ILLINOIS NUTRIENT LOSS REDUCTION STRATEGY | Improving our water resources with collaboration and innovation

Illinois Department of Agriculture

Illinois Environmental Protection Agency

Illinois Extension
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

Biennial Report Debrief: Adaptive Management

NLRS Annual Conference
January 25, 2024
Joan Cox, Illinois Extension

Lake Defiance at Moraine Hills State Park
Courtesy of Holly Hudson, Chicago Metropolitan Agency for Planning

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Nutrient Loads and Water Quality Goals – Nitrate Nitrogen

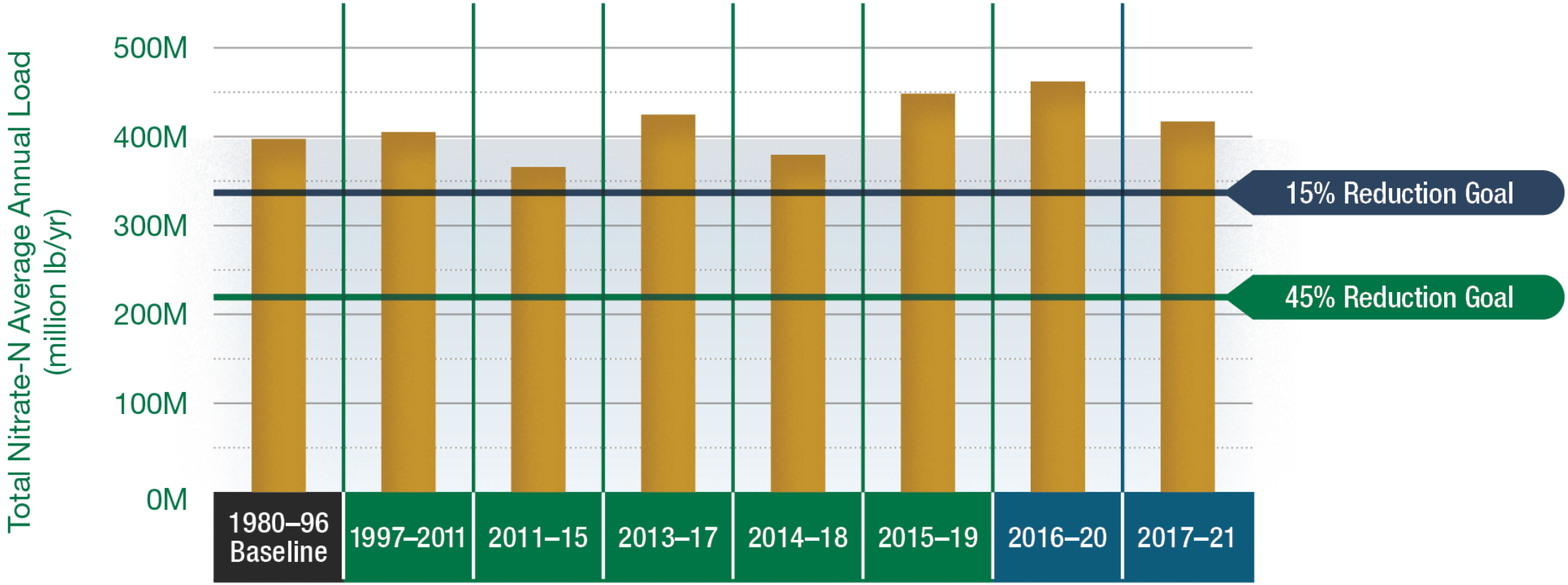

Figure 8.1. *Illinois nitrate-nitrogen loads relative to the 2025 interim and long-term reduction goals*

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Nutrient Loads and Water Quality Goals – Total Phosphorus

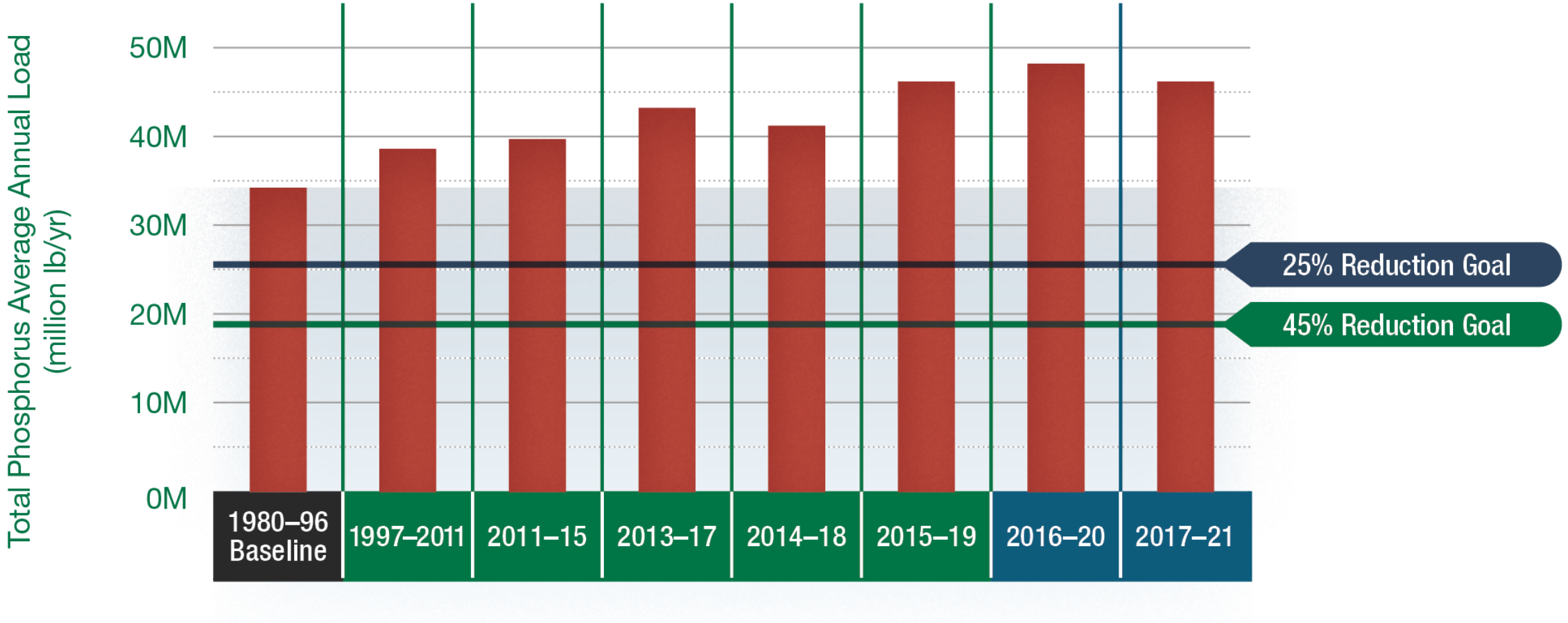

Figure 8.2. *Illinois total phosphorus loads relative to the 2025 interim and long-term reduction goals*

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Agriculture Implementation Scenarios

Scenario NP2

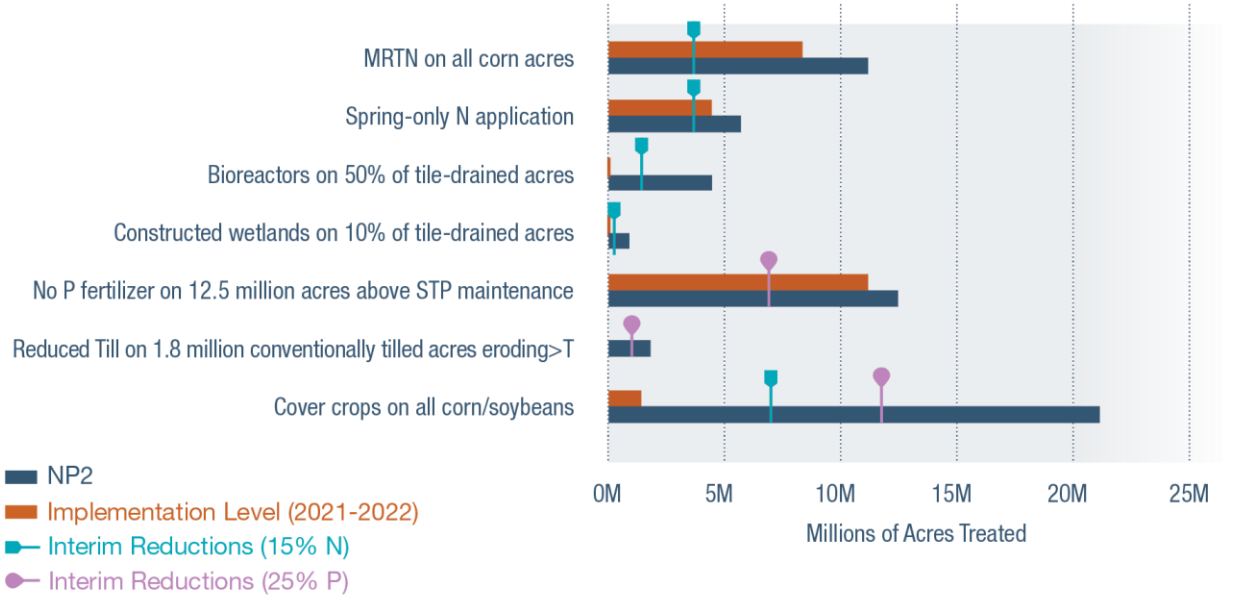

Figure 8.3. *Agricultural implementation as compared with scenario NP2*

Scenario NP3

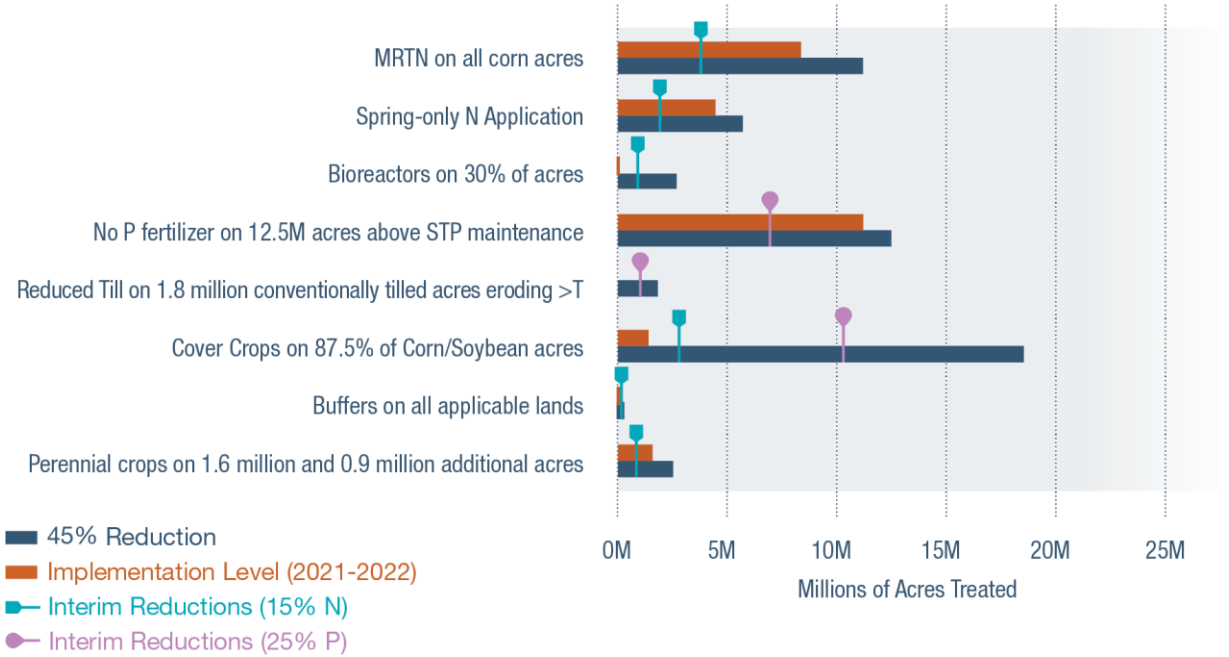

Figure 8.4. *Agricultural implementation as compared with scenario NP3*

Agriculture Implementation Scenarios

Scenario NP7

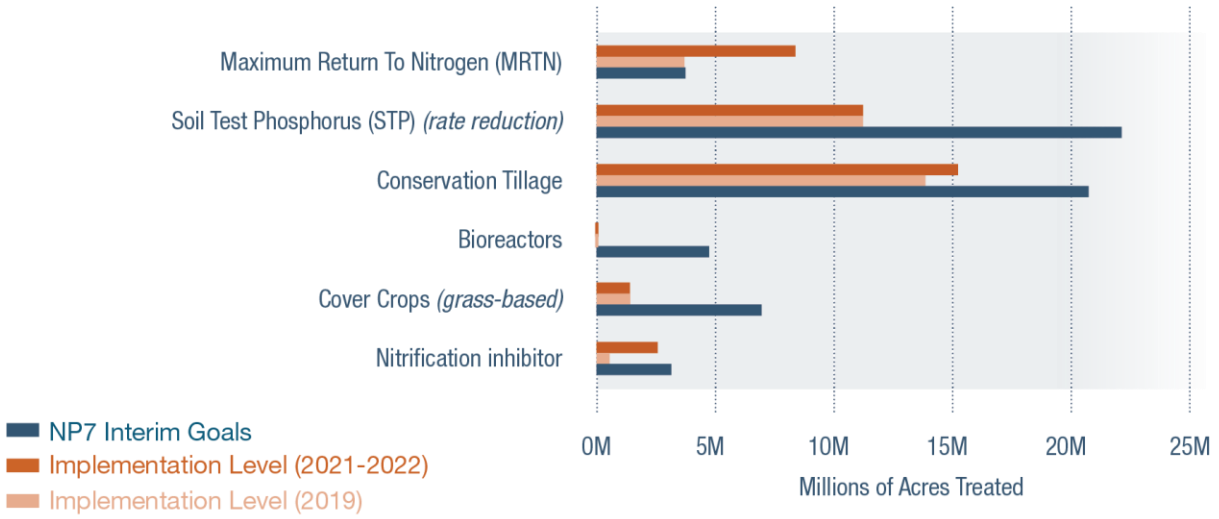

Figure 8.5. *Agricultural implementation as compared with scenario NP7. Scenario NP7 represents the level of practice adoption needed to meet 2025 interim reduction goals.*

Scenario NP8

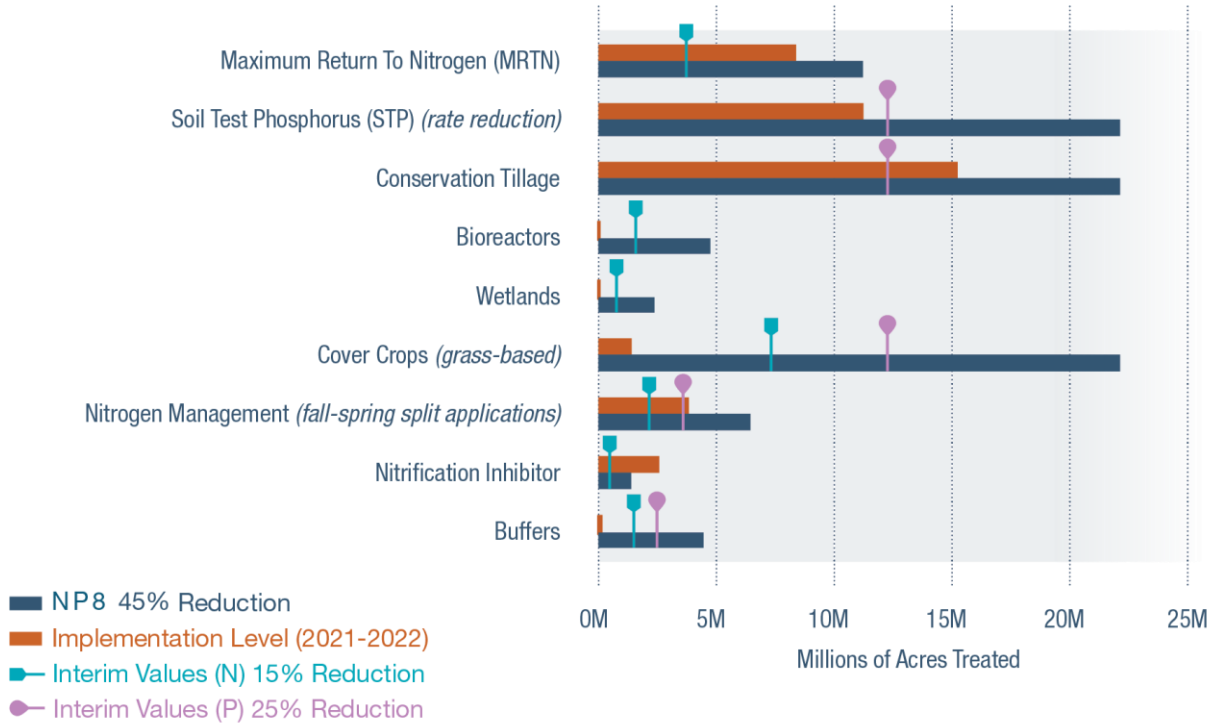

Figure 8.6. *Agricultural implementation as compared with scenario NP8*

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Scenario NP8

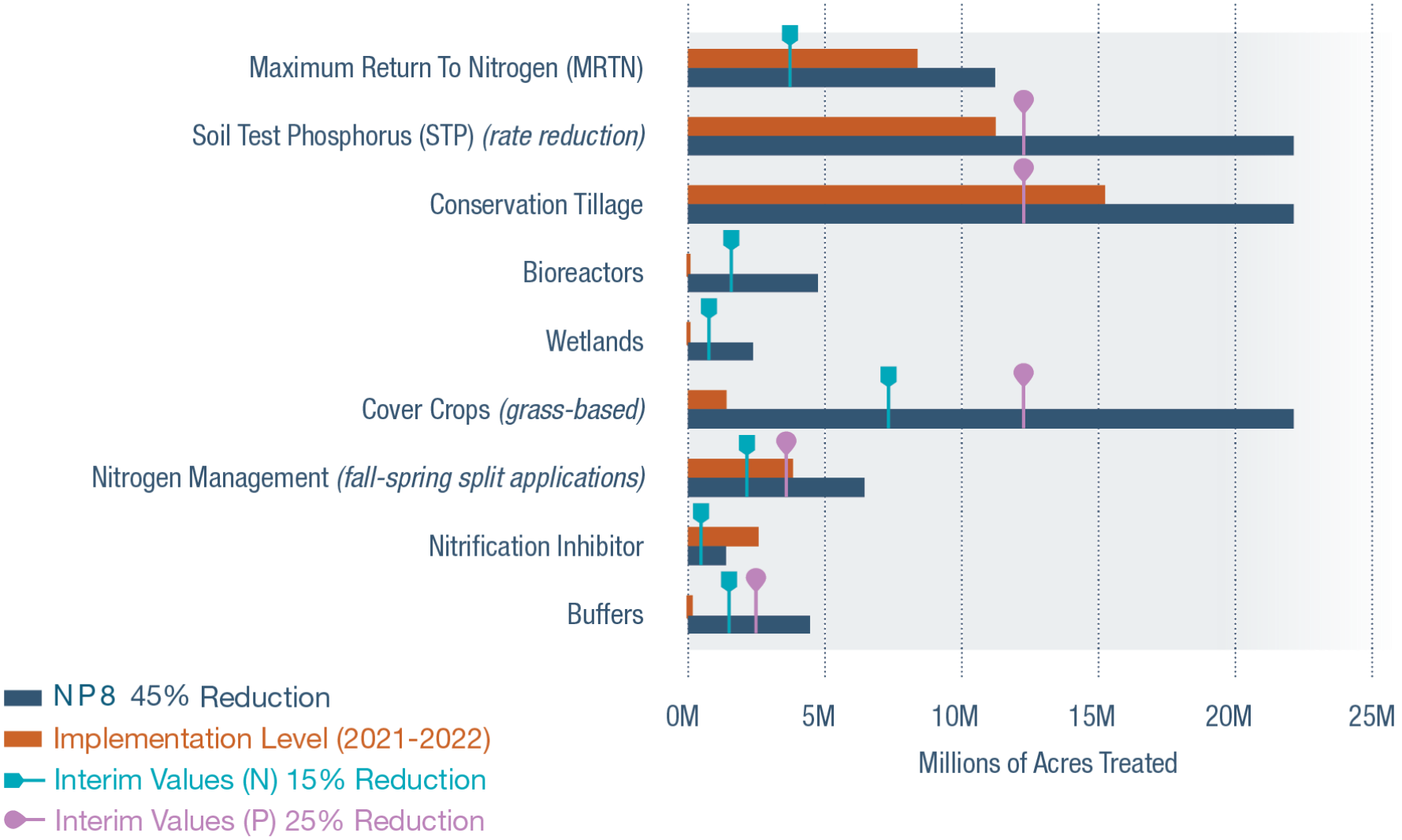

Figure 8.6. *Agricultural implementation as compared with scenario NP8*

Point Source Total Phosphorus Reductions

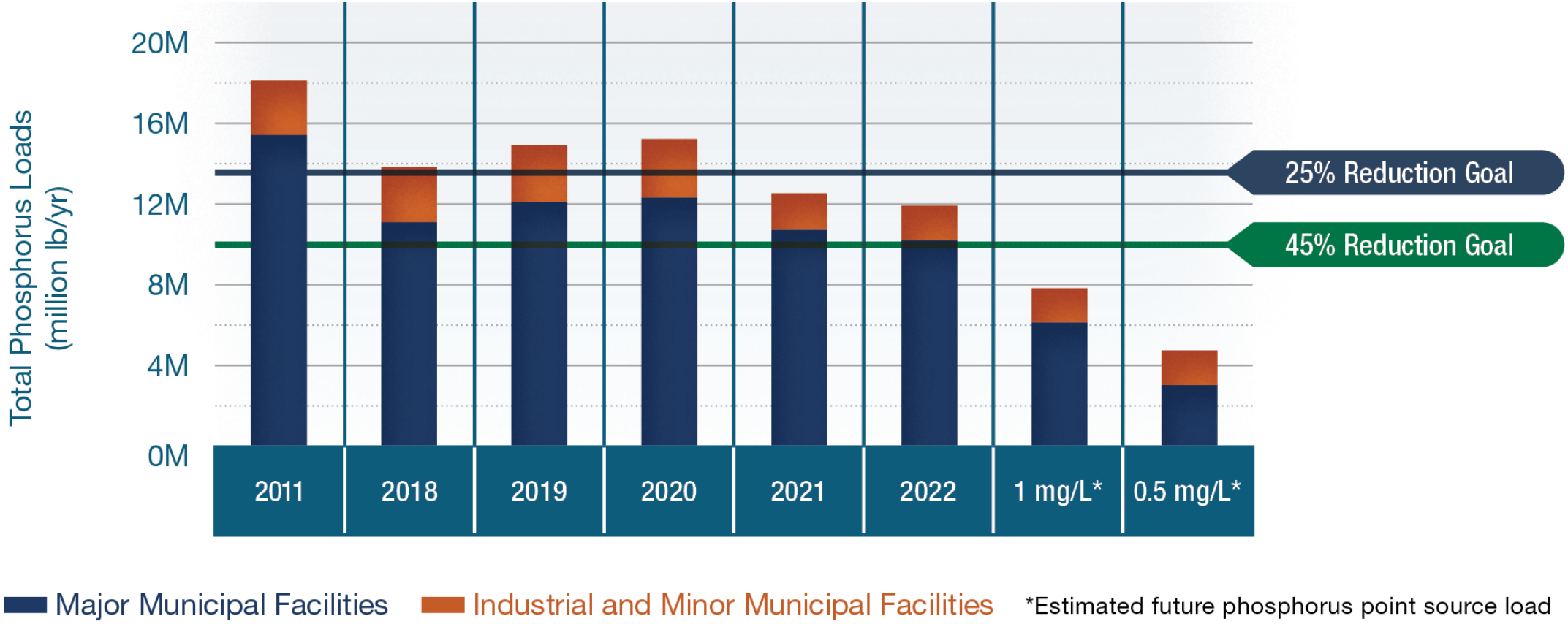

Figure 8.7. *Total phosphorus point source load relative to the 2025 interim and long-term reduction goals*

Watershed-Based Plans

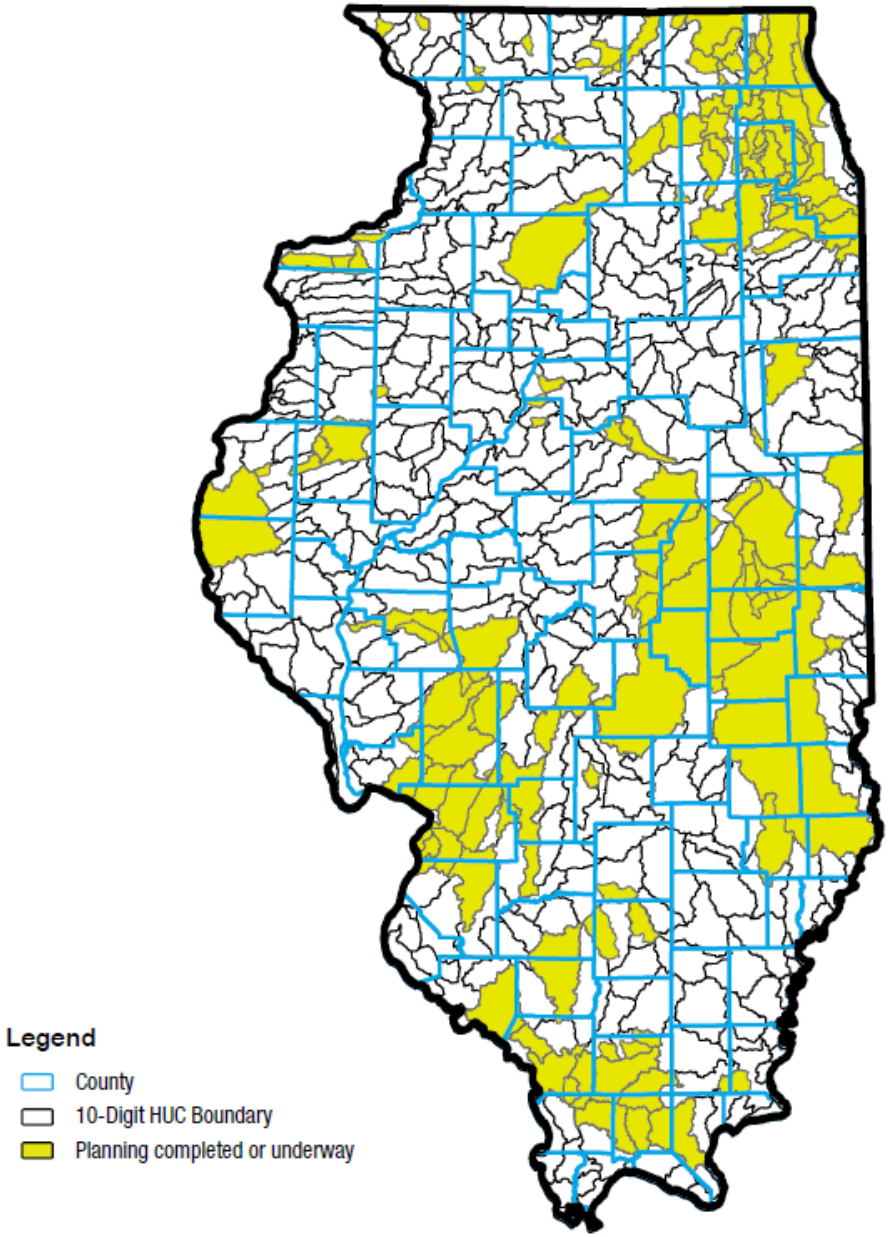

Figure 8.8. Watershed planning efforts reported to Illinois EPA

Since 2004, 138 plans.

What if all components of watershed-based plans were implemented?

- 20 Million lb/year nitrogen reduction
- 3.5 Million lb/year phosphorus reduction

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Looking Ahead - Research

Watershed-Level Research

- Illinois River Basin - P sink to source dynamics and impact on loads
- Rock River – legacy nitrate loading from groundwater
- Subwatershed Nutrient Load Factors: streamflow, such as nutrient management, population changes, hydrology, and legacy nutrients
- Local strategies for specific watersheds

Legacy Nutrient Contribution Quantification

Determine the extent and impact of nutrients from legacy sources.

Streambank Erosion and Phosphorus Loss

Improve measurement methodologies for streambank erosion's contribution to phosphorus loss.

Tracking

Improved methods/sources for tracking nutrient reduction impacts from conservation practices

Impact of climate change

Influence of climate change on water yields nutrient loads,
and nutrient management practices.

Looking Ahead – Strategy Considerations

Human and Financial Resources

- Conservation Planning and Technical service capacity building (IDOA, NRCS)
- Coordinating messaging among government and NGO efforts
- NARPS implementation
- Wastewater treatment maintenance strategies
- Green Infrastructure training and systems development

Tracking methods and data sources

- NASS NLRS Survey and IFCA Illinois Ag Retailer Survey
- Satellite imagery of buffers, tillage
- HUCs, implementation levels, nutrient loading
- GI inventory

Climate change and its impact on nutrient management and practices

- Carbon sequestration and emissions
- Programs and tools to bring climate change awareness and practice implementation incentives
- Illinois Climate Assessment
- Climate planning and working lands
- Climate-smart partnership

Continued…

Looking Ahead – Strategy Considerations

Disadvantaged Communities
• U.S. EPA Justice40 and Gulf Hypoxia Funding priorities in Illinois
Cross Sector Partnership and Goals Alignment
• Long-term funding strategy and scaling up practice implementation • U.S. EPA's 2022 memorandum, Accelerating Nutrient Reductions in the Nation's Waters • United Nation's Sustainable Development Goals

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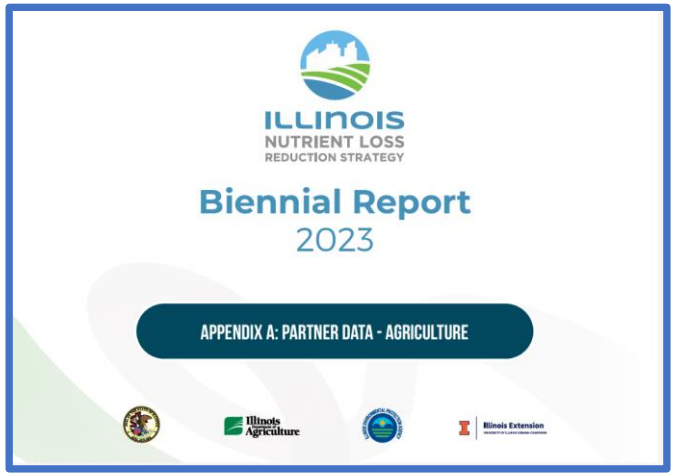
Looking Ahead - Future Needs

Agriculture
Federal Assistance – Gulf Hypoxia Program Funding, Inflation Reduction Act and USDA programs
State Assistance – PFC, Fall Covers for Spring Savings Program, SWCD administration of programs
Point Source
Wastewater Treatment Facility Upgrades – loans and cost-share for local governments, private
NARPS implementation
Urban Stormwater
Local and state assistance for: - Green Infrastructure program grants (maintenance, GI projects/systems) - Training (design, installation, maintenance) - Green Infrastructure Inventory

NLRS Partner Updates Online

Partner Data – Appendix A (staff & financial resources, education & outreach)

- Agriculture – 23 organizations (plus 95 SWCDs)
- Point Sources – 11 organizations
- Urban Stormwater – 11 organizations



Partner Narratives – Appendix E (programs and projects)

- Agriculture – 39 organizations
- Point Sources – 7 watershed groups
- Urban Stormwater – 9 organizations

https://epa.illinois.gov/topics/water-quality/watershed-management/excess-nutrients/nutrient-loss-reduction-strategy.html

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Looking Ahead - Water Quality Monitoring

USGS super gages
USGS Integrated Water Science Illinois River Basin studies
Illinois EPA Ambient Water Quality Monitoring Network
ISGS and ISWS well monitoring network and the IDOA Nitrate Analyzer

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Report Corrections by Feb. 15

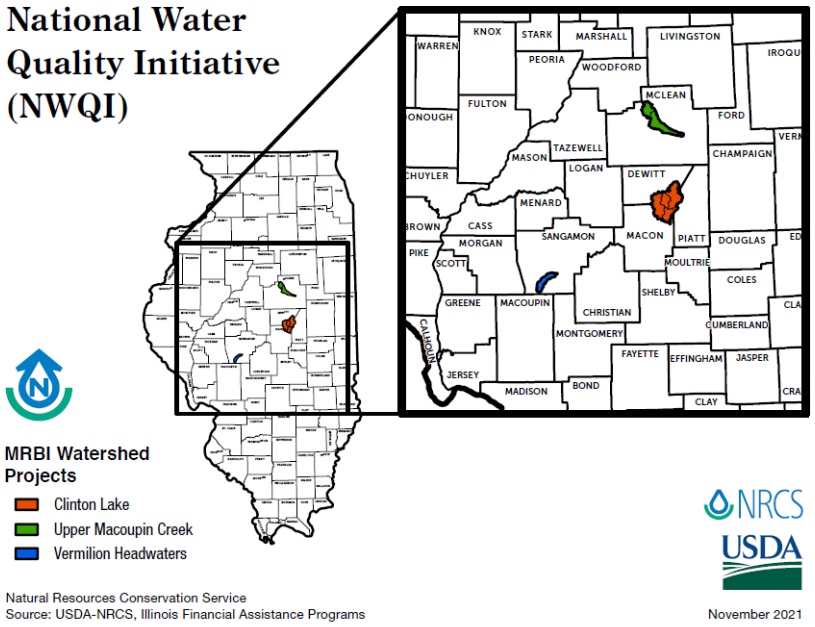

Figure 4.11. Eligible National Water Quality Initiative watersheds in Illinois

Figure 4.11
NRCS NWQI watershed names in legend are incorrect.

pg. 72 (pg. 86 e-version)

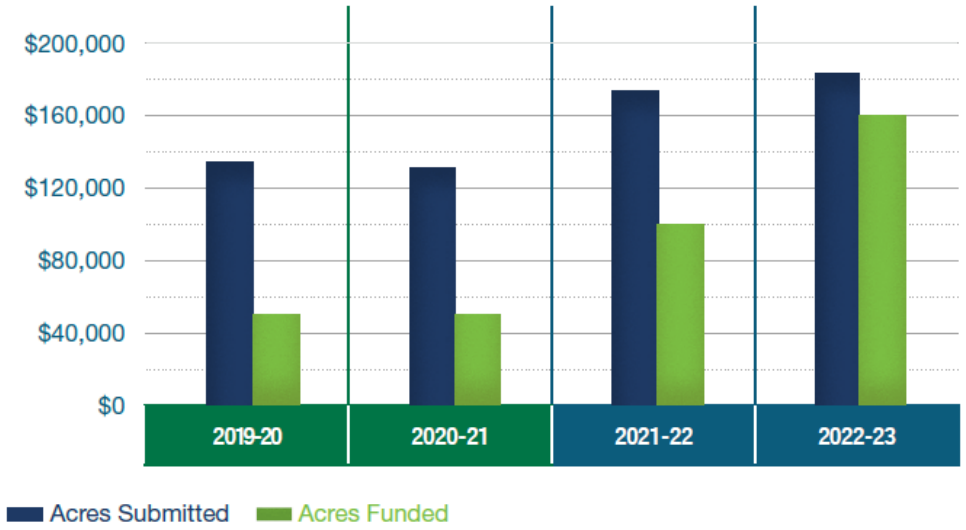

Figure 8.10 Acres submitted to and funded by the Fall Covers for Spring Savings program since 2019

Figure 8.10

Fall Cover units should be acres, not dollars.

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Contact Us

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