



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Performance Benchmark Committee Meeting
October 8, 2020

Agenda

2:00 – 2:05 pm	Welcome
2:05 – 2:55 pm	Main meeting <ul style="list-style-type: none">• Method for Calculating Point Source Loads• Update on Additional Implementation Scenarios Development• Review of 2019 Biennial Report Adaptive Management Chapter<ul style="list-style-type: none">○ Suggestions for improvements or additions.• Additional topics of discussion from members.
2:55 – 3:00 pm	Next steps



Point Source Nutrient Loading Calculations

- **2018 Point Source Nutrient Load Methodology—Major Municipals**
- Annual loads for Total Phosphorus and Total Nitrogen were downloaded using the USEPA ECHO “Water Pollution Search” tool
 - The loads calculated by the tool were used for facilities that have “001” designated as their main outfall.
- For those facilities that had outfalls other than “001”, the DMR data was used to calculate monthly and annual loads.
- For the few facilities that do not have monitoring requirements, the Hypoxia Task Force Nutrient Modeling tool was used.
- IAWA provided annual loads for MWRDGC and other facilities.
- Additional facilities that do not have monitoring requirements submitted data to IEPA.



Point Source Nutrient Loading Calculations

- **2018 Point Source Nutrient Load Methodology-NonPOTWs**
- Annual loads for Total Phosphorus and Total Nitrogen were downloaded using the USEPA ECHO “Water Pollution Search” tool.
- Facilities were separated by Major and Minors, although we combined both for reporting purposes.
- **2018 Point Source Nutrient Loads for Minor Municipals**
- The loads estimated by the original Science Assessment were used.



Point Source Nutrient Loading Calculations

- **2019 Point Source Nutrient Load Methodology—Major Municipals**
- Since more facilities have been given a “B01” designations, it was determined that we would use raw DMR data to calculate monthly loads for all Major Municipal facilities.
- For the few facilities that do not have monitoring requirements, the Hypoxia Task Force Nutrient Modeling tool was used.
- IAWA provided annual loads for MWRDGC and other facilities.
- Additional facilities that do not have monitoring requirements submitted data to IEPA.
- For months with missing data for MGD or concentration, the annual average value for that facility was used.



Point Source Nutrient Loading Calculations

- **2019 Point Source Nutrient Load Methodology-Major Municipals**
- Formula used to calculate monthly loads:
 - $\text{MGD (monthly average)} * \text{nutrient concentration (monthly average or daily result) (Mg/L)} * 8.34 * 30.417$
 - Monthly loads were summed to determine each facility's annual load
- Much time was spent determining correct outfalls to use and completing QA/QC of the data for flow and concentration values.



Point Source Nutrient Loading Calculations

- **2019 Point Source Nutrient Load Methodology-NonPOTWs**
- Annual loads for Total Phosphorus and Total Nitrogen were downloaded using the USEPA ECHO “Water Pollution Search” tool.
- Facilities are not being separated by Major and Minors.
- **2019 Point Source Nutrient Loads for Minor Municipals**
- The loads estimated by the original Science Assessment will be used.



Point Source Nutrient Loading Calculations

- 2019 Point Source Loads are still being worked on.
- Once completed, we can have another full Performance Benchmark Committee meeting, or a meeting just with the point source members.
- 2020 Point Source Loads
 - The Hypoxia Task Force Point Source Working Group will be developing a 2021 Point Source Report using 2020 data. Focus on Major Municipals only.
 - Illinois EPA intends to work with USEPA to calculate point source nutrient loads for all facilities using one of the nutrient loading tools, or will use the 2019 methodology.



Additional Implementation Scenarios Development

- IEPA Contracted with Dr. Reid Christianson to develop additional Implementation Scenarios.
 - Scenarios to meet the interim goals
 - Scenarios to meet the 45% reduction
- Reid has been working on this since June and is about to wrap up.
- The scenarios document will be released soon.
- Reid will give an overview of the scenarios at an Ag Water Quality Partnership Forum meeting (online) later this month.
- **Comments and suggestions are encouraged!**
- He will present the final scenarios at the November 6 NLRS Workshop.



Adaptive Management Chapter

- Overview of 2019 Adaptive Management Chapter
- Discuss 2021 Adaptive Management Chapter outline and content



Adaptive Management Chapter

Water Quality Goals

The overall objective of the strategy is to improve water quality, not only in Illinois, but downstream, to reduce the impact of the hypoxic zone in the Gulf of Mexico. Illinois NLRs set a long-term goal of reducing loads from the state for total phosphorus (P) and total nitrogen (N) by 45%, with interim reductions of 15% nitrate-nitrogen and 25% total phosphorus by 2025. (Figures 8.1 and 8.2.) The graphs compare the loads for nitrate-nitrogen and total phosphorus to the original baseline loads of 1980–96, the updated loads of 1997–2011, the 2011–15 average loads, and the 2013–17 average loads. These graphs also include the target loads based on the interim 2025 goals and the final targets for the 45% reduction.

- We will update this graph to include nutrient loads through 2019.
- A more thorough discussion on water quality will appear in the Science Assessment update Chapter 3.

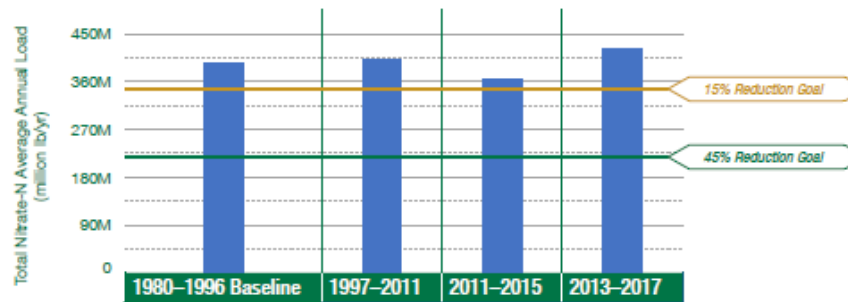
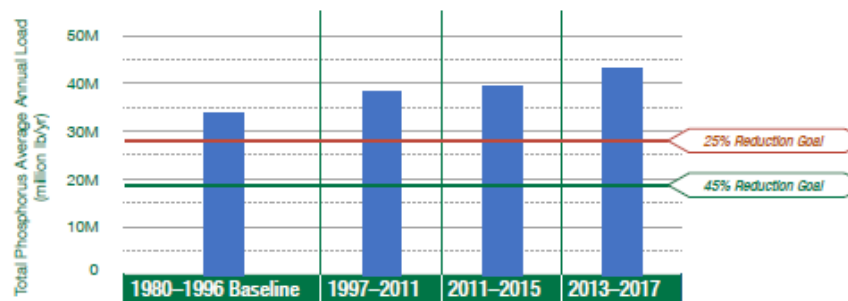


Figure 8.1. Illinois Nitrate Load



Adaptive Management Chapter

- Implementation Scenarios

Scenario NP 2	Recommendation	Est. Acres (Million)	Nutrient Reduced	Potential Data Sources for Tracking Metric
Reducing N rate from background to MRTN	Applies to all corn acres, but reductions only realized on 10%	11	N	NASS
Spring-only N application	Tile drained corn acres	5.7*	N	NASS
Bioreactors (acres treated)	50% of crop acres	11	N	Illinois EPA-from reported data
» Wetlands (acres treated)	10% of crop acres	2.2	N	NRCS, Illinois EPA
No P fertilizer above STP maintenance	Assumes 12.5M acres are above maintenance	12.5	P	Illinois Dept. of Agriculture, other. Assumes that 12.5M acres are above maintenance.
Reduced till of conventional eroding >T	Defined as leaving 30% or greater crop residue cover	1.8	P	Soil Transect Survey
Cover crops on all corn/soybeans	Fall planted	22	N&P	NASS, FSA, IEPA, NRCS, satellite imagery
» Point Sources (Majors only)	1 mg/L TP permit limit	N/A	P	Illinois EPA
» Point Sources (Majors only)	10 mg/L nitrate limit	N/A	N	Illinois EPA



Adaptive Management Chapter

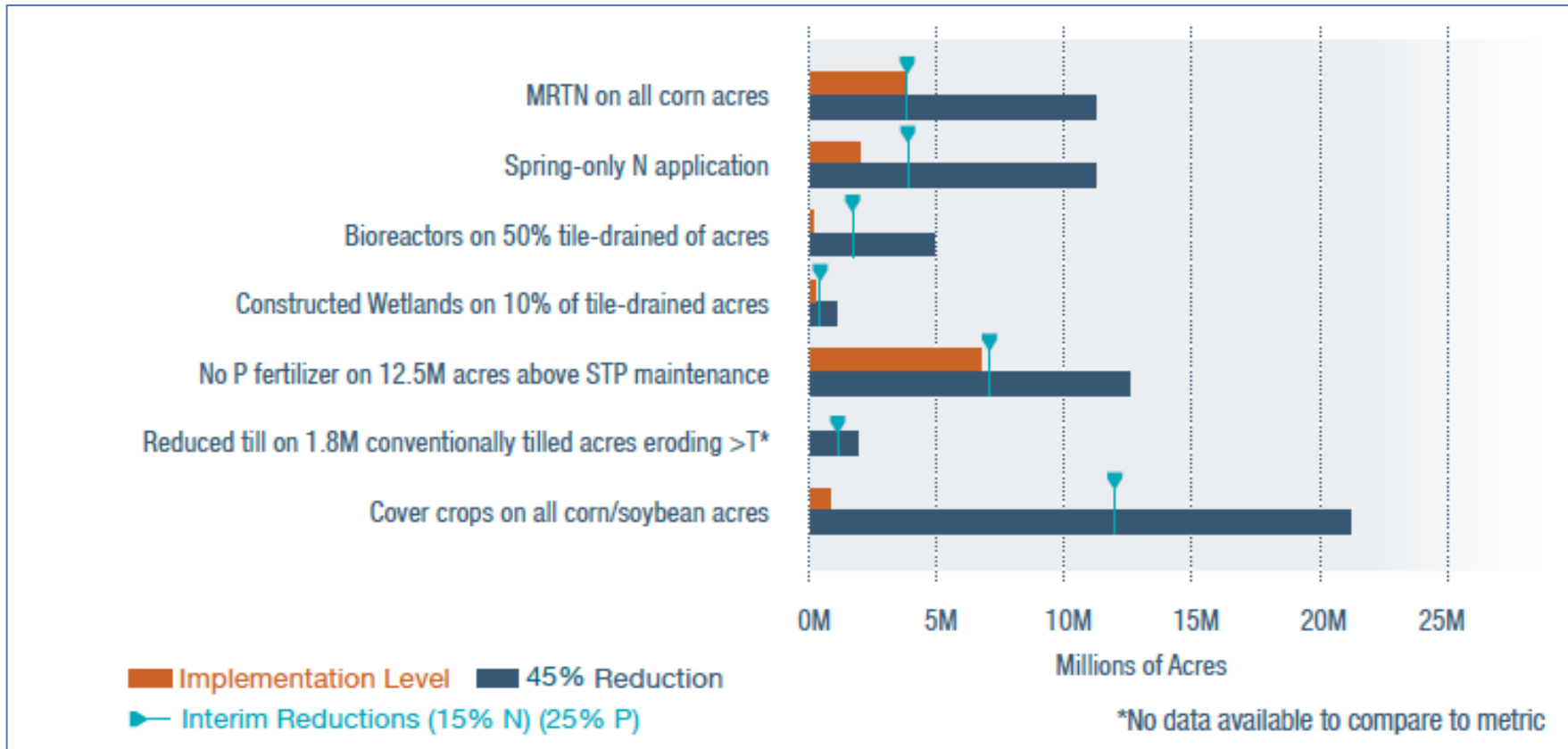
- Implementation Scenarios

Scenario NP 3	Recommendation	Est. Acres (Million)	Nutrient Reduced	Potential Data Sources for Tracking Metric
MRTN	Applies to all corn acres, but reductions only realized on 10%	11	N	NASS
Spring-only N application	Tile drained corn acres	5.7*	N	NASS
Bioreactors (acres treated)	30% of crop acres	6.6	N	Illinois EPA-from voluntary reported data
No P fertilizer above STP maintenance	Assumes 12.5M acres are above maintenance	1.8	P	IL Dept of Ag tonnage report, other
Reduced till of conventional eroding >T	30% or greater crop residue cover	1.8	P	Soil Transect Survey
Cover crops on corn/soybeans	87.5% of acres	19.25	N&P	NASS, FSA, IEPA, NRCS, satellite imagery
» Buffers on all applicable lands	Estimated 100 feet from stream	0.2*	P	Illinois EPA, FSA, NRCS, GIS analysis
» Perennial crops on land eroding >T	Biofuels, hay, or CRP	1.6	N&P	FSA (CRP), IDNR (CREP), other
» Additional perennial crops	Biofuels, hay, or CRP	0.9	N&P	FSA (CRP), IDNR (CREP), other



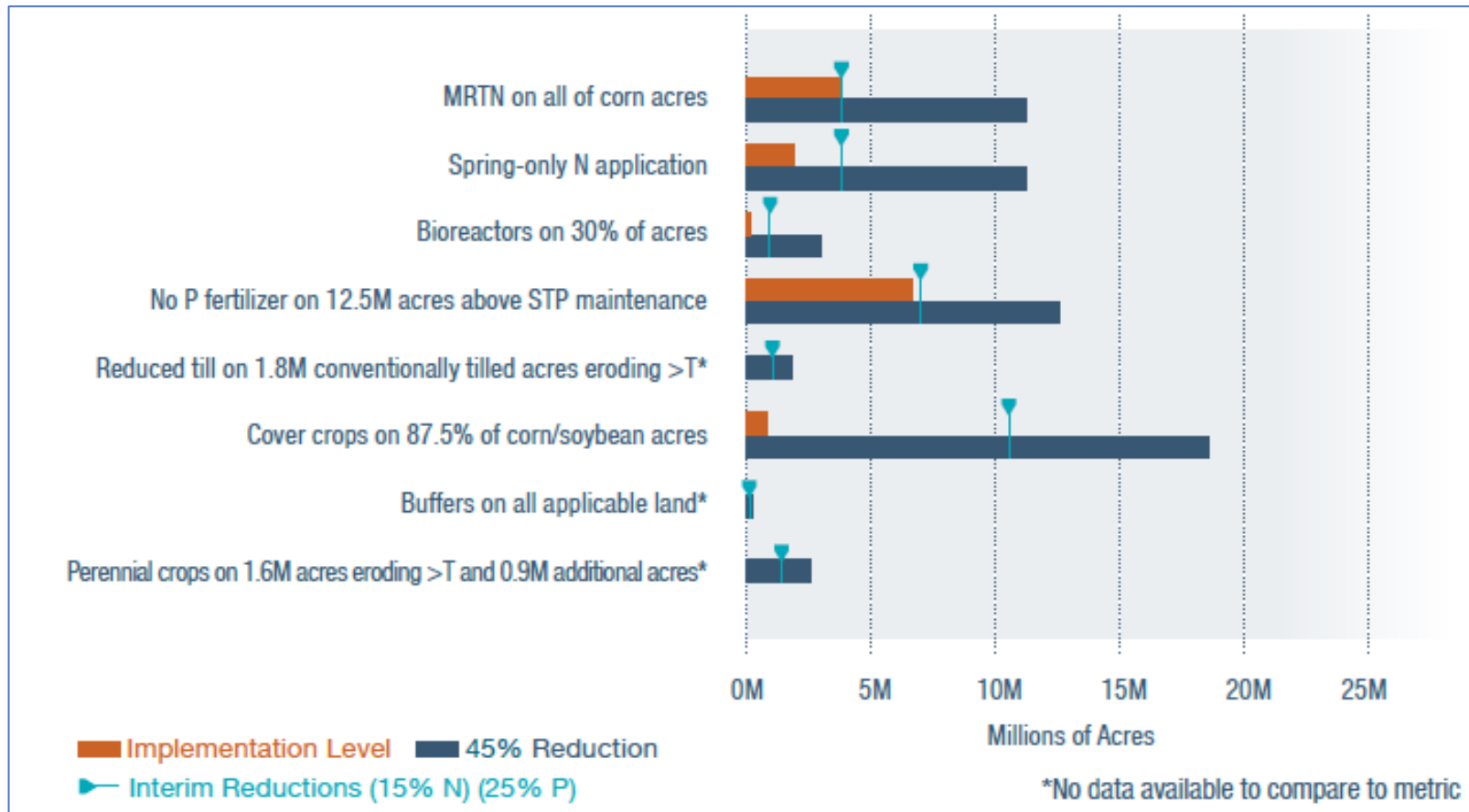
Adaptive Management Chapter

- Agriculture Implementation Progress



Adaptive Management Chapter

- Agriculture Implementation Progress



Adaptive Management Chapter

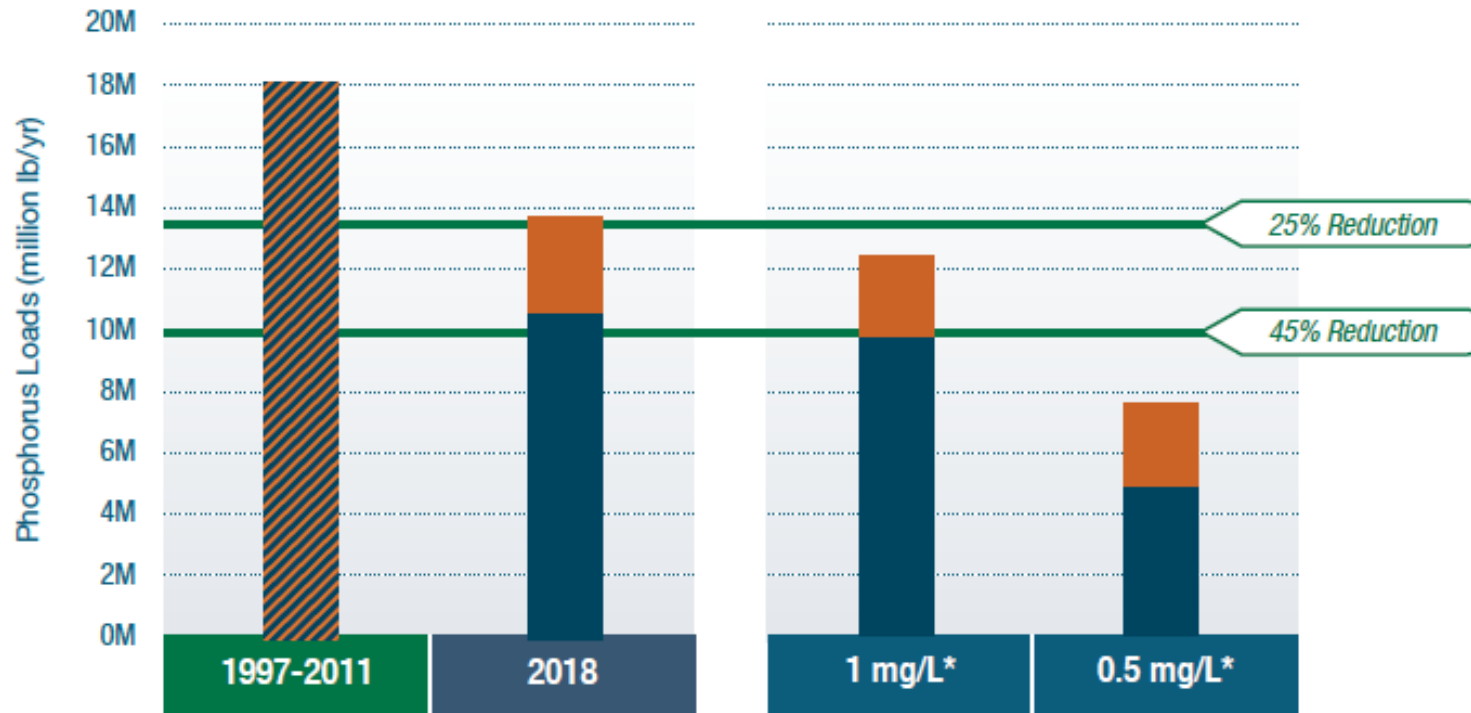
- **Agriculture Implementation Progress**
- For the 2021 Report, we will include additional graphs that will include the added scenarios that Reid developed.
- This will allow us to include additional implementation benchmarks.






Adaptive Management Chapter

• Point Source Implementation Progress

For the 2021 Report, we will include the 2019 and 2020 loads.



-  All Point Source Facilities
-  Major Municipal Facilities
-  Industrial and Minor Municipal Facilities

* Includes all point source facilities not differentiated by type or size



ILLINOIS
NUTRIENT LOSS
REDUCTION STRATEGY

Adaptive Management Chapter

- **Adopting New Conservation Practices and Updating Practice Performance**
- This section discussed the NLRs practice approval process developed by the U of I Science Team for adopting new conservation practices and updating practice performance.
- The process states that new practices or performance updates are to be submitted by December 31 of even-years.
- If practices or performance updates are submitted and approved, they will be discussed in the Science Assessment update Chapter 3.
- Do we want to delete this section from the 2021 Report?



Adaptive Management Chapter

- **Potential Future Resource Needs**
 - Soil and Water Conservation Districts
 - Wastewater Treatment Facility Upgrades
 - Stormwater Practice Adoption
 - Water Quality Monitoring
 - USGS
 - Illinois EPA
 - Illinois NLRS Meetings and Reporting

How do we want to address these issues in the 2021 Report?



Adaptive Management Chapter

- Other thoughts or additions to the Adaptive Management Chapter?



Performance Benchmark Committee

- **Additional topics of discussion from members.**

