of*

> *numeric nutrient water quality standards. As explained in that memo, numeric standards will facilitate more effective program implementation and are more efficient than site-specific application of narrative water quality standards.*[2]

The 2011 Framework Memo requires states to establish a "work plan and phased schedule" for numeric nitrogen and phosphorus criteria development, stating that "[a] reasonable timetable would include developing numeric N and P criteria for at least one class of waters within the state (e.g., lakes and reservoirs, or rivers and streams) ***within 3-5 years.***"

Nearly four years have passed since EPA established this "reasonable timetable" in the Framework Memo, and Illinois has not yet even begun the rulemaking process for either N or P criteria. Instead of beginning the rulemaking process for at least P criteria now, the Draft Strategy recommends a further delay of an additional 2½ years, until August 2017, to file proposed rules with the Illinois Pollution Control Board. In the meantime, the Draft Strategy recommends convening a "Nutrient Science Advisory Committee" to further study "technical issues concerning nutrients and their effects in flowing waters."

Although we welcome further scientific study, there are already substantial data available that support adoption of protective numeric phosphorus criteria in Illinois. Numerous studies have confirmed that total phosphorus must be limited to below 0.1 mg/L to avoid eutrophication and other water quality problems in freshwater systems like those present in Illinois. Thus, it is not warranted, justified, or prudent to delay the initiation of a rulemaking process at the IPCB for another 2½ years (or more) so that an "Advisory Committee" can further study nutrient standards. IEPA can and should use existing data to propose numeric P criteria now, and the Advisory Committee can still be convened to focus on developing the data necessary to move forward with N criteria in the near future.

The core problem with the Draft Strategy is its implied assumption that only Illinois water quality data can be used to set protective nutrient criteria for Illinois waters. However, this is not a reasonable or logical approach, particularly in a degraded system such as that currently present in Illinois. As the Draft Strategy points out, there are pervasive water quality problems in Illinois that currently "make it difficult to determine the direct cause-and-effect relationship between nutrient levels in water and impairments." This should not be surprising, and it is also beside the point. A water quality standard is intended as a long term goal—it's the end state that we're shooting for in order to fully support aquatic life and recreation uses. Therefore, the fact that Illinois waters have such high levels of P in them and, in addition, that other problems that are further confounding the current ability to establish a cause-effect relationship between P and aquatic life outcomes shouldn't prevent regulators from using data from other similar states and ecoregions to set a standard that we ultimately want to achieve in Illinois. As U.S. EPA points out in the Framework Memo:

> *We believe that a substantial body of scientific data, augmented by state-specific water quality information, can be brought to bear to develop such criteria in a technically sound and cost-effective manner.*

Instead of using Illinois-specific data to augment the existing "substantial body of scientific data," as U.S. EPA recommends, the Illinois Draft Strategy focuses its inquiry on Illinois data alone, while ignoring everything else. This is not reasonable, and it will lead to further unnecessary delay in the establishment of protective numeric standards for Illinois waterways.

It is clear that using regional data combined with Illinois data, a phosphorus criteria for Illinois rivers and streams can be proposed to the Illinois Pollution Control Board for adoption immediately. After

---

[2] U.S. EPA, *Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for*

reviewing Illinois data, U.S. EPA concluded that studies already in the possession of IEPA "can help inform scientifically defensible thresholds for statewide or ecoregional numeric nutrient criteria, and can be used in combination with other methodologies recommended by EPA for deriving numeric nutrient criteria (e.g. reference condition and mechanistic modeling.) Letter of L. Holst, E. Behl and T. Angardi (9-17-2013). Wisconsin has adopted standards of 0.070 for streams and 0.1 mg/L for rivers and Minnesota has adopted a total phosphorus standard of 0.15 for its southern corn belt region.[3] *Scientists who have worked in a wide variety of Illinois waters have found a direct statistical relationship between total phosphorus levels and algal growth (where there is adequate sunlight) in those waters with less than 0.2 mg/L phosphorus, but unfortunately there are relatively few Illinois water bodies with anything close to natural phosphorus levels. Illinois should go forward now with a proposal for numeric phosphorus standards equivalent to the standards that have been adopted by Wisconsin.*

As it is, Illinois' continued delay in adopting numeric phosphorus criteria is particularly unfortunate in light of the state's continued failure to implement its narrative water quality standards in NPDES permits despite repeated instructions from U.S. EPA to do so.[4]

Although several parties have expressed concerns about the economic impacts of implementing numeric nutrient criteria in permits, these economic concerns are not relevant to the science-based exercise of establishing protective numeric criteria. We believe that many of these economic predictions are overstated and based on "worst-case" predictions that fail to account for the flexibility inherent in the CWA standard-setting and permitting process. That said, there are many existing CWA tools that can be used to moderate the impact of implementing numeric nutrient criteria in Illinois, including variances, site-specific criteria (if justified), TMDLs, and watershed plans. The Agency and stakeholders should focus our collective effort on these implementation issues so that resources can be directed towards beginning to address the highest priority issues, instead of continuing to delay the establishment of criteria.

Chapter 9: Measurement, Management, and Implementation

General Comments

The Strategy should call for increased monitoring of DO, chlorophyll a and other water quality factors relevant to nutrient pollution.

Conclusion

As we have detailed in these comments, the Illinois Nutrient Loss Reduction Strategy will be much improved by the adoption of a scenario containing specific point source and agricultural practices, as was developed in the Science Assessment, designed to meet the 45% reduction targets for Total Phosphorus and Nitrate-nitrogen. In addition to the 2025 Phase 1 Milestone, the Strategy should include a final Target date of 2040. Interim benchmarks for the adoption of all practices included in the adopted scenario should

---

[3] The science is clear that bringing down phosphorus levels from a level well over the level at which phosphorus is limiting (e.g. >0.6) to a lower level at which it is still not limiting (0.2 mg/L) is unlikely to make an observable difference to water quality. Jarvie, Helen P., Sharpley, Andrew N., Withers, Paul J.A., Scott, J. Thad, Haggard, Brian E. and Neal, Coling, *Phosphorus Mitigation to Control River Eutrophication: Murky Waters, Inconvenient Truths, and "Postnomal" Science*, J. Environ. Qual. 42:295-304 (2013) at 299. The fact that Illinois waters are so far above the proper level means that making the necessary reductions may take decades for some water bodies. It is not, however, a reason to give up any more than the extreme levels of pollution that were present in many Illinois waters in 1972 was a reason to quit trying.

[4] See Letter from Tinka Hyde, EPA Region 5, to Marcia Wilhite, IEPA (Jan. 21, 2011).

be set to 20% by 2020, 40% by 2025, 60% by 2030, 80% by 2035 and 100% by 2040. A system for tracking the adoption of the agricultural practices should be developed. (Adoption of point sources practices should be easily tracked through NPDES permits.)

The Strategy should include a plan to move forward to establish statewide phosphorus water quality standards for rivers and streams without delay. The Strategy should clearly identify the priority watersheds for nutrient loss reduction, require timely development of plans designed to resolve local nutrient-caused impairments and target assistance (e.g. 319 funding) to these watersheds. Increased monitoring for nutrients and nutrient-related parameters such as dissolved oxygen and chlorophyll a should be a part of the Strategy in order to better inform watershed groups, farmers and landowners about nutrient losses.

Sincerely,

Albert Ettinger
Counsel for Sierra Club, Illinois Chapter

Cindy Skrukrud and Katrina Phillips
Sierra Club, Illinois Chapter

Kim Knowles and Stacy James
Prairie Rivers Network

Brad Klein and Jessica Dexter
Environmental Law & Policy Center

Daniels, Simon

From: Sierra Club <katrina.phillips@sierraclub.org> on behalf of Glenn Hopkins <sierra@sierraclub.org>
Sent: Saturday, January 24, 2015 9:56 PM
To: Daniels, Simon
Subject: NLRS Comments

NLRS
PC-968

Jan 24, 2015

Mr. Simon Daniels IEPA
IL

Dear Mr. Daniels IEPA,

I appreciate the work of many that has gone into the draft Illinois Nutrient Loss Reduction Strategy, but we need a stronger plan with defined steps to meet a goal of 46% reduction in nitrogen and 50% reduction in phosphorus by 2040. The plan must have interim benchmarks that allow us to measure its success and ensure that we are on track to achieve the needed reductions.

Despite the numerous known impacts of excessive phosphorus levels in waterways, Illinois still lacks a water quality standard for phosphorus for its rivers and streams. After years of collecting data and conducting studies, it is time to take action. IEPA must move forward and adopt a phosphorus standard to protect our waterways and the ecosystems they support.

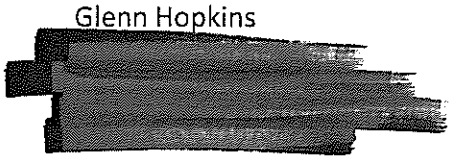
IEPA should also conduct studies on watersheds known to contribute large volumes of phosphorus downstream, like the Chicago and Des Plaines Rivers, to determine what levels of phosphorus these waters can tolerate. These studies should focus on the impacts of various levels of phosphorus on algae and dissolved oxygen levels, and in turn on aquatic life.

I urge you to take these steps to protect our Illinois waterways and reduce our contribution to Gulf Hypoxia, the second largest hypoxic zone in the world and the largest hypoxic zone currently affecting the United States.

Please make sure the final strategy is strong enough to effectively protect our waters from nutrient pollution. Thank you for your attention on this matter.

Sincerely,

Glenn Hopkins



Daniels, Simon

From: Sierra Club <katrina.phillips@sierraclub.org> on behalf of Robert Roberson <sierra@sierraclub.org>
Sent: Saturday, January 24, 2015 9:56 PM
To: Daniels, Simon
Subject: NLRS Comments

NLRS
PC-967

Jan 24, 2015

Mr. Simon Daniels IEPA
IL

Dear Mr. Daniels IEPA,

I appreciate the work of many that has gone into the draft Illinois Nutrient Loss Reduction Strategy, but we need a stronger plan with defined steps to meet a goal of 46% reduction in nitrogen and 50% reduction in phosphorus by 2040. The plan must have interim benchmarks that allow us to measure its success and ensure that we are on track to achieve the needed reductions.

Despite the numerous known impacts of excessive phosphorus levels in waterways, Illinois still lacks a water quality standard for phosphorus for its rivers and streams. After years of collecting data and conducting studies, it is time to take action. IEPA must move forward and adopt a phosphorus standard to protect our waterways and the ecosystems they support.

IEPA should also conduct studies on watersheds known to contribute large volumes of phosphorus downstream, like the Chicago and Des Plaines Rivers, to determine what levels of phosphorus these waters can tolerate. These studies should focus on the impacts of various levels of phosphorus on algae and dissolved oxygen levels, and in turn on aquatic life.

I urge you to take these steps to protect our Illinois waterways and reduce our contribution to Gulf Hypoxia, the second largest hypoxic zone in the world and the largest hypoxic zone currently affecting the United States.

Please make sure the final strategy is strong enough to effectively protect our waters from nutrient pollution. Thank you for your attention on this matter.

Sincerely,

Robert Roberson
[redacted]

Daniels, Simon

NCRS PC-970

From:	Granato, Thomas <GranatoT@mwrd.org>
Sent:	Saturday, January 24, 2015 10:02 PM
To:	Willhite, Marcia; Daniels, Simon
Cc:	Granato, Thomas
Subject:	FW: Final Comments
Attachments:	MWRD Chicago Comments -Public Comment Draft IL Nutrient Loss Re.pdf

Marcia & Simon: Attached are the comments of the Metropolitan Water Reclamation District of Greater Chicago on the Public Comment Draft Illinois Nutrient Loss Reduction Strategy. Thank you for the opportunity to provide this input. – TG

Thomas C. Granato, Ph.D., BCES
Director of Monitoring & Research

Metropolitan Water Reclamation District of Greater Chicago
100 E. Erie St.
Chicago, IL 60611

312-751-5190 (voice)
312-751-5194 (fax)

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street Chicago, Illinois 60611-3154 f: 312.751.5194 312.751.5190

BOARD OF COMMISSIONERS
Mariyana T. Spyropoulos
President
Barbara J. McGowan
Vice President
Frank Avila
Chairman of Finance
Michael A. Alvarez
Timothy Bradford
Cynthia M. Santos
Debra Shore
Kari K. Steele
Patrick D. Thompson

THOMAS C. GRANATO, Ph.D., BCES
Director of Monitoring and Research
thomas.granato@mwrd.org

January 23, 2015

Marcia Willhite, Chief
Bureau of Water
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62794-9276

Dear Ms. Willhite:

Subject: Comments on Public Comment Version of Illinois Statewide Nutrient Loss Reduction Strategy

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) has reviewed the "Draft for Public Comment" version of the Illinois Statewide Nutrient Loss Reduction Strategy (Strategy) document which was released in November, 2014. We commend the Illinois Environmental Protection Agency (IEPA) and the Illinois Department of Agriculture on their efforts, through an inclusive open forum, to prepare a balanced, reasonable, science based strategy to reduce nutrient losses in Illinois while respecting the core mission of the municipal wastewater treatment agencies and agricultural producers of the state.

The MWRD is the largest point source discharger in the state of Illinois, serving approximately 5.2 million people and nearly the entirety of Cook County. The MWRD maintains a vast network of capital infrastructure to capture, convey and treat wastewater and stormwater throughout its service area. This network includes 560 miles of intercepting sewers and force mains, 22 pumping stations, 109.4 miles of Tunnel and Reservoir Plan (TARP) tunnels, 7 water reclamation plants (WRPs), two instream aeration stations, five sidestream elevated pool aeration stations, 31 flood control reservoirs and one TARP reservoir.

The MWRD is in the process of adding additional major infrastructure including effluent disinfection facilities at the O'Brien and Calumet WRPs and the Thornton and McCook TARP reservoirs; and is replacing and modernizing its older assets such as the Imhoff batteries at the Stickney west side plant. The MWRD must find a balance in the focus of its limited resources to enable it to effectively maintain, operate and expand its capital infrastructure to address the environmental and public property and health protection issues that exist in its service area.

The MWRD has adopted a resource recovery paradigm with respect to nutrients at its largest WRPs and has voluntarily accepted a 1.0 mg/L effluent phosphorus limit for these facilities based on successful deployment of enhanced biological phosphorus removal (EBPR). In the absence of demonstration of receiving water impairment and water quality criteria for nutrients, the MWRD has accepted these National Pollutant Discharge Elimination System Permit (NPDES) limits voluntarily because it believes it can operate more sustainably by successfully implementing EBPR with subsequent recovery of phosphorus, a non-renewable resource, while contributing to the state's nutrient loss reduction

efforts. This voluntary approach is predicated on the presumption that there will not be significant unforeseen limitations to EBPR at these facilities, which might require substantial infrastructure modification or upgrade or intensive utilization of costly chemical supplements or additives. Any further reduction of phosphorus beyond this level or significant reduction in nitrogen in our effluents (e.g. achieving 45 percent reduction) will surely require substantial infrastructure modification or upgrade and/or intensive utilization of chemicals. This will not be tenable on a voluntary basis, as it will interfere with the current statutorily mandated focus of the operation, maintenance, modernization and expansion of our capital assets.

The Strategy sets an overarching goal of reducing loss of phosphorus and nitrogen statewide by 45 percent. The Strategy acknowledges the fact that point sources can be subjected to permitted discharge limitations based on protection of water quality and attainable use designations under the Clean Water Act while no similar statutory or regulatory framework exists for non-point sources. If the state intends to pursue contribution to the Strategy goals for nutrient loss reduction by point sources, that go beyond the voluntary NPDES permit limits currently discussed in the Strategy, then the state will need to develop a sound methodology based on aquatic community health for determining that nutrients are causing impairment of aquatic life use attainment and an effective, defensible means of identifying the criteria that are necessary to prevent the impairment in the local receiving waters.

The IEPA recognizes in Chapter 8 of the Strategy that "the complex relationship between nutrients and water quality, coupled with the degraded conditions of Illinois water bodies, makes it difficult to determine the direct cause-and-effect relationship between nutrient levels in water and impairments" and that "scientific understanding of the relationship between nutrient loadings and water quality impairment is fundamental to the development of scientifically-defensible numeric nutrient criteria." The MWRD applauds the State for its commitment to developing a scientifically-defensible basis for numeric nutrient criteria and will not accept any outcome from the proposed future direction that is other than scientifically defensible.

Given the virtual impossibility of development of numeric criteria that are scientifically-defensible on a statewide basis (as acknowledged by the State in Chapter 8 of the Strategy), the MWRD recommends a watershed based approach where the aquatic life potential of the local receiving waters is adequately assessed, limiting stressors are identified, relationships are determined between stressor level and the aquatic life response, and water quality criteria are derived accordingly. In this approach, nutrient criteria are only developed if it is determined that nutrients are posing a significant impairment to aquatic life in the watershed. The State has recognized that its former procedure for determining nutrient impairment based on statistical approaches (e.g. 85th percentile of statewide phosphorus concentration) is not scientifically-defensible and no longer uses it to make new impairment listings. The State must not utilize it to determine watershed aquatic life impairment due to nutrients.

The MWRD has reviewed the Public Comment Version of the Illinois Statewide Nutrient Loss Reduction Strategy. We provide the following comments for your consideration:

1. Page 2.1, Figure 2.1 and Page 3.10, Figure 3.2 – Revise the figure captions to indicate that the data presented on the proportion of nitrate and phosphorus loss is based on 1997 – 2011 loads.

2. Page 3.29, paragraph 2 – The typographical error in the units and the wording in the sentence "As a final comment, point source reductions to lower standards (0.5 or 0.1

Subject: Comments on Public Comment Version of Illinois Statewide Nutrient Loss Reduction Strategy

mg/L^{-1} and 3 mg/L^{-1})..." should be revised to "...(0.5 or 0.1 mg/L total phosphorus and 3 mg/L nitrate)..."

3. Page 4.1, paragraph 1 – In the sentence "... expected to have the greatest capacity to reduce high volumes of nutrient losses annually" the word "volume" should be changed to "loads."

4. Page 4.1, paragraph 3 – "Appendix B" should be changed to "Appendix A".

5. Page 5.4, Des Plaines River – The IEPA should explain what it means by "determine the nutrient loss reductions needed to restore the Des Plaines River". It is not at all clear how nutrient loss reductions will lead to river restoration.

6. Page 5.4, last paragraph, last sentence – The statement should be revised to clearly reflect the fact that the permit limits were volunteered by the District. This sentence should state: "During the course of the permit renewal process for the Calumet, Stickney, and O'Brien plants, which discharge a total of 5.7 million lbs P/year and are a primary contributor to total phosphorus loading to the Illinois River, the MWRDGC voluntarily proposed total phosphorus limits of a monthly average of 1.0 mg/L, scheduled for implementation in the next 4 to 10 years."

7. Page 5.6, Table 5.2 – The current total phosphorus load listed for "MWRDGC" is incorrect and should be changed from 2.58 to 5.7 million lb/year. Subsequently, the load reduction should also be changed from 0 to 3.1 million lb/year.

8. Page 5.7, paragraph 2 – Regarding development of numeric nutrient criteria, the statement, "The intent is that total phosphorus be identified as a cause of aquatic life impairment, ..." While this may be IEPA's intent, the development of a "revised and strengthened" narrative water quality standard will only serve to identify stream reaches where algal impacts on dissolved oxygen are significant. It will not provide a determination of the effects of the impacts on dissolved oxygen on aquatic life or the contribution of total phosphorus concentrations to aquatic life impairment; nor will it identify the reduction of phosphorus concentration, if any, that would be required to mitigate the algal effect.

9. Page 5.8, paragraph 4 – Regarding application of biological nutrient removal technology it is stated "To promote this technology, Illinois EPA may provide flexible compliance schedules, long-term average total phosphorus limits, or other conditions consistent with the Clean Water Act and state and federal regulations." The meaning of "long-term average total phosphorus limits" in this context needs to be clarified. The MWRD encourages IEPA to implement longer term average total phosphorus limits where constraints at specific facilities make it impractical to voluntarily meet a monthly average limit of 1.0 mg/L.

   This will allow some utilities to still make a meaningful contribution to the statewide reduction goal without incurring undue financial distress or interference with other clean water initiatives they are committed to.

Subject: Comments on Public Comment Version of Illinois Statewide Nutrient Loss Reduction Strategy

10. Pages 5.9, 6.18 and 7.5 – The heading "Assuring Adequate Funding" regarding funding for the respective source of nutrients should be changed to "Funding." This change is suggested because the discussions under the heading do not indicate that funds have been identified to achieve the milestones and goals for the Strategy.

11. Page 7.3, paragraph 2- Regarding Rain Barrel Programs, the description "no-cost" should be added to the first sentence as follows: "Metropolitan Water Reclamation District of Greater Chicago communities are eligible to participate in a program that provides no-cost or low-cost rain barrels."

Finally, while the development of a statewide nutrient loss reduction strategy has been challenging, all who were involved acknowledge that even more challenging and critical to its success is the implementation effort. The Strategy outlines implementation in Chapter 9 but devotes nearly the entire chapter to listing programs and tools that exist for tracking and reporting monitoring data that can be used to gauge progress toward the Strategy's stated goals. The achievement of the 45 percent reduction goal for nitrate-nitrogen and total phosphorus is estimated by two of the scenarios listed in Table 3.17 to cost approximately $800 million annually. These scenarios are predicated on the assumption that the 263 major point sources will continue to voluntarily engineer and implement nutrient reduction practices in their facilities to meet a monthly average 1.0 mg/L total P limit (0.7 mg/L annual average) and that the non-point sources will voluntarily implement much or all of the following:

1. Convert to spring only N application
2. Introduce bioreactors on 15 to 50 percent of the 9.7 million acres of drained cropland
3. Cease applying phosphorus fertilizer on 12.5 million acres of cropland currently determined to have soil P levels in excess of fertilizer test optima
4. Implement reduced tillage on 1.8 million acres of land currently in conventional tillage
5. Introduce cover crops on 87.5 to 100 percent of all corn and soybean acreage (21.5 million acres)
6. Potentially introduce buffers on all applicable lands and perennial crops on up to 2.5 million acres of land currently in row crop

This is a staggering scale of effort by both point and non-point sources. The Strategy lists a great number of programs that are in existence to support these undertakings but does not offer a clear means by which the funding will be raised or the manner in which the funding will be focused or programs coordinated to ensure the best return on investment is made.

The MWRD believes the goals of the Strategy are achievable and is forging partnerships with many other stakeholders to develop an implementation support concept. As you may be aware, a broad coalition of stakeholders, including MWRD, have been working toward developing the vision for an Environmental Utility, or watershed protection utility, as outlined in the Mississippi River Nutrient Dialogues. The Environmental Utility approach complements the Strategy and is consistent with its nutrient loss reduction goals. It fosters and supports more widespread voluntary approaches and adaptation of effective technologies and strategies. It can implement the science assessment and some of the prioritization strategies developed in the Strategy. It would target funding from a private-public

partnership of resources to fill the gap where self-funded voluntary and regulatory approaches are not sufficient to achieve the goals.

An Environmental Utility would develop a public-private partnership with oversight to provide much needed resources for both implementation of targeted practices, as well as for monitoring to ensure resources are being targeted efficiently and progress is being made towards the ultimate goal.

The Environmental Utility concept should be explicitly included in the Strategy, and efforts to implement the Strategy should work in coordination with efforts to design a potential Environmental Utility.

The Environmental Utility approach complements the Strategy. It fosters and supports more widespread voluntary approaches and adaptation of effective technologies and strategies. It can use the science assessment and some of the prioritization strategies developed in the Strategy. It would target funding from a private-public partnership of resources to fill the gap where self-funded voluntary and regulatory approaches are not sufficient to achieve the goals.

The purpose of the Environmental Utility is to fill the gap where the reduction is not feasible logistically, economically, or not cost-effective by traditional means. The Environmental Utility approach would include both point and non-point partners. Watershed groups in the Strategy are associated with point sources and not non-point sources. However, watershed planning is encouraged for non-point sources in the Strategy (p. 6.2); the Environmental Utility could facilitate and support this. Targeted research and education are also goals of the Environmental Utility as they are for the Strategy (p. 6.7, 6.16). Funding is needed to achieve the goals of the Strategy (p. 6.18), the Environmental Utility approach can made to provide the resources to address priority needs in a cost-effective manner. Monitoring of water quality is necessary to measure progress (p. 9.0), the Environmental Utility approach can be made to be consistent with the Strategy on this need.

Other areas where the Environmental Utility can effectively support or implement the Strategy are:

1. Page 1.3-1.4. The policy working group emphasized approaches for prioritizing and targeting funding, and approaches for promoting identified BMPs. These approaches are also an element of the Environmental Utility concept.

2. Page 2.1. The Environmental Utility would initially focus on nutrients, consistent with the Strategy goal of reducing nitrogen and phosphorus load.

3. Section 3.0. The science assessment can be used to develop an implementation strategy, including an Environmental Utility approach.

4. Section 4.0. Watershed prioritization is an approach fostered by the Environmental Utility concept.

Subject: Comments on Public Comment Version of Illinois Statewide Nutrient Loss Reduction Strategy

5. Page 5.1. The Environmental Utility concept is consistent with voluntary acceptance of permit limits, where these are cost-effective. The gap that remains will be addressed within the scope of the Environmental Utility.

6. Page 6.18. Adequate funding is necessary to achieve the goals of the Strategy. Limited government funding exists. The Environmental Utility approach can reduce the necessary funding level by better focusing and coordinating reduction efforts and by developing improved technologies and practices. The Environmental Utility also offers promise of providing more resources to achieve the goals.

7. Section 9.0, Monitoring of progress towards water quality goals is essential and an important part of the Environmental Utility approach. Monitoring includes both public and private resources and the Environmental Utility offers a potentially effective means of implementing an adaptive management approach that the Strategy requires.

If the State is serious about implementing this Strategy and meeting its stated goals, it must include the Environmental Utility concept in Chapter 9 as a transformational approach that merits further consideration.

If you have any questions or would like to discuss these comments, please contact me at (312) 751-5190. To further explore the Environmental Utility concept please contact Tony Quintanilla at 312-751-5102.

Very truly yours,

Thomas C. Granato, Ph.D., BCES
Director
Monitoring and Research

TCG:tg

cc: St. Pierre
Sharma
Hill
Quintanilla
Luhrs-Draper
Zhang

Daniels, Simon

From: Sierra Club <katrina.phillips@sierraclub.org> on behalf of TONIA HOWE <sierra@sierraclub.org>
Sent: Saturday, January 24, 2015 5:04 PM
To: Daniels, Simon
Subject: NLRS Comments

NLRS
PC-971

Jan 24, 2015

Mr. Simon Daniels IEPA
IL

Dear Mr. Daniels IEPA,

I appreciate the work of many that has gone into the draft Illinois Nutrient Loss Reduction Strategy, but we need a stronger plan with defined steps to meet a goal of 46% reduction in nitrogen and 50% reduction in phosphorus by 2040. The plan must have interim benchmarks that allow us to measure its success and ensure that we are on track to achieve the needed reductions.

Despite the numerous known impacts of excessive phosphorus levels in waterways, Illinois still lacks a water quality standard for phosphorus for its rivers and streams. After years of collecting data and conducting studies, it is time to take action. IEPA must move forward and adopt a phosphorus standard to protect our waterways and the ecosystems they support.

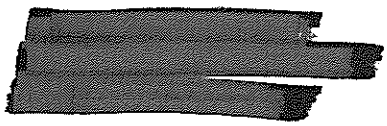
IEPA should also conduct studies on watersheds known to contribute large volumes of phosphorus downstream, like the Chicago and Des Plaines Rivers, to determine what levels of phosphorus these waters can tolerate. These studies should focus on the impacts of various levels of phosphorus on algae and dissolved oxygen levels, and in turn on aquatic life.

I urge you to take these steps to protect our Illinois waterways and reduce our contribution to Gulf Hypoxia, the second largest hypoxic zone in the world and the largest hypoxic zone currently affecting the United States.

Please make sure the final strategy is strong enough to effectively protect our waters from nutrient pollution. Thank you for your attention on this matter.

Sincerely,

TONIA HOWE



Daniels, Simon

From: Sierra Club <katrina.phillips@sierraclub.org> on behalf of Marianne Maggi <sierra@sierraclub.org>
Sent: Saturday, January 24, 2015 5:14 PM
To: Daniels, Simon
Subject: NLRS Comments

NLRS
PC-972

Jan 24, 2015

Mr. Simon Daniels IEPA
IL

Dear Mr. Daniels IEPA,

I appreciate the work of many that has gone into the draft Illinois Nutrient Loss Reduction Strategy, but we need a stronger plan with defined steps to meet a goal of 46% reduction in nitrogen and 50% reduction in phosphorus by 2040. The plan must have interim benchmarks that allow us to measure its success and ensure that we are on track to achieve the needed reductions.

Despite the numerous known impacts of excessive phosphorus levels in waterways, Illinois still lacks a water quality standard for phosphorus for its rivers and streams. After years of collecting data and conducting studies, it is time to take action. IEPA must move forward and adopt a phosphorus standard to protect our waterways and the ecosystems they support.

IEPA should also conduct studies on watersheds known to contribute large volumes of phosphorus downstream, like the Chicago and Des Plaines Rivers, to determine what levels of phosphorus these waters can tolerate. These studies should focus on the impacts of various levels of phosphorus on algae and dissolved oxygen levels, and in turn on aquatic life.

I urge you to take these steps to protect our Illinois waterways and reduce our contribution to Gulf Hypoxia, the second largest hypoxic zone in the world and the largest hypoxic zone currently affecting the United States.

Please make sure the final strategy is strong enough to effectively protect our waters from nutrient pollution. Thank you for your attention on this matter.

Sincerely,

Marianne Maggi

[redacted]

Daniels, Simon

From: Sierra Club <katrina.phillips@sierraclub.org> on behalf of Tim Loos <sierra@sierraclub.org>
Sent: Saturday, January 24, 2015 4:34 PM
To: Daniels, Simon
Subject: NLRS Comments

NLRS
PC-973

Jan 24, 2015

Mr. Simon Daniels IEPA
IL

Dear Mr. Daniels IEPA,

I appreciate the work of many that has gone into the draft Illinois Nutrient Loss Reduction Strategy, but we need a stronger plan with defined steps to meet a goal of 46% reduction in nitrogen and 50% reduction in phosphorus by 2040. The plan must have interim benchmarks that allow us to measure its success and ensure that we are on track to achieve the needed reductions.

Despite the numerous known impacts of excessive phosphorus levels in waterways, Illinois still lacks a water quality standard for phosphorus for its rivers and streams. After years of collecting data and conducting studies, it is time to take action. IEPA must move forward and adopt a phosphorus standard to protect our waterways and the ecosystems they support.

IEPA should also conduct studies on watersheds known to contribute large volumes of phosphorus downstream, like the Chicago and Des Plaines Rivers, to determine what levels of phosphorus these waters can tolerate. These studies should focus on the impacts of various levels of phosphorus on algae and dissolved oxygen levels, and in turn on aquatic life.

I urge you to take these steps to protect our Illinois waterways and reduce our contribution to Gulf Hypoxia, the second largest hypoxic zone in the world and the largest hypoxic zone currently affecting the United States.

Please make sure the final strategy is strong enough to effectively protect our waters from nutrient pollution. Thank you for your attention on this matter.

Sincerely,

Tim Loos

[redacted]

Daniels, Simon

NCRS
PC-974

From: Steve Maney <Maney@wsd.dst.il.us>
Sent: Wednesday, January 28, 2015 10:25 AM
To: Daniels, Simon
Cc: Sue Baert; Rick Manner; Matt Streicher; Clay Campbell
Subject: TMDL Comments
Attachments: TMDL Comments to IEPA.docx

Ladies and Gentlemen:

Thank you for extending the comment period to allow consideration of feedback IAWA received last week. Attached is a Word document which includes TMDL comments from Wheaton Sanitary District.

Stephen R. Maney, P.E.
Executive Director
Wheaton Sanitary District
P.O. Box 626
1 S 649 Shaffner Road
Wheaton, IL 60187-0626
630.668.1515 main number
630.384.8673 direct
630.668.5536 fax

Comments from Wheaton Sanitary District to the Illinois Environmental Protection Agency on the Illinois Nutrient Loss Reduction Strategy

1. Wheaton Sanitary District would like to thank everyone at EPA that has been working diligently to help improve the environment on this front and the numerous other fronts you are asked to protect every day with a restrictive budget and limited resources.
2. Wheaton Sanitary District is a member of the IAWA, and it agrees with the comments provided by IAWA.
3. A scientific study, which included stream sampling, laboratory analysis, and aquatic life surveys over an extended period of time, was conducted by the DuPage River Salt Creek Work Group. In that study, phosphorous was not identified as one of the top factors impacting aquatic life. The District feels that similar scientific data should be collected on the Mississippi River Drainage Basin as it relates to nutrient reduction strategy assessment, goal setting, continual monitoring, and overall measurement on the effectiveness of the strategy.
4. Adaptive Management and Best Management Practices (BMP) would indicate that some other factors should be considered as part of the overall scheme when attempting to address the Gulf's hypoxic zone. Items that come to mind are:
    a. Stream bank enhancements/buffer zones
    b. Re-creation of tree canopies along streams
    c. The impact of the state law that lowered phosphorous limits by lawn care companies in should be quantified and offered as a credit to all participants statewide as a portion of the 45% goal.
5. The strategy should include strong consideration for regulation of retail products which contain substances that hinder aquatic life. Items to consider would be:
    a. Chlorides used for snow control
    b. Chlorides used in water softeners
    c. Tar based asphalt used on government paving projects and private driveways.
    d. Insecticides
    e. Lawn fertilizers sold at hardware stores
    f. Drain clog removers, cleaning agents, etc.
6. We have been approached by a consultant who has proposed the idea of changing to a zero discharge plant. If the nutrient limits become too costly, some plants may consider converting to a zero discharge facility which would significantly affect aquatic life during low flow periods in upstream portions of the Mississippi River Drainage Basin because there may be no flow in the streams.
7. There should be a phosphorous removal credit for reclaimed water uses such as:
    a. Reclaiming of effluent to golf courses for irrigation
    b. Watering of POTW lawns, and
    c. Use of the effluent as a coolant for mechanical systems.

8. There does not appear to be legal authority for the establishment of nutrient limits.
9. If the effluent requirements will be based on numeric standards, then the assessment and the nutrient removal goals, tracking, and effectiveness should also be based on numeric standards.
10. Other drainage basins have years of experience with nutrient removal strategies and effectiveness. Obviously, some positive impact should be scientifically provable by now. If not, then the nutrient reduction strategies should be reevaluated.
11. At a minimum, it is strongly recommended that scientific benchmark testing be conducted on key reaches of drainage basins and sub-drainage basins so that there is a sound defendable scientific basis being used to measure the effectiveness of nutrient reduction.
12. There is fear that once a numeric standard is set on an NPDES permit, it will never leave, even if it is not helping address the problem. What will happen if 45% removal is achieved in the Mississippi River Drainage Basin and hypoxic conditions still exist in the Gulf of Mexico? Lowering the discharge limit would be extremely expensive, and leaving the 45 % requirement may not be a helpful long term expense.

THE WETLANDS
INITIATIVE

NLRS
PC-975

23 January 2015

RECEIVED
JAN 27 2015
BUREAU OF WATER
BUREAU CHIEF'S OFFICE

NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

To whom it may concern:

Nutrient pollution from wastewater discharges and agricultural runoff are harming Illinois waters and adding costs for drinking water suppliers. Pollution prevention ultimately averts unnecessary spending on clean-up costs. The Wetland Initiative (TWI) appreciates the work of the many agencies, industries, organizations, and individual to prepare this draft Illinois Nutrient Loss Reduction Strategy (Strategy), but we need a stronger plan with defined steps to meet a goal of 46% reduction in nitrogen and 50% reduction in phosphorus by 2040. The plan must have interim benchmarks that allow us to measure its success and ensure that we are on track to achieve the needed reductions.

TWI has a few specific comments on the draft that should be taken into consideration with the next revision.

Wetlands

Wetlands were undersold in the total phosphorus reduction practices/scenarios. To state that phosphorus "can be released as DRP (dissolved reactive phosphorus) from decaying wetland vegetation and bottom sediment. Consequently, we assumed no net reduction in total phosphorus loads" is misleading. Even though DRP is being released, did the total P load decrease? The nutrient reduction goal after all is for total phosphorus. On the other hand, on page 6.10, it is stated that a TNC pilot study indicated that treatment wetlands removed 47-57% of the phosphorus.

A number of research studies have also shown positive phosphorus retention in flow-through seasonal wetlands receiving agricultural runoff (e.g., Kovacic et al. 2006, Maynard et al. 2009, Reddy et al. 1999). The treatment areas of the wetlands will receive both surface and sub-surface runoff. Total phosphorus and DRP removal can be highly variable, as it is dependent on a number of factors including wetland size, retention time, hydraulic load, season, internal hydraulic flow path, accretion, soil saturation, and particle settling velocity. The accretion of new material providing additional sorption sites, in a highly productive, vegetated constructed wetland can be a sustainable removal and long-term storage process for phosphorus. Providing addition information in the practice description or a footnote indicating while wetlands are not as effective in phosphorus removal as in nitrate removal, there is a potential for total phosphorus removal under certain conditions.

While the text and Table 3.14 are referring specifically to the wetland treatment area, the practice standard requires a buffer surrounding the wetland area. The combination of the constructed wetland and buffer practice provides significant phosphorus and nitrate reduction from both surface and sub-surface runoff.

The quoted nitrogen removal cost is higher than expected (or previously published) given the amortization of the cost was only for 20 years. One of the benefits of the wetland practice is that its practical lifespan is longer than 20 years. If properly designed, a constructed wetland can function for 50-150 years with minimal maintenance. There is year-to-year variability in nutrient management or infield practices implementation whereas, like most structural practices once in place, they will remain in place over the lifetime of the practice.

Adequate financial assistance for construction and rental payments will be needed to support this practice that offers multiple services sediment removal, P reduction, significant N reduction, if we want to move beyond the pilot or research stage and into spreading this highly-efficient practice at scale.

Practice Adoption

The primary strategy for addressing agricultural non-point sources is to do expanded outreach and education and get farmers to voluntarily implement practices. This is too general and is essentially what occurred over the last 20 years. The Strategy needs to set specific goals, outline the approach toward outreach, and determine initial metrics that can be used to quantify practice adoption. How many farmers are currently implementing best management practices? How many more farmers, not acres, are needed to implement practices to achieve the reduction goal? There needs to be a mechanism developed to track practice adoption rates and acres from agribusinesses, SWCD, FSA, NRCS, etc. to go along with the current water quality monitoring programs. Unless there an intensity and density of practices in an area, water improvement will not be detected at the HUC 8 level so we need data on what is happening on the land to determine if there is progress.

In addition, the Strategy should include some information from research that has occurred on what influences farmer's decisions on practice adoption (See Prokopy et al. 2014, Prokopy et al. 2008). It is not necessarily the Illinois Department of Agriculture, SWCD, or NRCS that they view as the "trusted messenger" rather it is their certified crop advisors/consultants, chemical/fertilizer dealers, and seed dealers. What is the outreach strategy for engaging these messengers to promote practices for both economic and environmental benefits and support practices other than those that benefit the retailer?

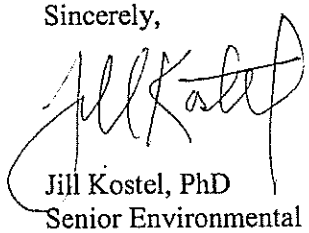
Nutrient Credit Trading

"Illinois EPA will promote trading or other offsets as part of watershed planning and implementation efforts and may use such trading when considering NPDES permits after an appropriate, enforceable, and transparent program has been developed." To really advance nutrient credit trading, basic state nutrient credit trading guidelines or policies should be developed with stakeholder involvement. Based on these guidelines, individual offset or trading programs can be tailored to specific demand, watershed attributes, and market characteristics.

The involvement of IEPA early and throughout both policy and specific program design will ensure that the program meets IEPA requirements and IEPA will approve its use. Having the IEPA as a "champion" of trading could reassure interested wastewater treatment facilities that trading is an acceptable alternative to traditional nutrient control technologies and could encourage facilities to participate in the development of a trading program.

In conclusion, IEPA and IDOA should finalize the Illinois Nutrient Loss Reduction Strategy with a strengthened commitment to enforce existing narrative standards in Clean Water Act permits, an immediate plan to establish a numeric limit on phosphorus in Illinois rivers and streams, and inclusion of clear interim targets for needed phosphorus and nitrogen reduction from the agricultural sector and a rigorous plan for measuring progress.

Sincerely,



Jill Kostel, PhD
Senior Environmental Engineer

References:

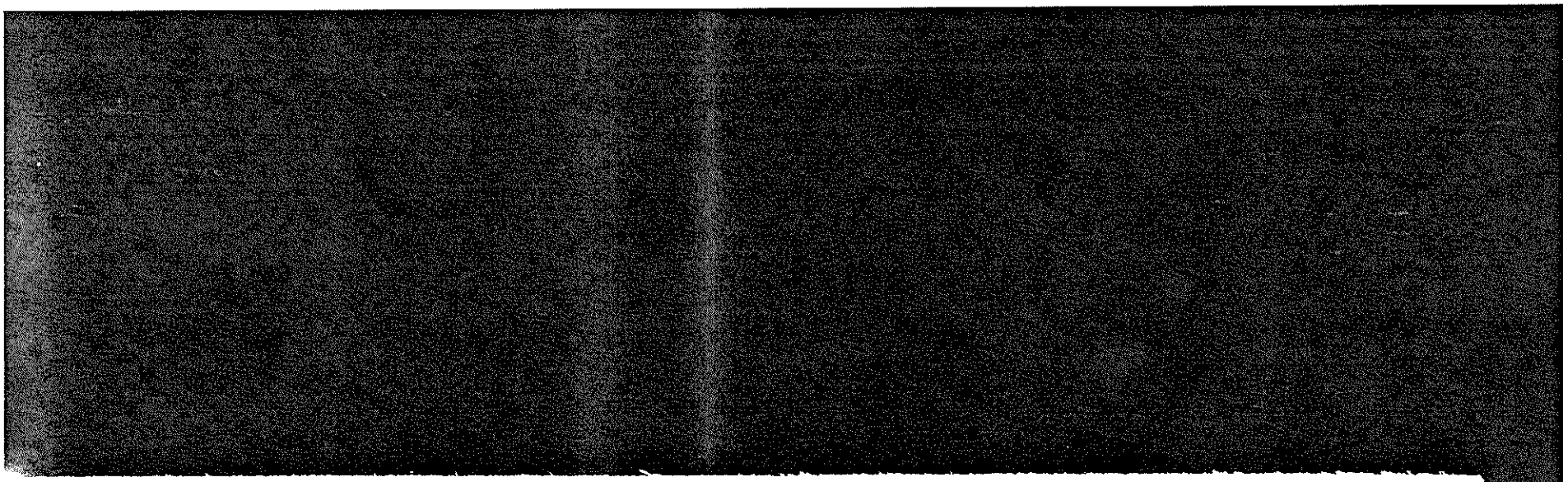
Kovacic, D.A., R.M. Twait, M.P. Wallace, and J.M. Bowling. 2006. Use of created wetlands to improve water quality in the Midwest – Lake Bloomington case study. *Ecological Engineering* 28:258-270.

Maynard, J.J., A.T. O'Geen, and R.A. Dahlgren. 2009. Bioavailability and fate of phosphorus in constructed wetlands receiving agricultural runoff in the San Joaquin Valley, California. *J. Environ. Qual.* 38:360-372.

Prokopy, L.S., D. Towery, N. Babin. 2014. Adoption of agricultural conservation practices: Insights from research and practice. Purdue Extension FNR-488-W, May 2014.

Prokopy, L.S., K. Floress, D. Klotthor-Weinkauf, and A. Baumgart-Getz. 2008. Determinants of agricultural best management practice adoption: Evidence from the literature. *Journal of Soil and Water Conservation* 63(5):300-311.

Reddy K. R., R. H. Kadlec , E. Flaig, and P. M. Gale .1999. Phosphorus retention in streams and wetlands: a review. *Critical Reviews in Environmental Science and Technology* 29:83–146.



THE WETLANDS
INITIATIVE

53 W. Jackson Blvd., Suite 1015
Chicago, Illinois 60604
www.wetlands-initiative.org

CAROL STREAM
IL 601
24 JAN '15
PM 5 L

UNITED STATES POSTAGE
PITNEY BOWES
02 1P $ 000.48⁰
0001862144 JAN 23 2015
MAILED FROM ZIP CODE 60604

NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Ave. East
P.O. Box 19276
Springfield, IL 62794-9276

62794927676

Daniels, Simon

NLRS
PC-976

From: Willhite, Marcia
Sent: Wednesday, January 28, 2015 12:27 PM
To: Daniels, Simon
Subject: FW: IAWA's Comments Regarding the Illinois Nutrient Loss Reduction Strategy
Attachments: IAWA's Comments Regarding the Illinois Nutrient Loss Reduction Strategy.docx

One more....

From: Rick Manner [mailto:rmanner@u-csd.com]
Sent: Wednesday, January 28, 2015 11:19 AM
To: Willhite, Marcia
Cc: Poe, Deana
Subject: IAWA's Comments Regarding the Illinois Nutrient Loss Reduction Strategy

Good Morning Marcia,

I have attached IAWA comments regarding the **Illinois Nutrient Loss Reduction Strategy**.

Thanks for meeting with us last week and allowing us to circulate this around our Executive Committee for review and comment.

Rick Manner
IAWA Nutrient Committee Chair

Contact Information:
Urbana & Champaign Sanitary District
Email: rmanner@u-csd.com
Office: 217-367-3409 Ext. 1230
Fax: 217-367-2603

Mailing Address:
P. O. Box 669
Urbana, Il 61803

Location of Offices:
1100 E. University Ave.
Urbana, IL 61802

Illinois Nutrient Loss Reduction Strategy Comments

IAWA appreciates the fact that several of its members were included in the stakeholder process to develop the ***Illinois Nutrient Reduction Loss Strategy***. We also appreciate the opportunity to express our perspective on this complex issue.

The ***Strategy*** accurately outlines technical challenges that the regulated public point source community has been expecting since discussions about nutrients began in the 1990s. We are encouraged that the ***Strategy*** recognizes that the point source community is not the primary source of nutrients in Illinois waterways. We appreciate the identification of other source contributions and the necessity of reductions from other sources as a required step in achieving meaningful environmental outcomes across almost all of Illinois or in the Gulf of Mexico. We appreciate that the estimated costs are published so that decision makers are aware of the magnitude of the problem nutrients present and the costs associated with nutrient control.

The point source community is committed to playing its part in protecting the environment. The activities identified in the ***Strategy*** today for our members represent financial and technical challenges that are within the capabilities of some dischargers. As with any ambitious change in the way dischargers are regulated, there will be instances where flexibility will be required of the permitting authority either due to financial circumstances of the regulated community, or technical limitations in existing treatment plants. The ***Strategy*** accurately confirms that additional incremental reductions for point sources come at exponentially increasing unit costs. Such diminishing returns on the investment of public money would create significantly more resistance among the point source community.

Many of our members are prepared to follow the recommendations of the ***strategy***, putting their trust in the judgment of the authors of the policy identified in the ***Strategy***. Numerous treatment plants have already completed or are currently undertaking substantial construction projects and paying the associated long-term debt to manage the reductions outlined in the ***Strategy***. It should be noted that the local ratepayers of Illinois will be paying for the operation, maintenance, replacement and capital portions of these projects forever. Assigning these limited resources to this end leaves fewer funds for other environmental priorities.

We believe it is important for us to document here some of the concerns we have raised throughout the stakeholder process regarding aspects of the ***Strategy*** that are perceived by the point source community as potential problems.

Cost-to-Benefit Transparency

Permitted point source stakeholders and municipalities are largely ignored in the introductory and executive portions of the ***Strategy***, yet are clearly the most impacted. The introductory and executive portions ignore the significant costs associated with these efforts, in particular proposed permit changes for point sources. Transparency and appropriate financial stewardship should highlight for the public that new investments of billions of public dollars are being pursued, along with the accompanying realistic expectation, or lack thereof, of noticeable environmental benefit within the state.

Science Assessment Scope Deficiency

While the science assessment appears to address nutrient loads and reduction costs, there is a notable lack of scientific support identifying the adverse impacts of nutrients in the Illinois water environment. The CFAR research that was initiated to help produce state-wide nutrient standards found a very strong linkage between impairments and habitat/physical structure, but very little correlation between nutrients and water use impairments in Illinois, in particular for flowing waters that ultimately leave the state. The science assessment portion of the S***trategy*** directly questions the value of phosphorus loss reduction to help resolve Gulf of Mexico hypoxia. The ***Strategy*** should demonstrate a stronger understanding of the fate, transport, and impact of nutrients in Illinois waters, the MARB and the Gulf before committing the massive resources at stake in the report.

Proposed Permitting

Regulatory Support

The ***Strategy*** suggests that large-scale new permitting efforts are based on existing rules. However, the ***Strategy*** fails to note that much of the proposed permitting is intended to be based on new interpretations of existing rules. Consistent with due process and administrative law requirements, the Clean Water Act and Illinois Pollution Control Board regulations generally anticipate that such a fundamental change in the regulation of municipal wastewater treatment plants should be accompanied by a rule change with public notice and opportunity for comment. This way the change would be subjected to the full scrutiny of the appropriate regulatory authority and possible judicial appeal. The original CWA accompanied this sort of widespread POTW requirement with direct grant funding. The offer of interest-bearing loans does not provide the same level of mitigation of the impact on local rate payers.

While many local agencies will participate in nutrient loss reduction if prompted by permit conditions as proposed in the ***Strategy***, there are local agencies that, when faced with very large rate impacts from the requirements, will expect adherence to the law and may await implementation of new rules before committing resources to this endeavor.

Permit Limits

Permit limits are applied within Illinois to address local issues. Point sources have never considered the ***Strategy*** to represent an agreement to encourage specific numeric nutrient limitations across the state based upon Gulf Hypoxia concerns.

While there is a national goal of 45% reduction in nutrient loadings to the Gulf of Mexico it is simply a goal for the country, for the states generally, for Illinois specifically, for agricultural non-point sources, and for urban stormwater sources. In the same way a 45% reduction in phosphorous is simply a goal for Illinois' urban point sources.

The tables and enumerations in Chapter 5 of the ***Strategy*** provides strong evidence why Illinois' point sources taken as a whole will be the one sector that will manage to accomplish their share of the 45%

goal for phosphorous with the current practices that are in place, or planned for the near future. There will be variations from the reductions itemized in those tables. Some lines will exceed expectations, others will not. It is acknowledged that the time frame for implementation will vary across the state. After Nutrient Facilities Plans are complete, dischargers with no local impact of nutrients should logically continue to monitor nutrients. But such dischargers also should be allowed to maintain nutrient goals which are reviewed at future permit renewals.

Converting the goals of maximizing voluntary reduction into permit limitations will have the inevitable undesirable consequence of diverting focus away from reductions based upon innovative but unproven ideas. Similarly, watershed non-nutrient related issues will lose their emphasis as the discharger must focus upon reliably meeting the permit's new limitations. Please recognize that optimizing a treatment plant for one permit condition does not allow for optimizing for overall environmental benefit. Illinois' treatment plants have been built to address local issues. Where addressing those local issues requires less of an emphasis upon nutrients, that should be permitted.

It is entirely likely that the larger national emphasis for addressing Gulf of Mexico hypoxia will be for nitrogen reductions, where the linkage to impacts in the Gulf is more sound, rather than phosphorous. In this case, tying the dischargers' hands with regards to specific phosphorous limit compliance could limit their ability to reduce nitrogen. This will be especially true where expensive capital costs have been incurred to produce reliable reductions in phosphorous.

Compliance Schedules

For those facilities accepting permit modifications, granting them sufficient time to rationally design and construct their facilities should be provided in every permit. Since proposed new limitations are imposed in NPDES Permits without the adoption of regulations, this amounts to the voluntary acceptance by a discharger and the normal three year Compliance Schedule limit does not have any legal basis.

For those facilities where permit limits are required under applying existing rules Compliance Schedules longer than 3 years often will be necessary for something as complex as nutrients. Permitted dischargers should be engaged during the permit drafting process to determine the appropriate length of a compliance schedule rather than new limits appearing in draft permits and the discharger needing to discover that a Compliance Schedule is something to be requested.

Averaging Periods

In particular where the reduction is proposed to primarily help the Gulf of Mexico, short term limits are inappropriate for nutrients, which impart no acute toxicity. Goals or annual average permits should be provided.

Numeric Nutrient Criteria

The ***Strategy*** anticipates expending billions of dollars under the assumption that reducing nutrients will benefit local waterways and presumably the Gulf of Mexico. To date, similar attempts elsewhere have largely failed to produce noticeable impacts of the waterbodies. The CFAR research indicated that most waterways in Illinois were impacted by nutrients in a marginal way. Adaptive management with continuous monitoring and reevaluation of the effectiveness of prior efforts should be pursued, in the current absence of certainty about the impacts of reduction measures.

Where the ***Strategy*** calls for the rapid development of numeric standards for nitrogen and phosphorus within Illinois waters, our membership believes that the Agency's stated principle of adaptive management should be utilized instead. Measuring impacts of currently planned reductions will best inform the development of the most appropriate standards for Illinois.

The draft schedule contained in Table 8-2 appears unrealistic and unworkable in light of the State's previous efforts to develop appropriate numeric nutrient criteria that are acceptable to USEPA. The large impact of physical structure and the minor impact of nutrients in Illinois was one of the strongest conclusions of the CFAR research, whose conclusions were subsequently verified by USEPA contractors. USEPA's disregard for the current suite of existing and previously proposed Numeric Nutrient Criteria in Illinois is not an adequate reason to impose additional arbitrary limitations that lack meaningful scientific basis or linkage to Illinois' waterway improvements.

The ***Strategy***'s progress monitoring must go beyond simply adding up quantities of nitrogen and phosphorus that are no longer being discharged. The desired impact of the ***Strategy*** is to improve the use of affected waterways. The monitoring program should track the environmental response to nutrient loss reduction efforts, in terms of biological health, recreational uses, and drinking water intake quality. If improving these are the desired outcomes of the ***Strategy***, there should be a process to evaluate whether nutrient control efforts are helping to achieve these goals. The 303d/305b process is not currently effective in identifying nutrient impairments and improvements.

The use of the State's combined 303d/305b list to prioritize nutrient reduction efforts and to support new permitting efforts is inappropriate. These listings, as they currently pertain to nutrients and their presumed impacts, are unreliable and have no scientific or regulatory support. There has been no objective reproducible criteria to identify impacts from nutrients for most of the waters listed. There has been determined no objectively quantifiable level to which nutrients must be reduced in any stream in Illinois to alleviate any alleged impairment. The use of these listings to allocate the substantial resources described within the ***Strategy***, or for any regulatory or permitting support, will be heavily scrutinized by the permitted point source community. Improving the 303d/305b process in the area of identifying nutrient impairments and improvements should be a priority.

In those situations when there is no observed benefit at one level of reduction via point source reductions, the assumed solution to obtain different results should not be more of the same. There must be a deeper analysis of what is going on in the receiving streams before more resources are poured into the same failed solution. IEPA's continued commitment to adaptive management to make

adjustments based on results will be crucial to the success of this effort. In addition, where there are structural impairments that are not within the control of the permitted dischargers, Illinois must either step in to repair the habitat that we impacted as a society or recognize the limitation imposed by physical impairment via adjusted standards.

Funding

It is acknowledged that nutrients are non-toxic and their concentrations are only one input into a complex ecosystem. Their regulation is the most complex and potentially most expensive undertaking since the Clean Water Act was written over 40 years ago. The ***Strategy*** identifies a cost of $600 million per year. The cost for reductions from point sources will ultimately cost billions over time. Much of those costs are front-loaded. The long-term theoretical cost for reductions from non-point sources will be larger still. To be effective, the ***Strategy*** should actively evaluate realistic funding alternatives, the various pros and cons, and the political discussions necessary to produce new funding, because the existing sources cannot produce sufficient revenue targeted to places where the money is needed.

Alternative Solutions

We are encouraged by the recognition of watershed groups dedicated to watershed improvements. The ***Strategy*** describes the activities of the watershed groups, yet inaccurately associates point source P reductions in those watersheds with the activities of the watershed groups. The identified groups have been formed and are actively working to find effective ways to eliminate impairments in their watersheds, particularly in light of limited or no local environmental benefit from the imposition of expensive new permit limits. The identified point source P reduction permitting actions will impede real progress towards restoring those waterways by diverting scarce resources towards point source control efforts with little expectation of any local environmental improvement.

Even for those dischargers whose waterways are impacted by nutrients it must be recognized that there are additional sources of nutrients. In some waterways, reductions from point sources, even to zero discharge, may not reduce impairments or change the probability that nutrients from other sources will continue to impair the waterway. In these circumstances shifting emphasis away from continuing reductions in an inconsequential chemical loading, towards something that has an impact, is in the best interests of the environment. IEPA's actions and the resultant NPDES permits should reflect that reality.

Because we know that traditional solutions based upon the NPDES permit structure established to regulate toxins will not suffice, alternative technologies and solutions should be encouraged. Innovation and risk should be permitted – even though that assuredly means that sometimes desired results will not occur with the first attempt. Placing all risk for failure on the permitted discharger assuredly will eliminate innovation and reduce our knowledge of this complex problem.

IEPA has emphasized their commitment to watershed based stakeholder groups. Where they exist and where local conditions find nutrients are an important factor in watershed impairment, it is agreed that nutrient reductions will be a high priority. However, where those watershed groups find that nutrients are a minor stressor in the environment, they should be given wide latitude to apply limited resources to address problems that have greater local impacts.

Alternative solutions such as joint partnerships with non-point source contributors on a watershed scale could be initiated through IEPA endorsement, and even included in NPDES permitting as an alternative to numeric limits.

January 23, 2015

NLRS
PC-977

NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

RECEIVED
JAN 27 2015
BUREAU OF WATER
BUREAU CHIEF'S OFFICE

Gentlemen:

I am an Illinois farmer and a member of Illinois Farm Bureau. I appreciate the efforts put forth by the Illinois Environmental Protection Agency (IL-EPA), Illinois Department of Agriculture, and all the members of the various working groups who contributed to the creation of the Science Policy Assessment, which has been put forth for public comment. On my farm, I use the best management practices (BMP's) to care for the land and water where I work and reside. Farmers are businessmen and conservation land stewards, who utilize current BMP's, to maximize economic return to the nutrients applied for crop production. I am always looking for new ways to improve nutrient use efficiency on our farms. I appreciate that the strategy continues to focus on the use of education, outreach, and voluntary, incentive-based practices to address current non-point sources of nutrients in Illinois waterways. Nutrient use for crop production and its impact on water quality is a complicated issue. The Science Assessment utilizes the best possible sources of data to determine a path to reduce loss of nutrients from Illinois farm fields. However, numerous sources of "peer reviewed" data required by IL-EPA to create a non-point source assessment do not exist. In the absence of such data, the authors were forced to create an agricultural strategy based on "assumptions" and "estimates". Any estimate of nutrient loss, or means to predict or modify such losses, is at best an assumption. This Strategy has been universally supported by numerous farm advocacy groups, because it requires voluntary participation by farmers. When the Strategy fails to meet the expectations of IL-EPA and environmental policy groups, it will be used as a "guide" to mandatory enforcement on all farm land owners. I encourage IL-EPA to withdraw this Strategy from public comment, until which time, foundational data can be collected to form a sound and strategic position to manage non-point source water quality issues.

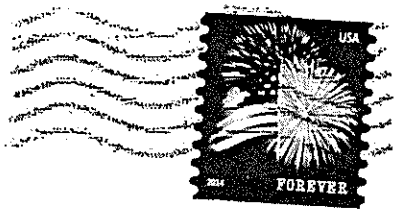
Sincerely,

Robert Charter

Robert Charter

CAROL STREAM IL 601

29 JAN 2015 PM 5 1



NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

62794927676

NLRS
PC-978

January 22, 2015

NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Re: Nutrient Loss Reduction Strategy (NLRS)

Dear Sir/Madam:

Please be advised of my support in the NLRS for a voluntary, incentive-based implementation of Best Management Practices to help manage nutrients and water quality from agricultural non-point sources with a sensible approach, both economically and environmentally. The suggested interim goals of the plan to reduce nitrate-nitrogen 15% by 2025 and to reduce total phosphorous 25% by 2025 can be achieved by voluntary, incentive based programs.

The concept of the "4R's", right source, right rate, right time, and right place has be utilized in my fields before the recent use of the "4R's" terminology. We have been guided by the University of Illinois College of Agriculture professors and our Certified Crop Advisor. We rotate crops, test our soil, apply nitrogen in 3 annual phases, phosphorus in one phase which is incorporated into the soil with the first phase of nitrogen, will commence nitrogen testing this season , and have studied the manner in which to apply cover crops. Our efforts are aimed at conservation of nutrients and soil.

Illinois farmers will rise to the occasion of these challeges if all stakeholders will continue to work in collaborative, focused effort.

Repectfully Subimitted,

Jered Hooker

Jered Hooker

[redacted]

RECEIVED
JAN 27 2015
BUREAU OF WATER
BUREAU CHIEF'S OFFICE

[redacted]

Jered Hooker

[redacted]

CHAMPAIGN IL 618

22 JAN 2015 PM 2 L

NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

62794$9276

Laurie Morse
[redacted]

January 24, 2015

NLRS
PC-979

Attention: Marcia Willhite, Director
Bureau of Water
Illinois Environmental Protection Agency
1021 North Grand Ave. East
P.O. Box 19276
Springfield, Il 62794-9276

RE: Public Comment Illinois Nutrient Loss Reduction Strategy (NLRS)

Dear Director Willhite:

Thank you for accepting these comments about the draft "Illinois Nutrient Loss Reduction Strategy" document dated November, 2014. The draft contains excellent science, and for the most part provides a comprehensive discussion of Illinois' pollutant characteristics as we seek to develop strategies to reduce the nitrogen and phosphorous loads leaving our borders and comingling in waterways that are tributary to the hypoxic dead zone in the waters of the Gulf of Mexico.

The goals of your agency and others expressed in this document are important, and we encourage you to do everything possible to achieve stringent goals of nutrient reduction within a workable but limited time frame. We have already taken too long to address this issue in Illinois. The work in this document is formidable, but there is still much to be done, and important revisions to this draft should be considered. The goals of this strategy should be more clearly qualified and quantified. Without more clearly delineated nutrient reduction goals, the NLRS's excellent monitoring strategy will be of little value.

Furthermore, the entire scope of the draft fails to recognize the role wastewater effluent plays in nutrient loads in Illinois waterways. It is true that these point sources are small when compared to overall agricultural run-off, but in some seasons and some rivers, wastewater effluent comprises more than 80% of river flow, and during those times, total nitrogen and phosphorous are extremely concentrated in the waterway. These seasonal impacts of wastewater effluents need to be documented in this report, and address in this Strategy. Every resident of Illinois contributes to nutrient pollution, and this strategy needs to reflect that with more comprehensive details about all of our sanitary districts, especially the Metropolitan Water Reclamation District of Chicago.

A successful strategy would also lend more attention to coordinated nutrient reduction efforts between point and non-point sources. Such cooperation is essential to achieve statewide reduction targets. A good start would be to re-name this draft "Nutrient Reduction Strategies in Illinois." "Nutrient Loss Reduction Strategy" implies that this pollution problem belongs only to farmers who mis-manage their fertilizer inputs. Such misinformation and blame-labelling is counterproductive.

An overarching failure of this draft is that it doesn't address the regional and economic inequalities of imposing regulatory costs on urban and suburban residents (most concentrated in Northern Illinois) for reducing strictly-regulated point- source pollution, while down state farmers are allowed to participate

in "voluntary" nutrient reduction strategies. And, while cost of reduction per acre of farmland is intimately detailed in this report, and higher-cost strategies are discarded as "expensive", there is nothing that details similar costs for various strategies to achieve point source reductions.

The cost of some point-source treatment was addressed in this report, but clear cost comparisons to alternatives is lacking. These should mined from existing literature and added to the report, with special attention to wetland treatment options. Understanding the large scale of some Illinois sewage plants, Illinois has unique opportunities for innovative nutrient reductions from these sources.

While not documented in this report, the highest concentrations of our poorest residents live in urban communities in the northern part of the state, and must pay for nutrient reductions in their wastewater effluent through taxes and fees tied to their consumption of potable (drinking) water.

Furthermore, the ultimate recipients of the nutrient pollutants are poor residents living along the Gulf, who are deprived of fisheries and other livelihoods because of the damage these nutrients cause. The price these people, and the biota of the Gulf, pay is not "voluntary", but imposed because of lack of upstream nutrient control. Somehow our rather wealthy (see land valuation) non-point source polluters escape with "voluntary" practices and are excused from the alternatives detailed as "expensive" in this report. The NLRS should strive for more balance in this regard, and seek district-level identification of agricultural nutrient overload and impose costs on non-point source polluting districts where best practices for nutrient reduction are not adopted.

We are not suggesting less regulation of point-source effluents. If Illinois is to achieve its goal of a 45% reduction in total riverine nitrate-nitrogen and phosphorus load, the Illinois strategy needs to recognize that achieving nutrient reduction may be cheaper on agricultural lands than in urban environments. Stringent point source regulations are needed. **The draft we are considering today fails to INTEGRATE the interests of the urban and agricultural constituencies to achieve the lowest possible costs for the highest possible level of nutrient reduction statewide.**

In this draft strategy, urban and suburban residents will continue to pay more to extract nutrients from wastewater treatment effluent, and those dollars will be transferred to design and engineering firms and construction, pipe and machinery companies (see the MWRD's strategy to use an energy-intensive engineering solution for phosphorus "resource recovery"). It would be more efficient economically to transfer considerable amounts of this cash not to pipe-and-pump engineers, but instead to downstream agricultural landowners who can choose to "farm" nutrients by removing loads in great concentrations in exchange for higher returns than traditional row crop farming on some lands.

This calculation, which is not particularly "new" or "expanded" is not present in this report, and its absence makes most of **Appendix B: Non-Point Source Cost Estimates,** complete nonsense. The Committee can do better, and must incorporate economic estimates and strategies that allow point-source polluters to pay non-point nutrient emitters to maximize reductions if the state is to achieve lower nutrient pollution in our open waters.

Water Quality Trading mechanisms: Page 5.9 of the report states the IEPA will promote trading or other offsets as part of watershed planning and implementation efforts and may consider use of such trading when considering NPDES permits in appropriate situations. We believe that water quality trading mechanisms will be an effective way to achieve point-source nutrient reduction goals while at the same time providing cash incentives to farmers to plant buffer zones, create wetlands, use cover crops and

otherwise farm for non-point nutrient reduction, with benefits above and beyond those confined to their own acreage. IEPA should be working now, with utmost speed, to create and test these trading mechanisms. Pilot projects should be established to test and prove the ability of wetlands to remove pollutants at scale.

As the Committee knows, the USEPA has created guidelines and a handbook for water quality trading: http://water.epa.gov/type/watersheds/trading.cfm. While the guidelines address trading within watersheds, the Illinois model should be designed for trading across all point and non-point sources within the state. Again, this strategy would not relieve point-source emitters from responsibility for nutrient reduction. However, the investment in these reductions could travel to our agricultural producers, rather than to out-of-state engineering companies. This concept might be broadened to include trading among point-sources, confined feeding operations (CAFOs), treatment wetlands and full drainage districts, depending on circumstances.

Chicago is the center of the design of this sort of derivative trade. Illinois should invite some of our economists and financial engineers to join the NLRS Committee.

Wetlands: Wetlands are a proven low-cost mechanism for nutrient reduction in riverine environments. (*See citations, below*). However, this report dismisses them because of "high investment costs." (Table B1, and Pg. xiv). On page xiii, the report states that "The primary cost of wetlands is farmland taken out of production." **This sort of assumption damages the credibility of the strategy.** A proper state nutrient reduction strategy would substitute farm income gained from nutrient removal for row crop production losses from lands put into wetland structures.

Applied agricultural nutrients are escaping into our waterways because drain tiles are used to create farmland out of wetlands. There are plenty of riparian farms where yields on flood-vulnerable acres are lower than average. In many cases, giving incentives to restore wetlands for nutrient control would be more profitable for farmers than planting. Where are the assessments of this practice in the NLRS report? Please add them.

Furthermore, riverine areas are often channelized, and wetland construction within the river, while softening the channel, could allow wetland restoration without loss of arable acreage. Indeed, these shoreline areas would reduce erosion and increase the value of adjacent tillable land. Meanwhile, wetlands could be earning nutrient-removal credits for the landowner. In some cases, the strategy should allow direct payment to farmers for permanent removal of drain tiles, and provide disincentives (tax or toll) for the installation of new drain tiles on agricultural lands.

Meanwhile, the NLR strategy lacks estimates of the potential income earned from wetlands if they are managed for duck-hunting, fishing, canoeing, kayaking, and bird watching or as a source of marsh hay. And, if this strategy is to be successful, farmers would receive a greater income for using wetlands combined with conventional farming, to achieve NLRS goals. The Strategy needs to include informed estimates of the value of ecosystem services and determine how much a point-source emitter might pay for wetland nutrient removal. (Determine market scale and commodity pricing for the wetland nutrient removal strategy.).

Failure to quantify these transfer payments from point-source generators to agricultural landowners and managers is a consistent weakness of this report, and negatively affects the evaluation of wetlands and other non-traditional techniques as effective tools for nutrient extraction.

We strongly encourage IEPA to create an overall scheme that provides incentives for farmers to create and maintain wetlands, and create a funding system based on savings to point-source generators. Furthermore, this wetlands incentive program should include all stream-side landowners, public and private, in all areas of the state.

Timing: The 10-year time period (2025 goal) for implementing nutrient reduction strategies for point and non-point sources may be acceptable for the entire state, but for high-priority point sources and critical areas of non-point sources within the high priority zones, the time allowed for implementation should be much shorter.

Point-source nutrient removal goals: The proposed nitrate-nitrogen standard of 10mg/l for the effluent of any plant is extremely lax, as is the 1mg/l phosphorous standards. We suggest more rigorous goals of 3mg/l for total nitrogen and 0.5 mg/l for total phosphorous. Most point source emitters already meet the 10mg/l standard. Furthermore, the 3mg/l and 0.5mg/l recommendation is less stringent than standards proposed by the USEPA. Failure to tighten point-source removal standards is a considerable weakness in this draft, and should be revisited. Again, the burden of the NLRS strategy should not fall exclusively on the shoulders of farmers.

Other point-source comments: Point source permits could be more stringent if the state would codify nutrient standards for point-sources that don't discharge into lakes. An IEPA regulatory commitment to stringent riverine discharge nutrient standards must be part of the final NLRS.

Is the strategy effective, measurable, and enforceable? Given the voluntary nature of the non-point source nutrient removal strategies contained in this report, we doubt the Committee has achieved its goal of "developing strategies to reduce nitrogen loads leaving (Illinois) borders". Voluntary compliance may be appropriate when financial incentives to non-point nutrient generators are built into the structure of the strategy, but in this draft they are not (see above). We would like to recommend the structure and strategies of adjacent states such as Iowa*, which has an agricultural economy much like Illinois, and which has drafted a strategy approved by USEPA. **(See the Iowa Nutrient Reduction Strategy here: http://www.nutrientstrategy.iastate.edu/sites/default/files/documents/NRSfull-141001.pdf)**

Voluntary strategies: Voluntary action in the area of nutrient reduction for non-point sources has been advocated since the Section 208 water quality studies of the 1970's. Meanwhile, data in the NLRS shows that the nutrient problem has been growing year by year. New and expanded control techniques are called for to break this pattern, but few are in evidence in the draft NLRS.

Priority Watersheds: Establishing priority watersheds is a good idea, and we commend the Committee for establishing equal weighting for improving both local water quality and hypoxic conditions in the Gulf of Mexico. However, the Committee has dismissed the Chicago River watershed from its top priority ranking "due to the lack of watershed-based plans in the watershed." The Chicago River and its upstream branches contribute 3.69 billion pounds of phosphorus per year to Illinois waterways but somehow isn't a priority watershed because a primary nutrient generator and important watershed landowner, the Metropolitan Water Reclamation District, hasn't organized an appropriate watershed plan?

To a citizen observer, this is outrageous. The IEPA and the NLRS should include immediate provisions for Skokie River; Chicago River; and Little Calumet watershed planning teams, exclusive of any "efforts" by the MWRD, and create interest group teams to complete watershed management plans and get watershed nutrient management provisions in place. Again, the success of this or any other effort depends on the IEPA first codifying point-source nutrient standards for discharges into Illinois rivers.

These urban watersheds should be managed in similar ways to rural watersheds, both for monitoring and for nutrient trading. Sampling and reporting at MS4 storm water outfalls should be included in the watershed plan for river areas which receive storm water from separated sewer communities.

CAFOs: Concentrated Animal Feeding Operations can be significant sources of nutrient pollution, yet only 29 of the 249 existing CAFO operations in Illinois have been given NPDES permits. The IEPA and the NLRS should make a high priority of increasing resources to perform compliance inspections at ALL of these animal concentrations, permitted or not, within the next 24 months, and have staff give prioritize operations that need immediate attention. Furthermore, the agency should prioritize inspections according to the watershed priorities detailed in the NLRS. Inspecting only 56 of these operations per year, or 5 per month, does not demonstrate the urgency required to protect the public waters of this state.

Monitoring: The NLRS recognizes that monitoring is essential to achieving the desired load reductions of nitrogen and phosphorous and insuring that the underlying watershed plans are working appropriately. This is a strength of the NLRS report, and assuming that the strategy includes specific goals, the monitoring proposal would be adequate. However, the non-structural non-point source controls do not lend themselves to measurement and parcel-specific accountability. Some sort of local conservation-district nutrient totals might have to be assigned within particular watershed areas.

Adaptive management: Another strength of this report is that it allows for adaptive management. If adequate progress is not being made, adjustments to load allocation or treatment technology can be made. By implication, trading strategies can be expanded and the technology for producing fungible credits can be altered or changed (see suggestion to include financial engineers on the Committee). The concept of the nutrient reduction strategy as a "living document" is a good one.

Cover crops: If Illinois could succeed in getting 80% cover crop adoption, we'd be a long way toward nutrient reduction goals. However, Illinois farmers for the most part aren't adopting this strategy, and they need incentives, research, and consequences to change. On page 3.30 of the draft NLRS, the economic analysis assumes cover crops of rye or oats. While both crops can be used for winter grazing, the NLRS does not address the newer and more innovative technique of planting small legumes (small beans) as nitrogen-fixing fall cover crop. This "green manure" holds soil and nutrients in the fall, and does not need spring herbicide application.

Both rye and oats have proved to be poor economic cover crops in southern Illinois, so farmers need assistance with more practical and viable cover crops. Seed availability for small beans may be short today because of lack of adoption, but with appropriate development, this use would improve farm management for soil health, as well as promote nutrient reduction.

Riverine buffers and edge of field practices: The Committee conducted GIS analysis to determine that 64 percent of stream miles in the state do not have buffers, and furthermore, that phosphorous loads could be reduced if buffers were established on these streams. However, some of these stream miles

are attached to drain-tiled lands, which could by-pass buffer strips. The IEPA and the NLRS team should look closely at this, commission further research, and promulgate a regulatory standard requiring the use of stream-side buffer strips in all situations, urban and rural. Implementing a shoreline buffer requirement, with design provisions for tiled acreage, should be a high priority of the agency.

Bias: The Committee quickly dismissed the effectiveness of wetlands to remove nutrients (page 3.43), using a guess, rather than science. To this reader, this and other similar comments make the NLRS seem deeply hostile to the use of wetlands for nutrient removal. Research shows wetlands can be cost-completive. The Committee needs to examine why this apparent bias has been introduced to the report, and include better research and results from existing wetland installations in the next draft. If necessary, the Committee can draw from wetlands results from other states and other countries.

These comments are meant to strengthen the Illinois strategy for nutrient reduction in the waters leaving our borders. This is an important undertaking, and we are grateful to all who worked on this comprehensive report. I am also grateful for this opportunity for public comment.

Sincerely,

Laurie Morse
[redacted]

Citations:

Crumpton, W. et al. 2007. Potential benefits of wetland filters for the tile drainage system: impacts on the nitrate loads to the Mississippi river subbasins. U.S. Depart of Agriculture, Washington, D.C.

Fulcher, C. et al. 1994. The role of wetlands in improving agricultural ecosystems: An Ecological-Economic Assessment. 30th Annual Conference of American Water Resources Association, National Symposium on Water Quality, Chicago, IL, Nov. 6-10.

Hey, D. et al. 2005. Nutrient farming and traditional removal: an economic comparison. WERF. Water intelligence online.

Hey, D. et al. 2012. The roles and benefits of wetlands in managing reactive nitrogen. Vol. 67, No.2. Journal of Soil and Water Conversation.

Hey, D. and P. Heltne. 2014. Thinking like a river: a riverine national park for the upper Mississippi River. Ecological Engineering, Elsevier. 68.

Iowa nutrient reduction strategy. 2015. Iowa State University. http://www.nutrientstrategy.iastate.edu

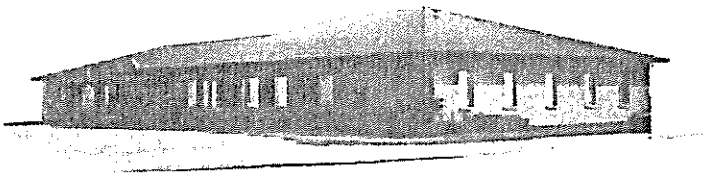
Kadlec R. and S. Wallace. 2009. Treatment wetlands. Second edition. CRC press, Boca Raton, FL.

Mitsch, M. and J. Grosselink. "The Values of Wetlands: Landscapes and Institutional Perspectives." The value of wetlands: importance of scale and landscape setting". Ecological Economics 35 (200) Elsevier.

Prato, T. and Hey, D "Economic Analysis of Wetland Restoration along the Illinois River" Journal of the American Water Resources Association, February, 2006. Volume 42, Issue 1, pages 125–131, February 2006.

(END)

NLRS
PC-980



OGLE COUNTY FARM BUREAU

421 W. PINES ROAD SUITE 8 PO BOX 195 OREGON, ILLINOIS 61061
PHONE (815) 732-2231 FAX (815) 732-3412

RECEIVED
JAN 20 2015
BUREAU OF WATER
BUREAU CHIEF'S OFFICE

NLRS Comments

Illinois Environmental Protection Agency

Bureau of Water

1021 North Grand Avenue East

PO Box 19276

Springfield, Illinois 62794

To Whom It May Concern:

The Ogle County Farm Bureau represents over 4600 member families in Ogle County. Our mission is to lead our members in their pursuit of prosperity. We will actively advance programs and public policies that promote a vigorous agricultural economy in benefiting our members and their communities. As the largest advocate for agriculture in Ogle County we wish to comment on, and lend our support to the recently developed Illinois Nutrient Loss Reduction Strategy.

Since the adoption of the "T by 2000" initiative in Illinois Ogle County farmers have embraced and utilized new and innovative conservation practices to reduce soil erosion, improve water quality and improve production. We are committed to our land and water in order to protect both for future generations.

We support the Illinois Nutrient Loss Reduction Strategy because:

- We believe that implementation of best management practices is the most efficient and effective means farmers can incorporate to achieve nutrient loss goals from non-point source pollution
- We feel that voluntary implementation is the key to having farmers embrace and utilize new strategies to address nutrient loss just as they have used other voluntary programs in the past
- The use of educational efforts, outreach and cost incentives will enhance participation by farmers in adopting various best management practices
- Identification of priority watersheds gives the best opportunity to put resources towards achieving results

The Ogle County Farm Bureau is confident that by adopting the Illinois Nutrient Loss Reduction Strategy it will allow Illinois to improve water quality and do our part in addressing larger watershed issues such as hypoxia in the Gulf of Mexico.

Voluntary and incentive-based programs work! Illinois farmers have proven that in the past with participation in the Conservation Reserve Program, utilization of cost-share incentives to install buffers and waterways and incorporation of new tillage options to conserve soil.

We urge the Illinois Environmental Protection Agency to adopt the Illinois Nutrient Loss Reduction Strategy and implement it fully in Illinois.

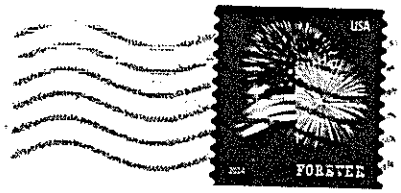
Respectfully,

Brian Duncan, President
Ogle County Farm Bureau

OGLE COUNTY FARM BUREAU
421 W PINES ROAD SUITE 8 OREGON, ILLINOIS 61061

CAROL STREAM IL 601

14 JAN 2015 PM 4 L



NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Avenue East
PO Box 19276
Springfield, IL 62794

62794927676

Larry Tombaugh, President
Corporate Headquarters
32815 North 200 East Road
Streator, IL 61364-9805

TOMKAT Roofing, Inc.
IL LIC #104-002387
PH. (815) 673-1449 FAX (815) 673-1311

Kathy Tombaugh, Vice-President
Website: www.tomkatroofing.com
Email: info@tomkatroofing.com
1-800-535-ROOF (7663)

RECEIVED
JAN 20 2015
BUREAU OF WATER
BUREAU CHIEF'S OFFICE

NLRS
PC-791

January 15, 2015

To: NLRS Comments and the IEPA

Re: Illinois Nutrient Loss Reduction Strategy

I am pleased to have the opportunity to comment on the proposed initiative. I am a farmer on an Illinois farm homesteaded in 1854. My wife's family farm was homesteaded in 1835. The generations of Tombaughs and Allens have not taken conservation lightly. The land is our living. We feel that farmers have been blamed excessively for nutrient losses into the watersheds. One account showed that the nitrate level had not changed much from the early days on the Illinois River when the Army Corps of Engineers started testing in 1865.

Be that as it may, we all realize that increased vigilance is necessary. As a farmer and a businessman, I can see many changes occurring rapidly in the voluntary adoption of "Best Management Practices" in our area. In addition to the traditional practices (ie. buffer strips, grassed waterways, and controlled flow structures) I can see an "explosion" in cover crops, reduced nitrogen and potash applications in the Fall, increased awareness of soil health and the use of Humates, increased Strip-Till and No-Till, and a greater emphasis on Spring and side-dress applications. I believe we should reward these practices with voluntary incentive-based programs. There needs to a greater awareness and rewarding of Carbon Sequestration Credits. In Europe, those credits earned pay in the $25 - $30 per acre range. That is way more than the same credits earn in the U.S.

I have every confidence that we farmers can reach the IEPA's interim goals voluntarily given the right incentives and would encourage a document as such. Thank you for this forum.

Sincerely,

Larry Tombaugh

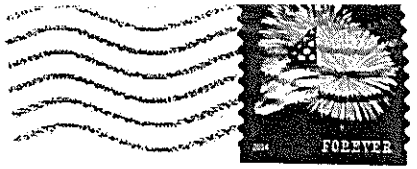
Larry & Kathy Tombaugh Experimental Farms

32815 N 200 E. Rd. – Streator, IL 61364

LTD
LARRY TOMBAUGH DISTRIBUTING
Black Earth Humics · Nutrient Management Specialist
815.257.1449
larry@nutrientmanagementspecialists.com
alternate email: larry@tomkatroofing.com
office: 815.673.1449
fax: 815.673.1311
32815 N. 200 East Rd.
Streator, IL 61364

TOMKAT Roofing, Inc.
32815 North 200 East Road
Streator, Illinois 61364

PEORIA IL 616
16 JAN 2015 PM 2 T



NLRS Comments
Illinois Environmental Protection Agency
Bureau of Water
1021 North Grand Ave. East
PO Box 19276
Springfield, Il 62794-9276

62794$9276

NCRS
PC-992

Comments on the Illinois Nutrient Loss Reduction Strategy

Page 4.1 The Comment "improving both local water quality and hypoxic conditions in the Gulf of Mexico were equally weighted when identifying priority watersheds."

Why was this done? If the problem is hypoxic conditions in the Gulf of Mexico, why do we assume improving water quality in lake watersheds to help hypoxic conditions in Gulf of Mexico? The lakes are sediment traps that prevent these problem pollutants from ever reaching the Gulf of Mexico. These watersheds pollute the lakes in Illinois only.

Page 6.2 the comment "Section 319 is a grant program under the Clean Water Act that disburses funds to states with approved non- point source management plans."

Why should watersheds that have old plans (according to EPA) by date only have to update the plans which are a two year process to get 319 money? In this situation the problem has been identified (N and P) pollutants getting to the Gulf of Mexico from Illinois. We have identified the solutions by scientific methods as outlined in this Strategy (the best bmp's to fix the problem). Why do we have to do more planning before we start to work? Let the watersheds who can solve this problem, do it.

Page 6.4 Streambank stabilization and Restoration Program

This is a proven best way to fix the problem. When you stop the pollutants at the sreambank edge of a stream flowing directly into the Mississippi River, you have the best solution to the problem.

Page 6.6 RCPP and MRBI programs listed here.

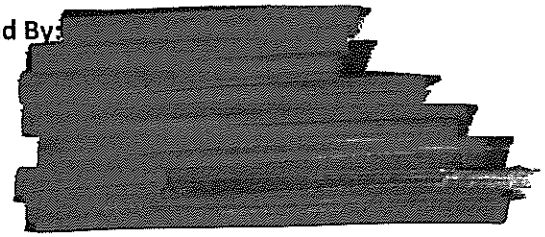
These programs need more local generated input. Illinois Soil and Water Conservation Districts are the best source to do this. Too much time writing grants to do what we already know needs to be done. Apply the BMP's that have been scientifically determined already. Let Watersheds that can get the work done, do it.

Page 6.10 Talks about buffers.

Strategy needs to identify buffers along streams that flow directly into the Mississippi River and not those who flow into a lake. The lake is a sediment trap that prevents pollutants from reaching the Mississippi River.

Page 6.16 Future Strategic Actions – Expanded Outreach and Education

This section needs to state that a percentage of grants putting conservation on the ground need to do at least 30% of the total dollars in education work. If you give some grants of all education in one watershed and some all project work in another watershed, you will have a disconnect between the two. Landowners installing projects and their neighbors need to be educated about the projects. It's a shame we have to educate people on what is being done, but I believe it has been proven it is necessary. What better place to find someone already working with the people of the watershed than Illinois Soil and Water Conservation Districts.

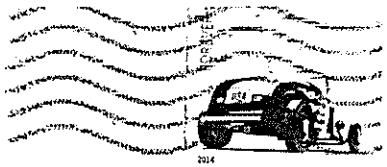
Submitted By: 

RECEIVED
JAN 20 2015
BUREAU OF WATER
BUREAU CHIEF'S OFFICE

[redacted]

SAINT LOUIS MO 630

15 JAN 2015 PM 6 L



NLRS Comments
ILLinois EPA
Bureau of Water
1021 North Grand Ave. EAST
P.O. Box 19276
Spring Field, IL. 62794-9276

62794927676