Trends in the Pollutant Source Sectors: Policy Implications for the Partnership

Chesapeake Bay Commission
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Chesapeake Bay Program Office
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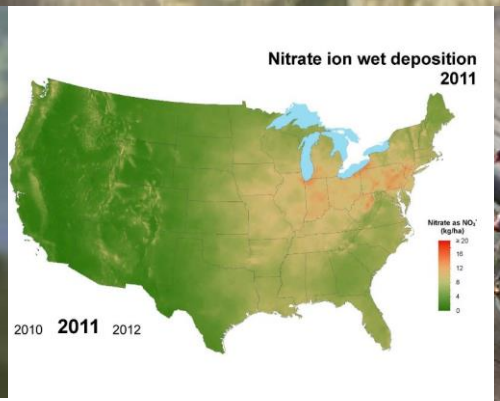
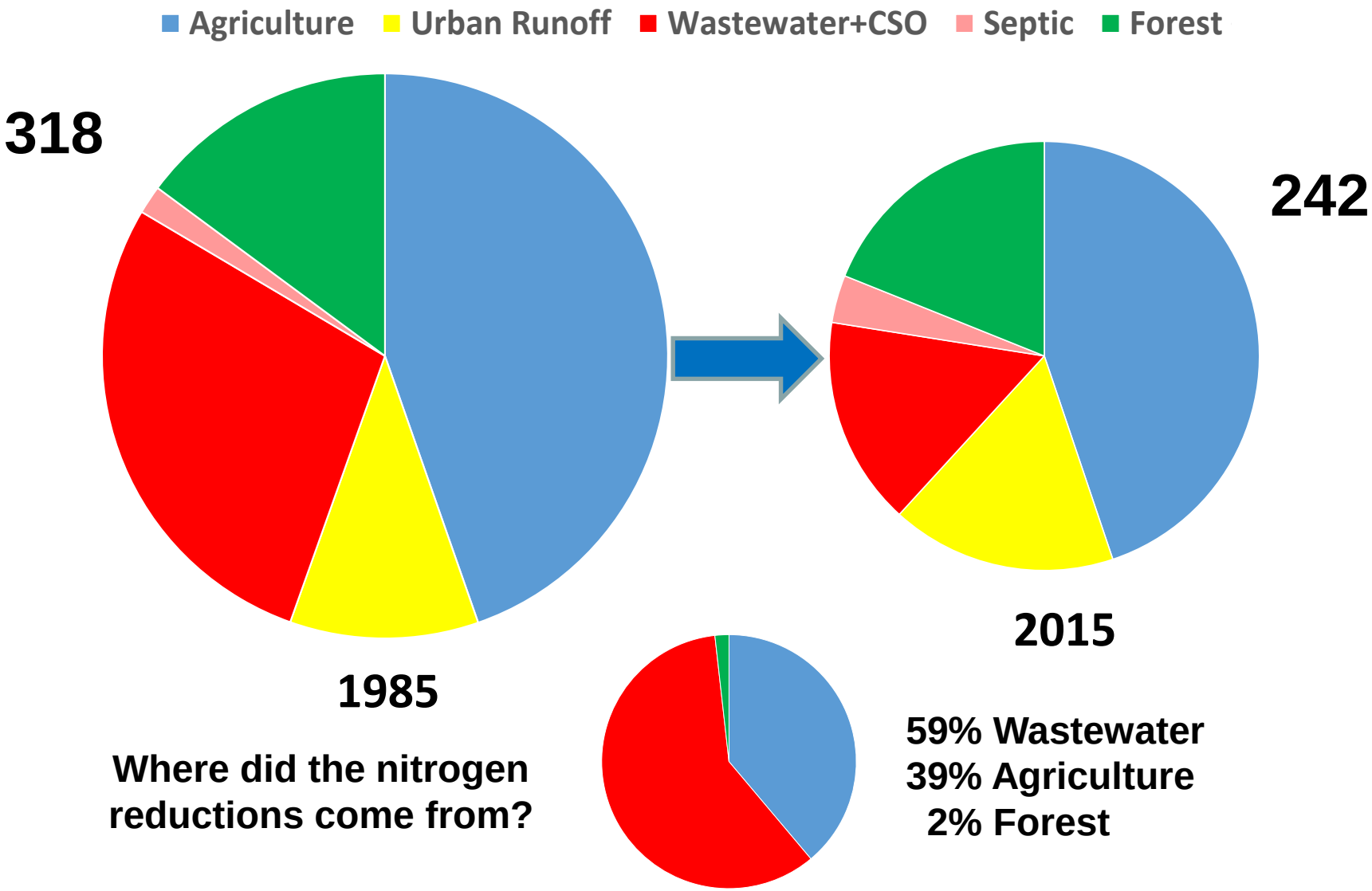
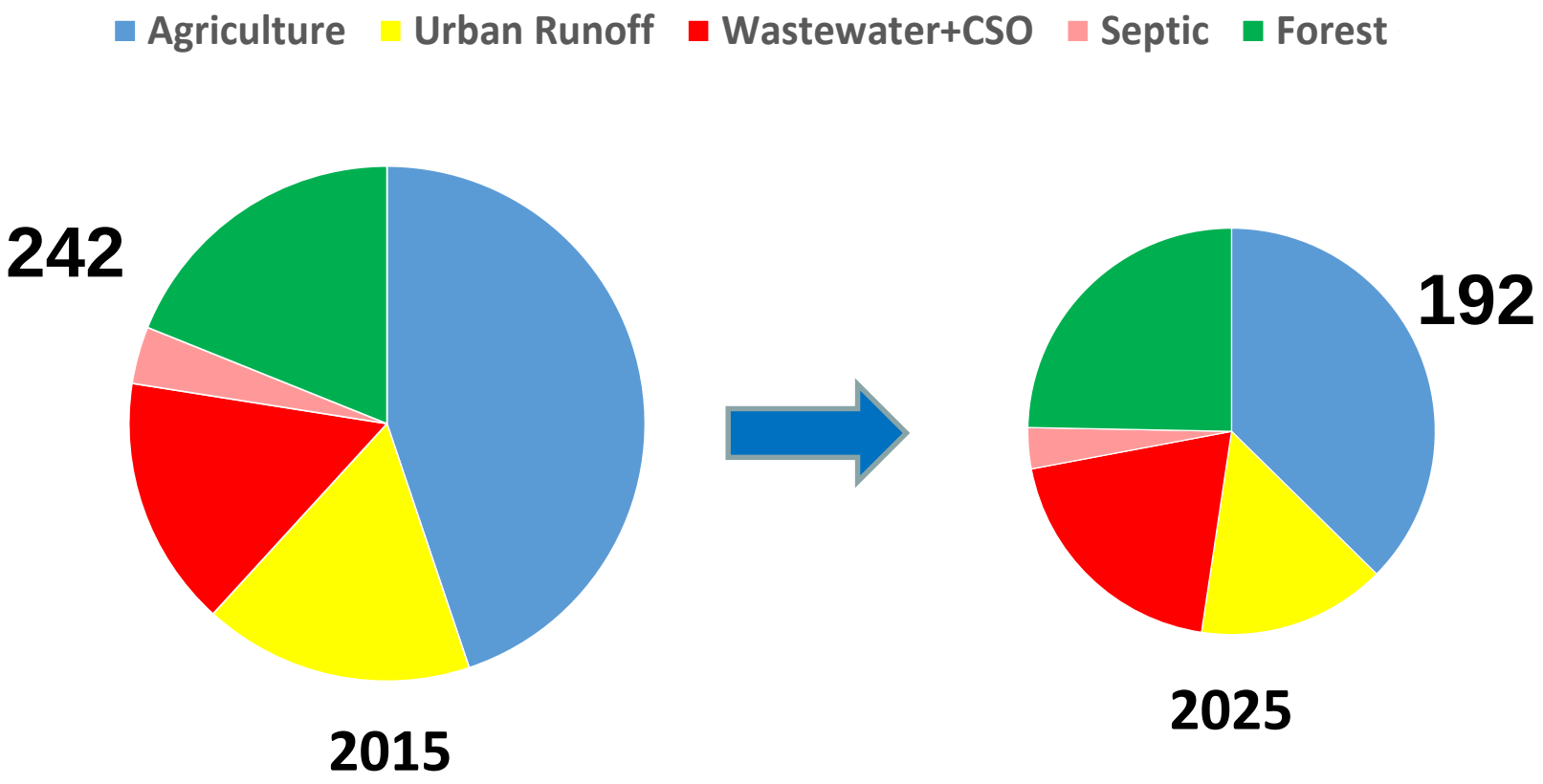
SUCCESSES—SEEING REAL BAY AND WATERSHED RESPONSES



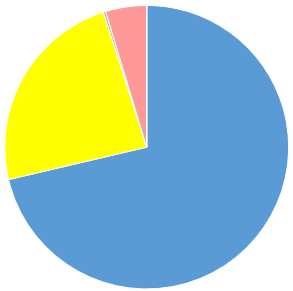
Chesapeake Bay Watershed Nitrogen Loads: 1985-2015



Chesapeake Bay Watershed Nitrogen Reductions: 2015-2025



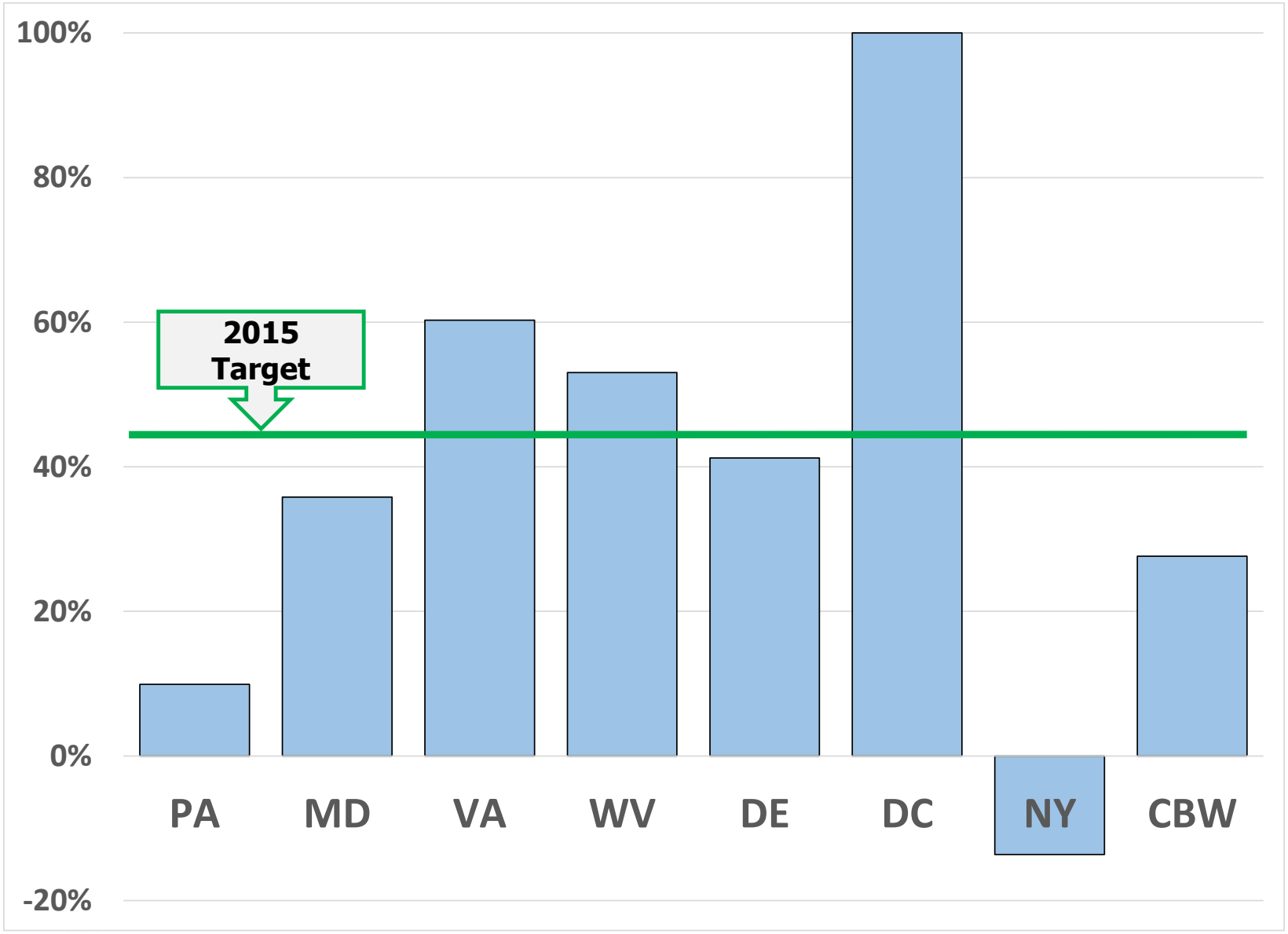
Where <u>will</u> the remaining nitrogen reductions* come from?



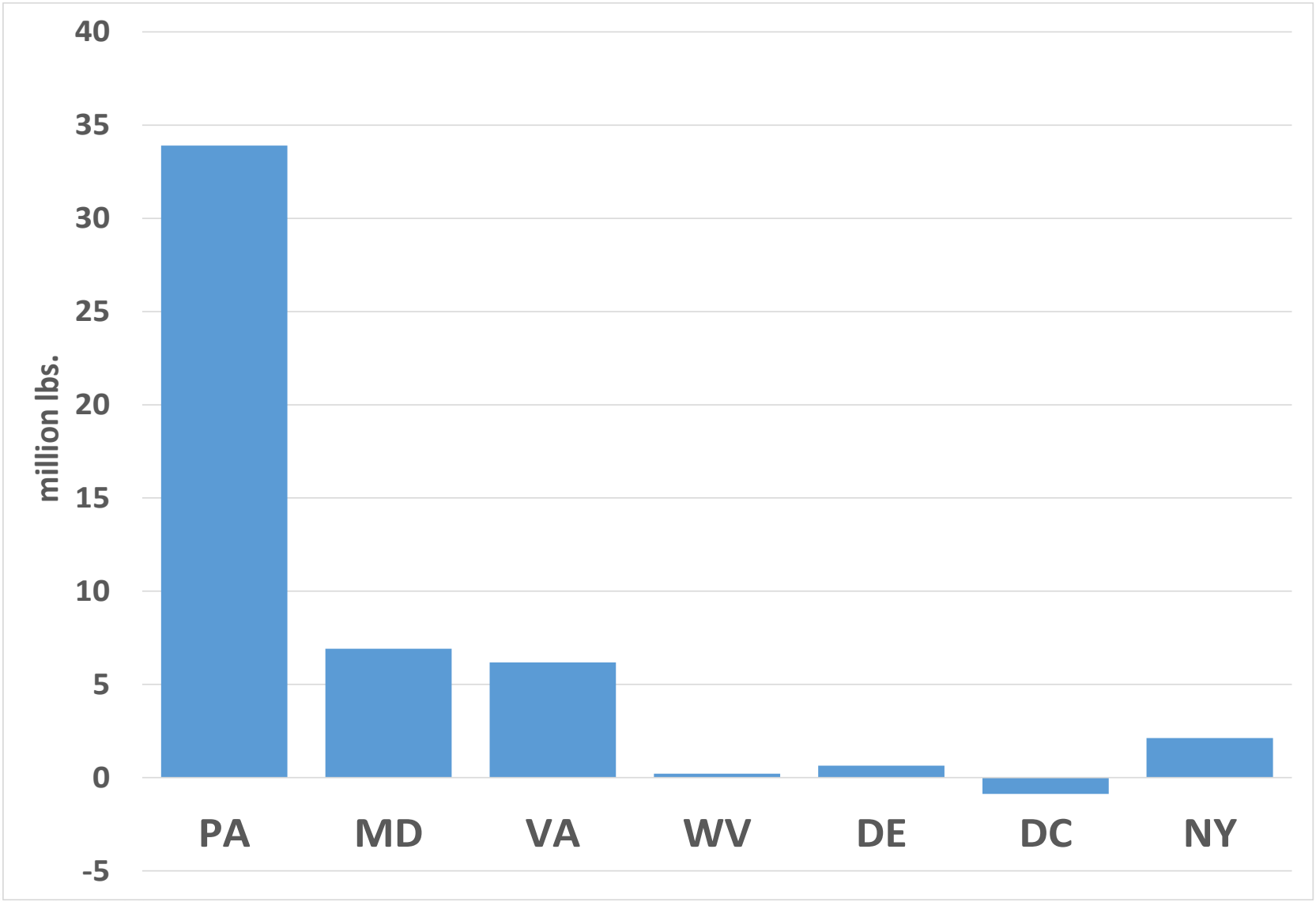
71% Agriculture
24% Urban Stormwater
5% Septic Systems

*Based on the jurisdictions' Phase II WIPs.

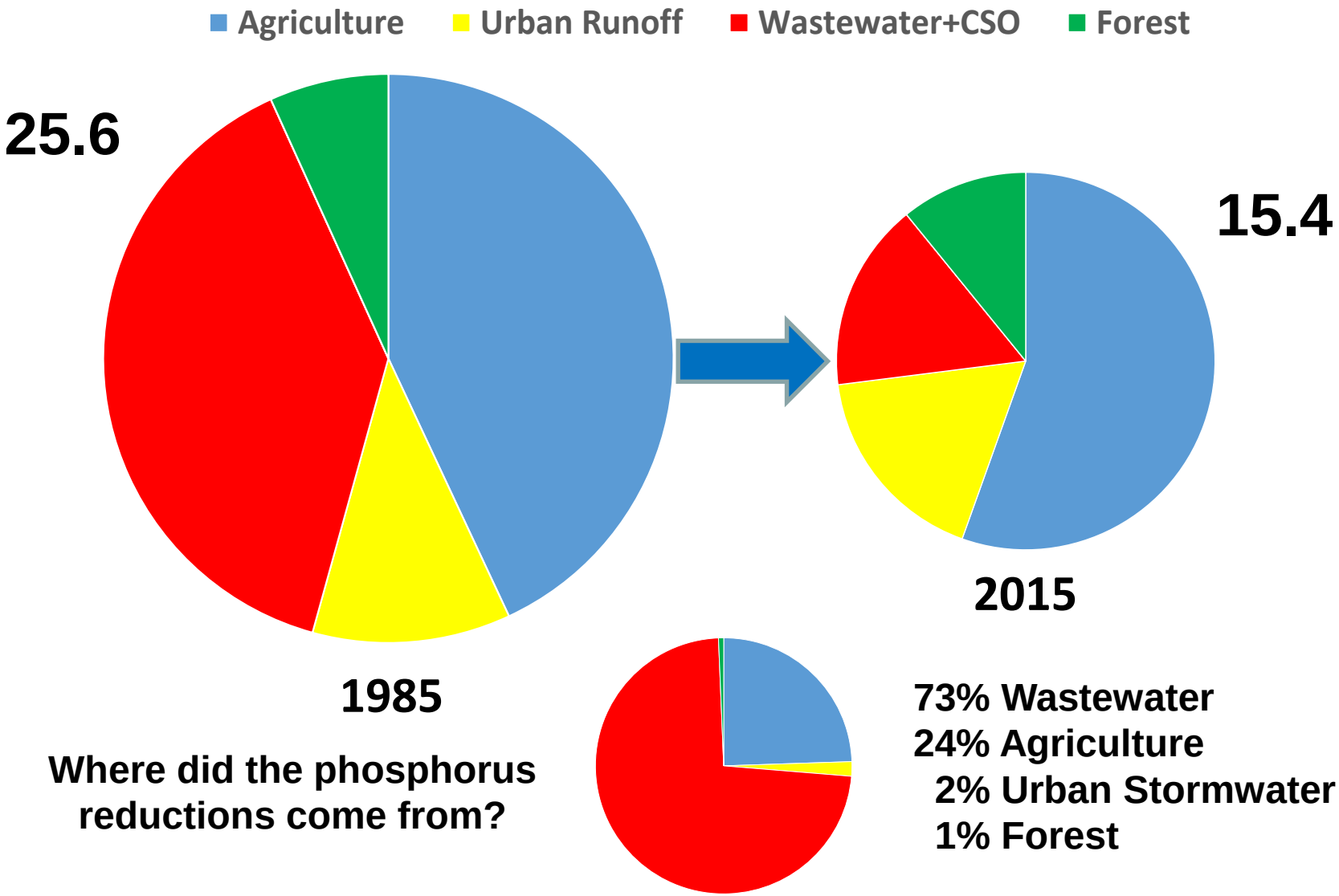
Percent of Nitrogen Goal Achieved



Nitrogen Load to be Reduced by 2025



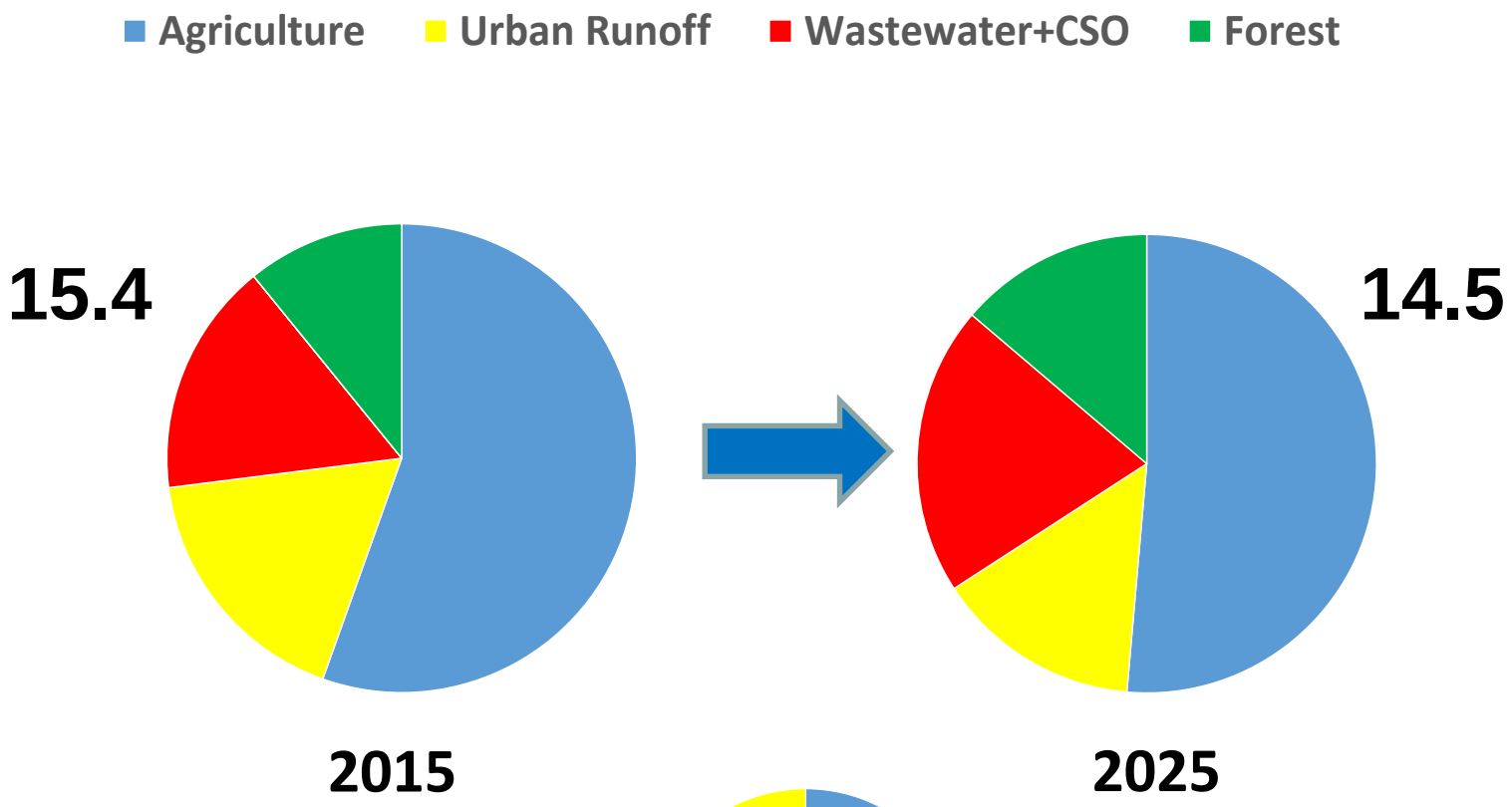
Chesapeake Bay Watershed Phosphorus Loads: 1985-2015



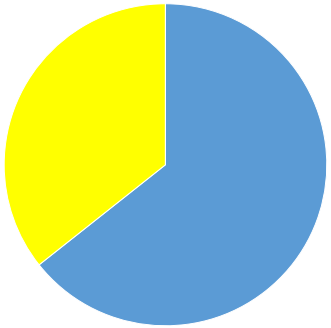
Where did the phosphorus reductions come from?

73% Wastewater
24% Agriculture
2% Urban Stormwater
1% Forest

Chesapeake Bay Watershed Phosphorus Reductions: 2015-2025



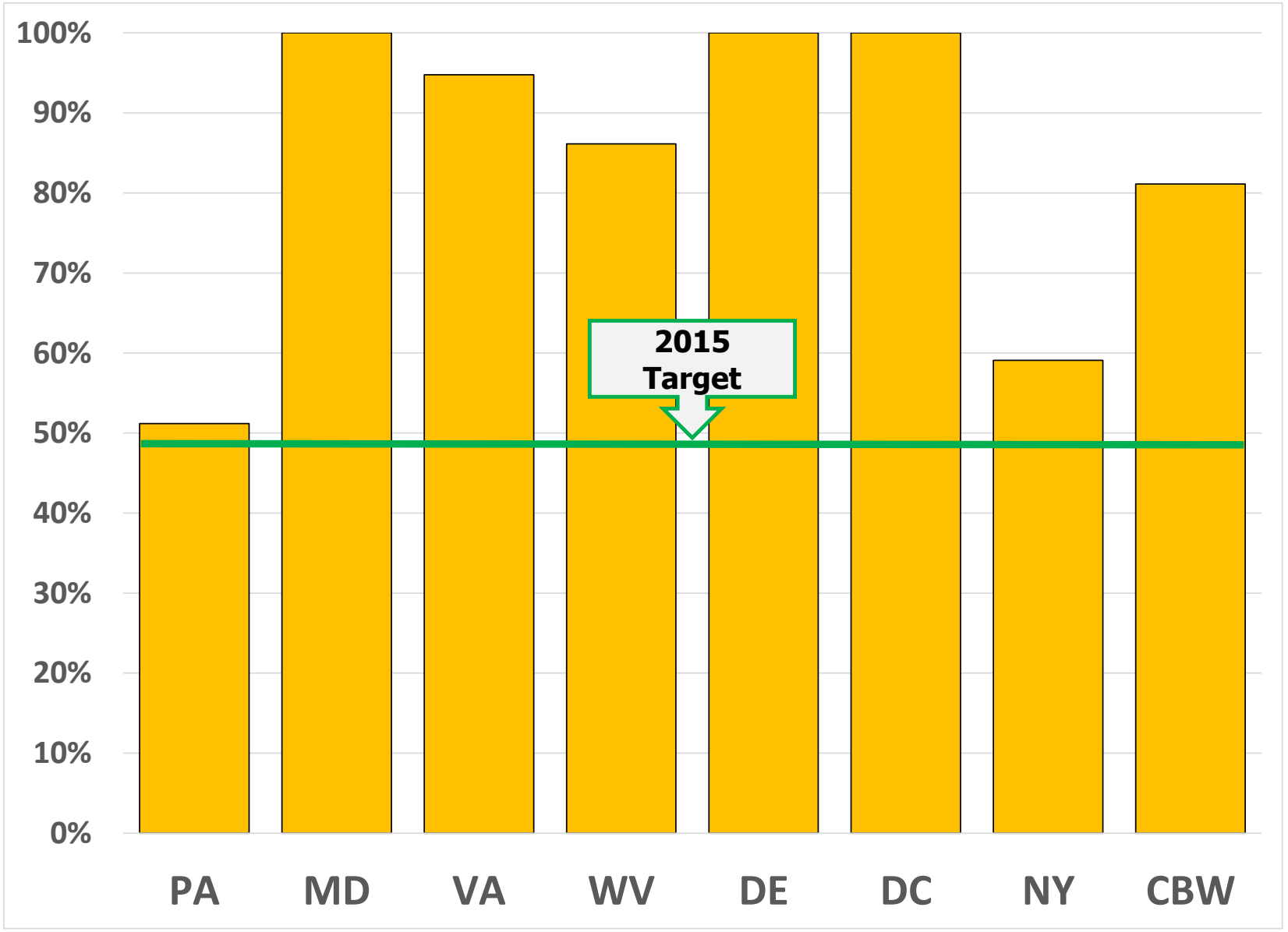
Where <u>will</u> the remaining phosphorus reductions* come from?



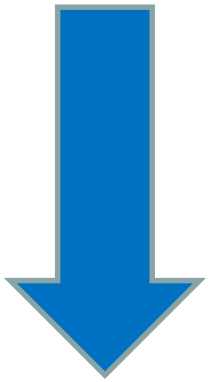
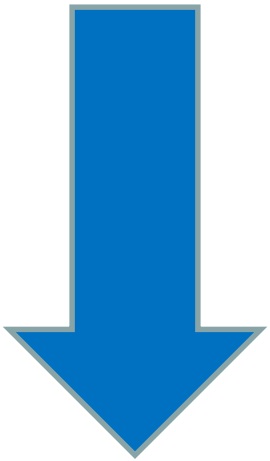
64% Agriculture
36% Urban Stormwater

*Based on the jurisdictions' Phase II WIPs.

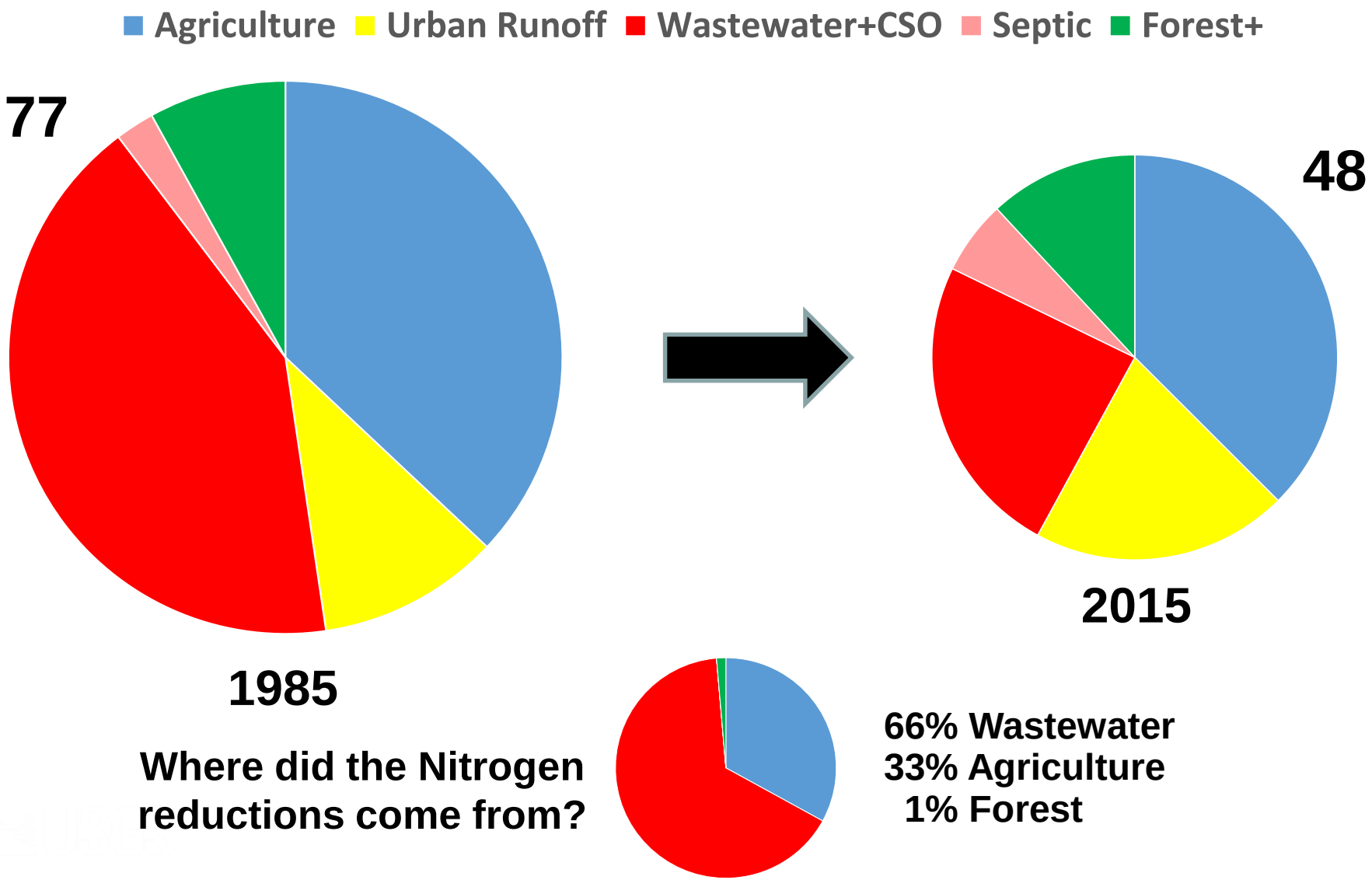
Percent of Phosphorus Goal Achieved



Pollutant Source Sector Implications

Phase II WIPs	Phase III WIPs	2025 Nitrogen Goal
		**Agriculture**
		**Urban Stormwater**
	?	**Septic Systems**

Maryland Nitrogen Loads: 1985-2015



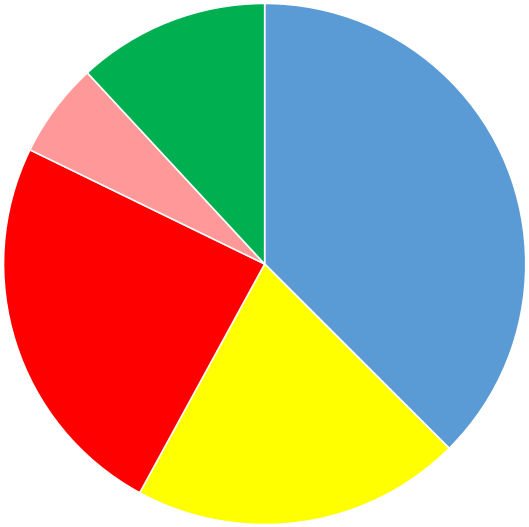
Where did the Nitrogen reductions come from?

66% Wastewater
33% Agriculture
1% Forest

Maryland Nitrogen Loads: 2015-2025

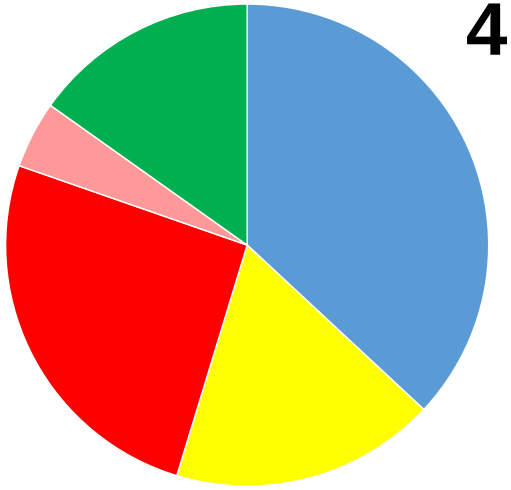
Agriculture | Urban Runoff | Wastewater+CSO | Septic | Forest+

48



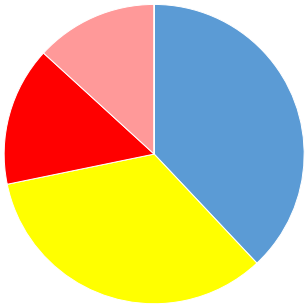
2015

41



2025

Where <u>will</u> the remaining nitrogen reductions* come from?



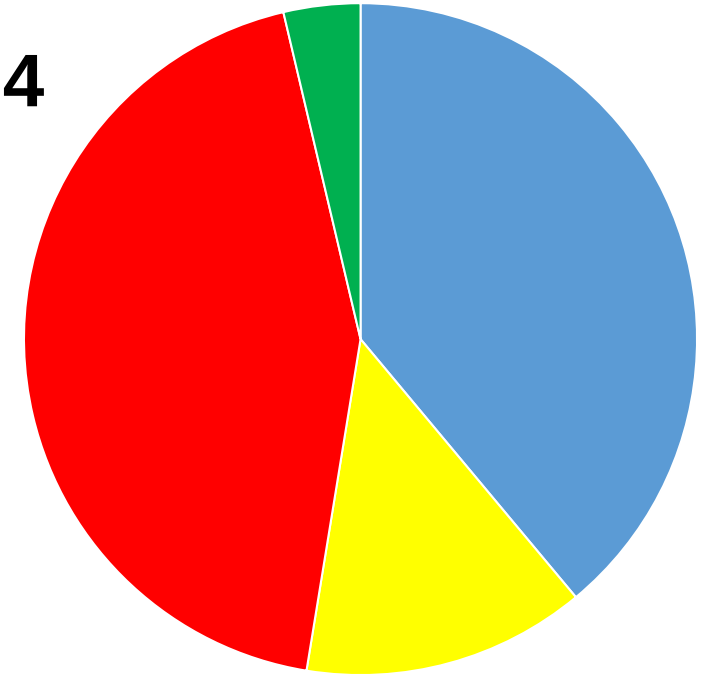
38% Agriculture
34% Urban
15% Wastewater
13% Septic

*Based on the jurisdictions' Phase II WIPs.

Maryland Phosphorus Loads: 1985-2015

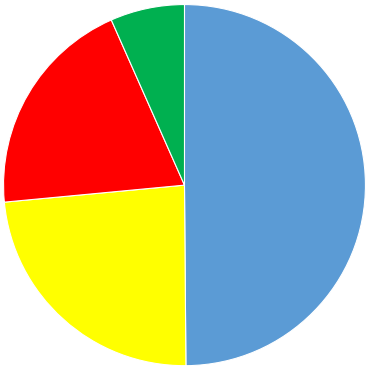
Agriculture Urban Runoff Wastewater+CSO Forest+

5.4



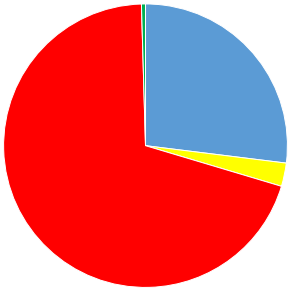
1985

2.8



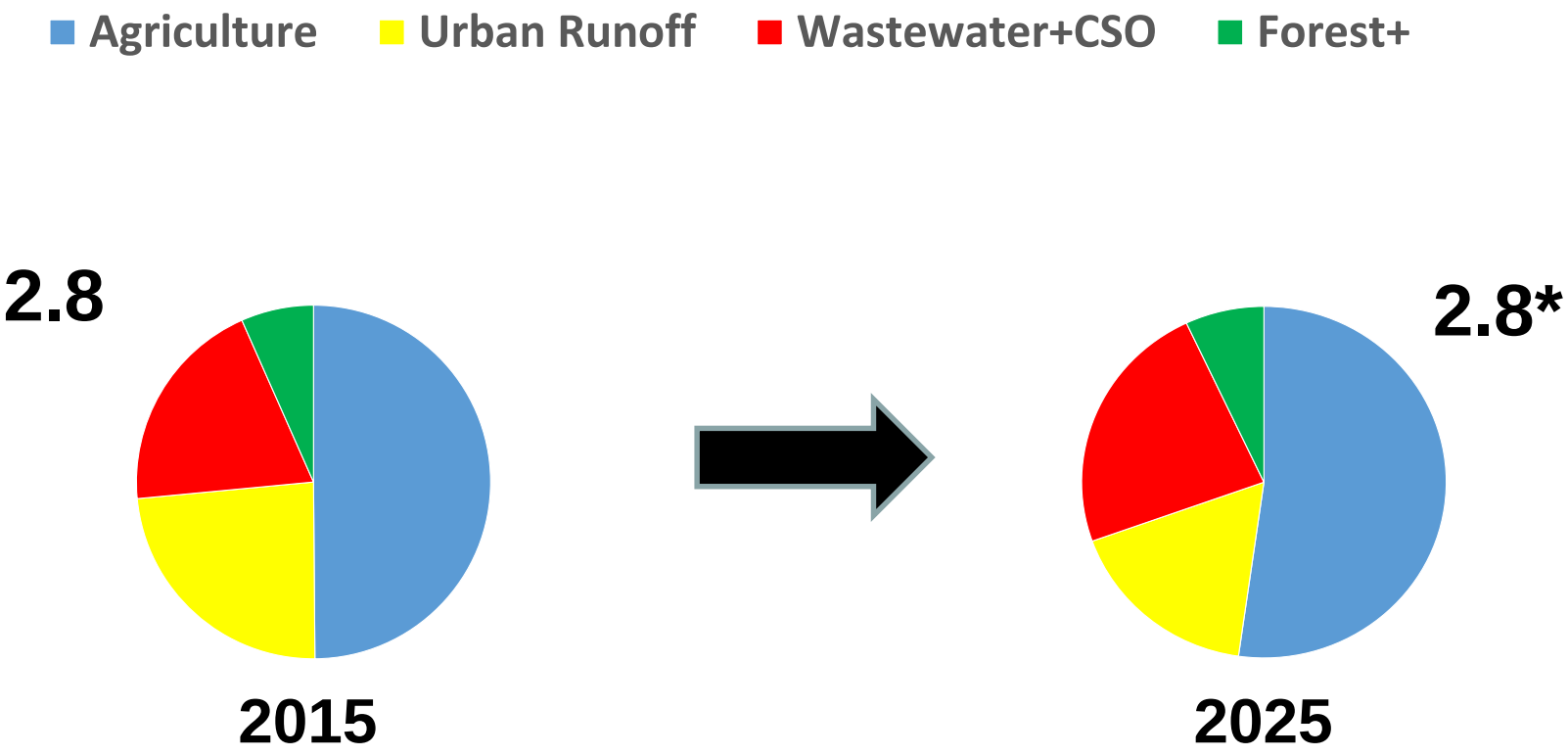
2015

Where did the Phosphorus reductions come from?



70% Wastewater
27% Agriculture
3% Urban

Maryland Phosphorus Loads: 2015-2025

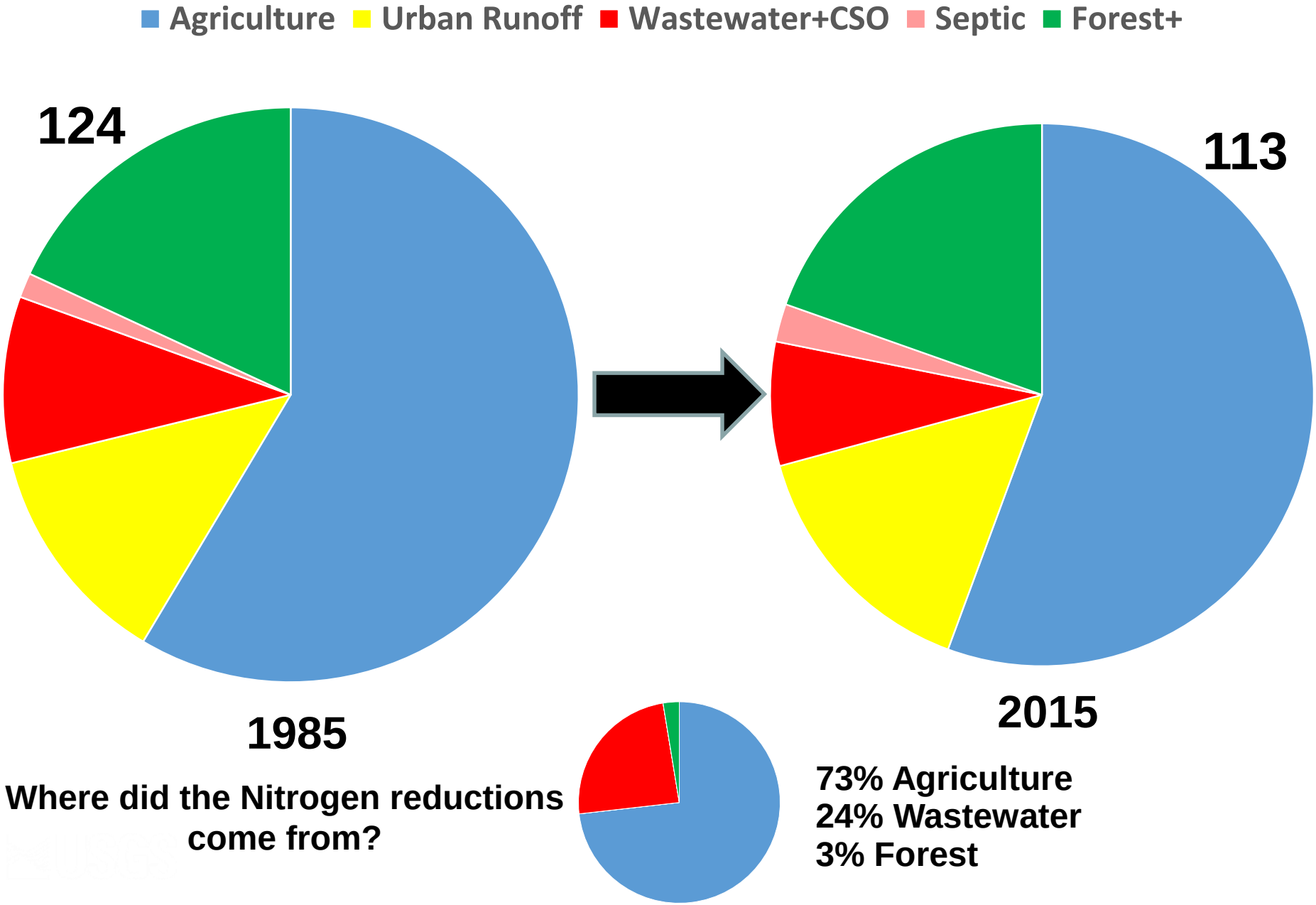


*Source sectors as envisioned in Maryland's Phase II Watershed Implementation Plan

Maryland's Source Sector Challenges

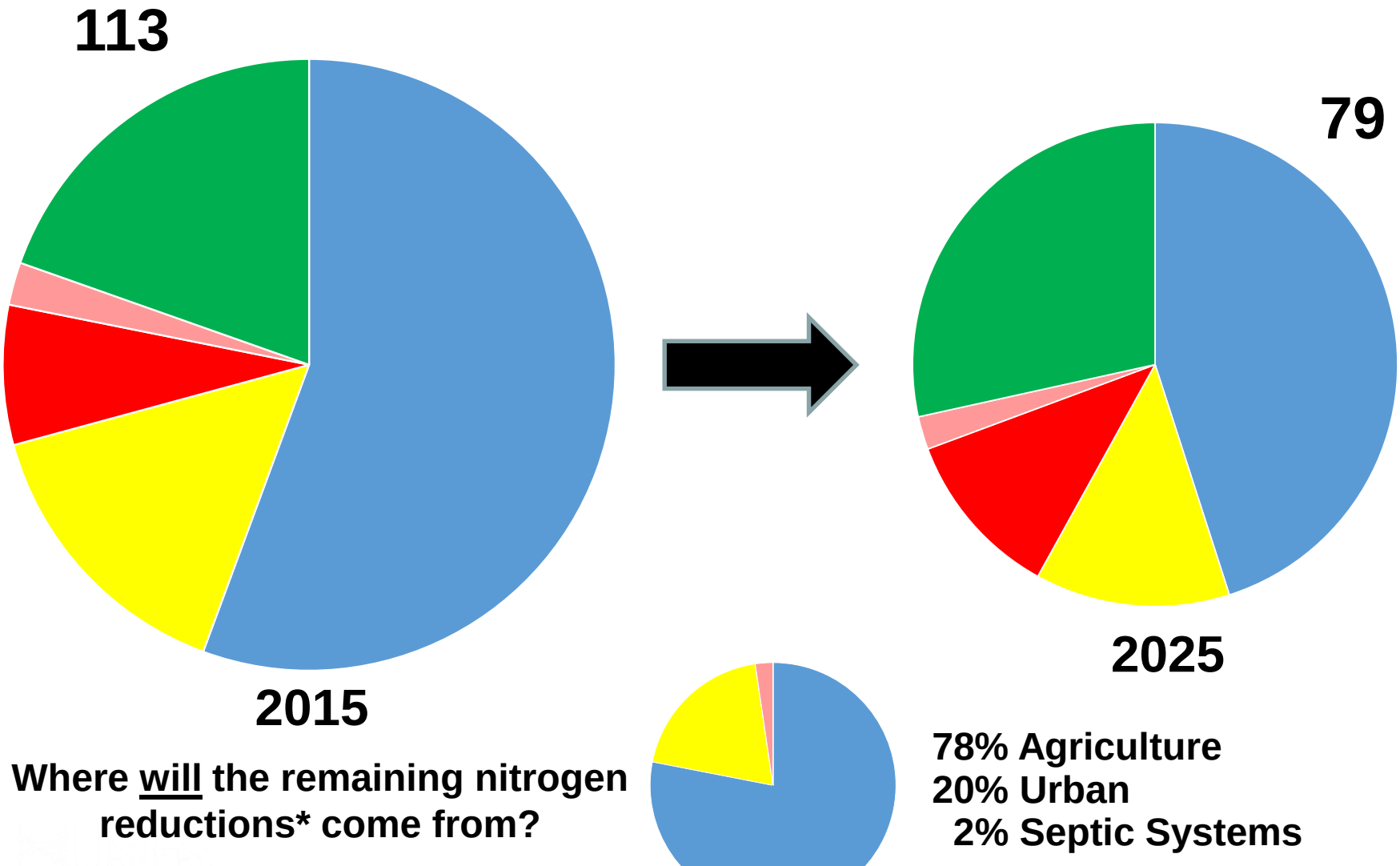
- Recognizing they will achieve needed urban stormwater reductions, but not by 2025
- Pulling back on expectations for septic system upgrades to nitrogen reducing treatment systems
- Relying on over-reductions in wastewater sector to achieve state-wide goals by 2025
- Accounting for phosphorus saturated soils and better understanding of phosphorus loads
- Where the reductions take place in Maryland matters to the quality of local tidal waters

Pennsylvania Nitrogen Loads: 1985-2015



Pennsylvania Nitrogen Loads: 2015-2025

Agriculture | Urban Runoff | Wastewater+CSO | Septic | Forest+

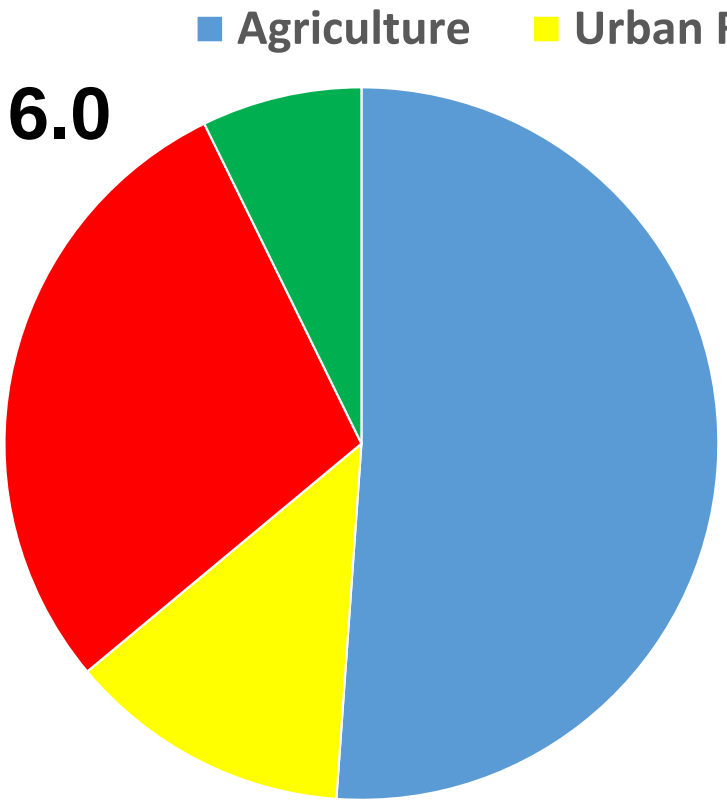


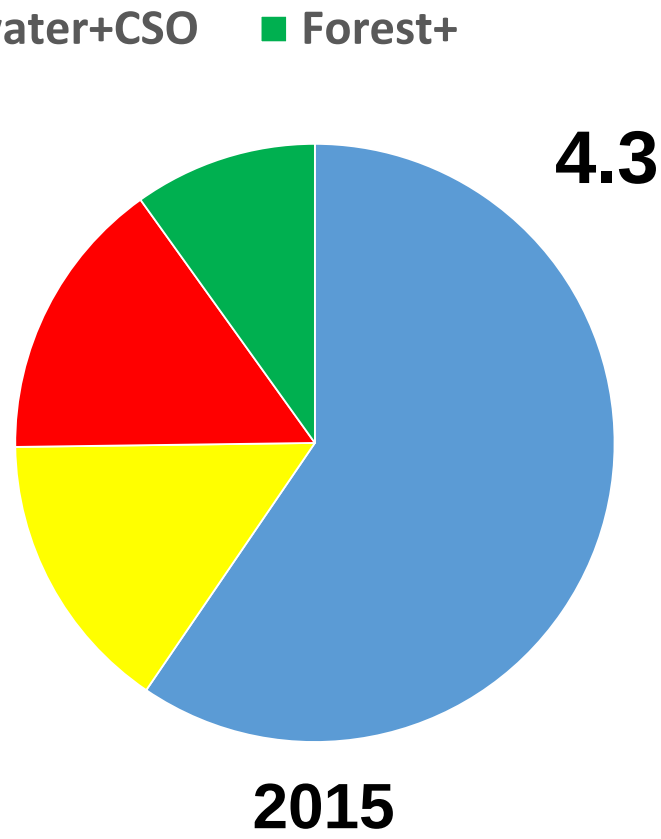
Where will the remaining nitrogen reductions* come from?

78% Agriculture
20% Urban
2% Septic Systems

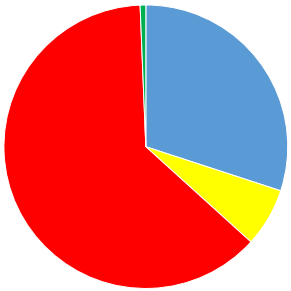
*Based on the jurisdictions' Phase II WIPs.

Pennsylvania Phosphorus Loads: 1985-2015





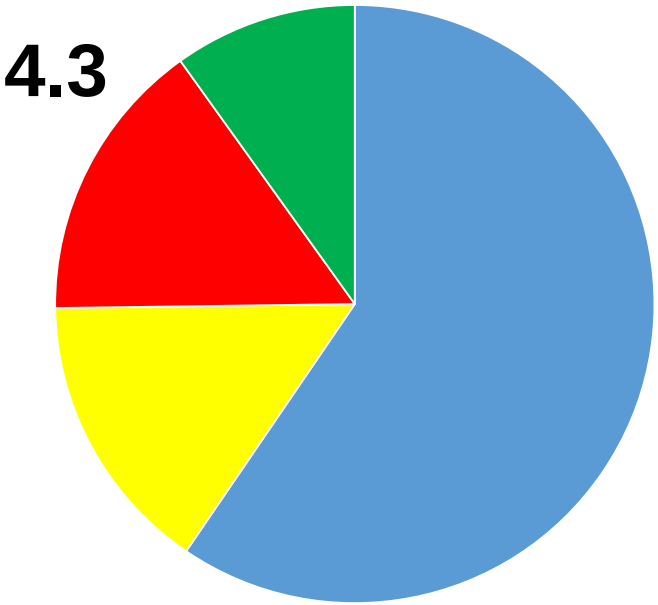
Where did the Phosphorus reductions come from?



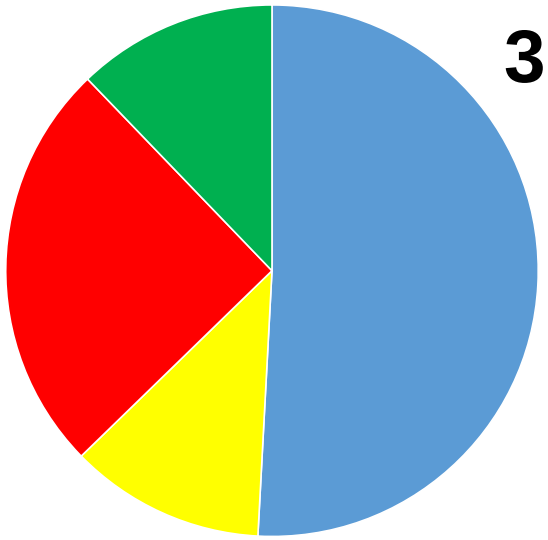
63% Wastewater
30% Agriculture
7% Urban
1% Forest

Pennsylvania Phosphorus Loads: 2015-2025

Agriculture Urban Runoff Wastewater+CSO Forest+

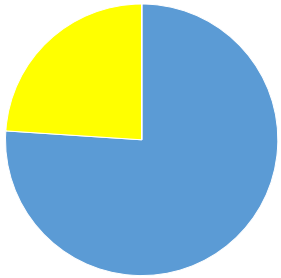


2015



2025

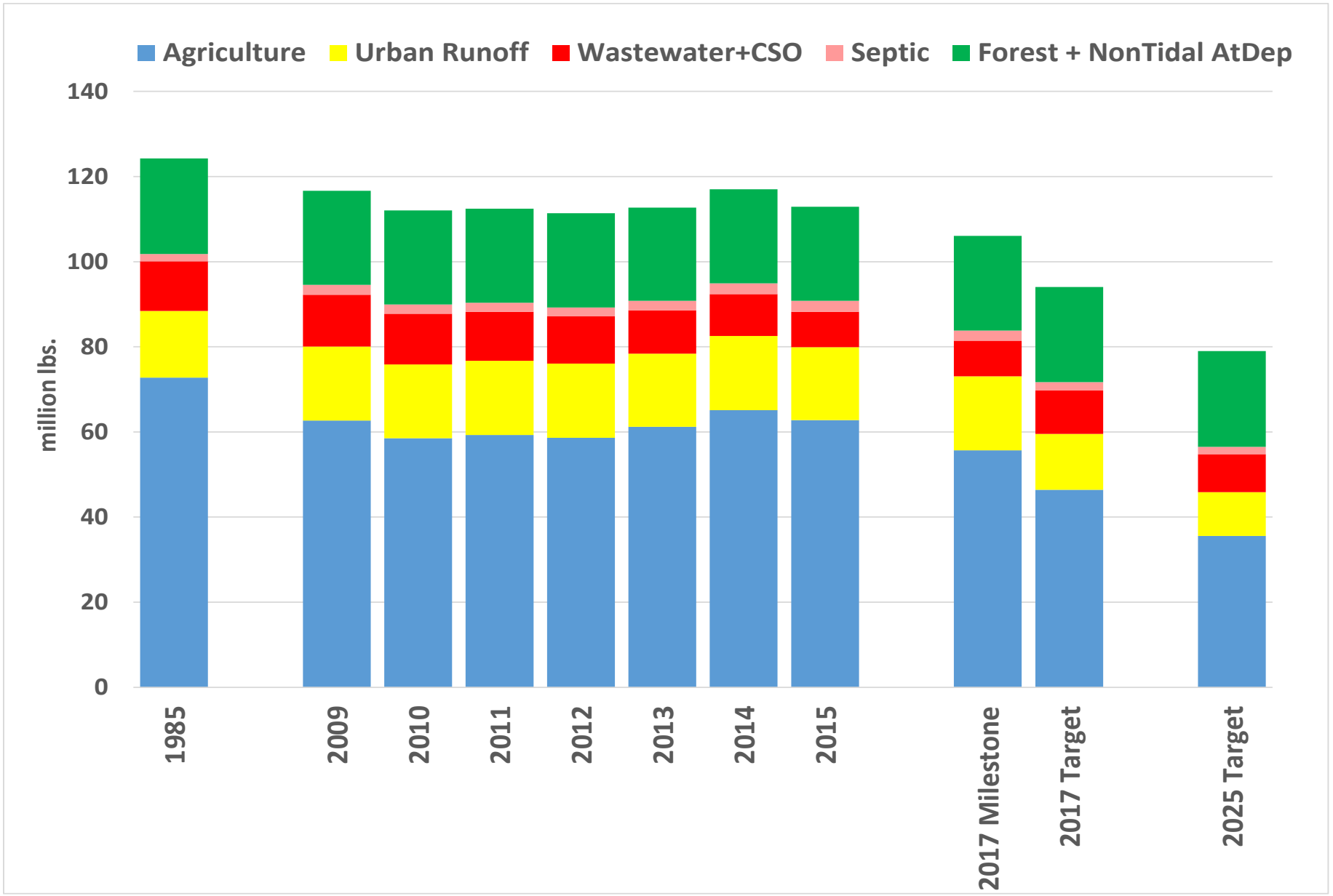
Where <u>will</u> the remaining phosphorus reductions* come from?



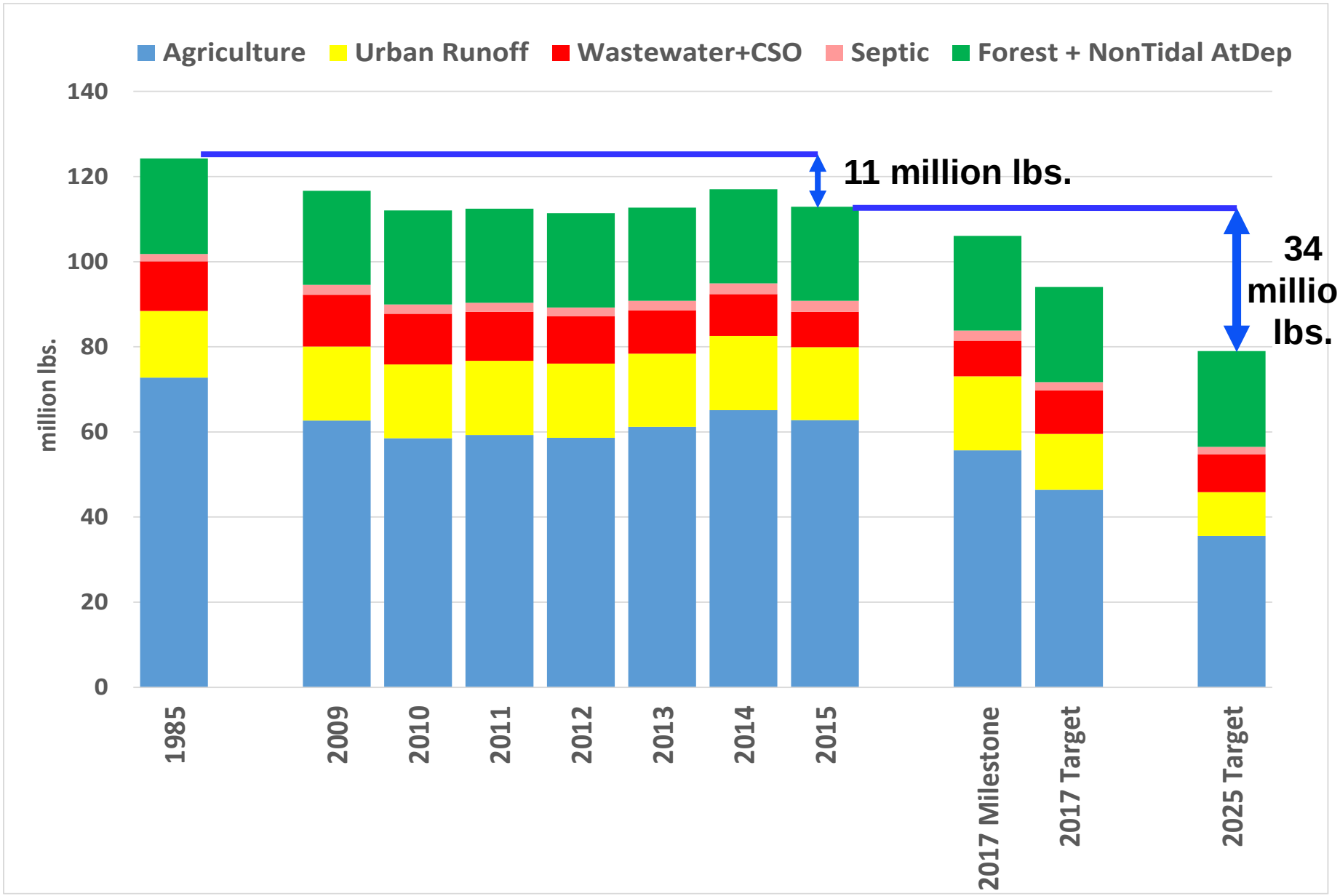
76% Agriculture
24% Urban

*Based on the jurisdictions' Phase II WIPs.

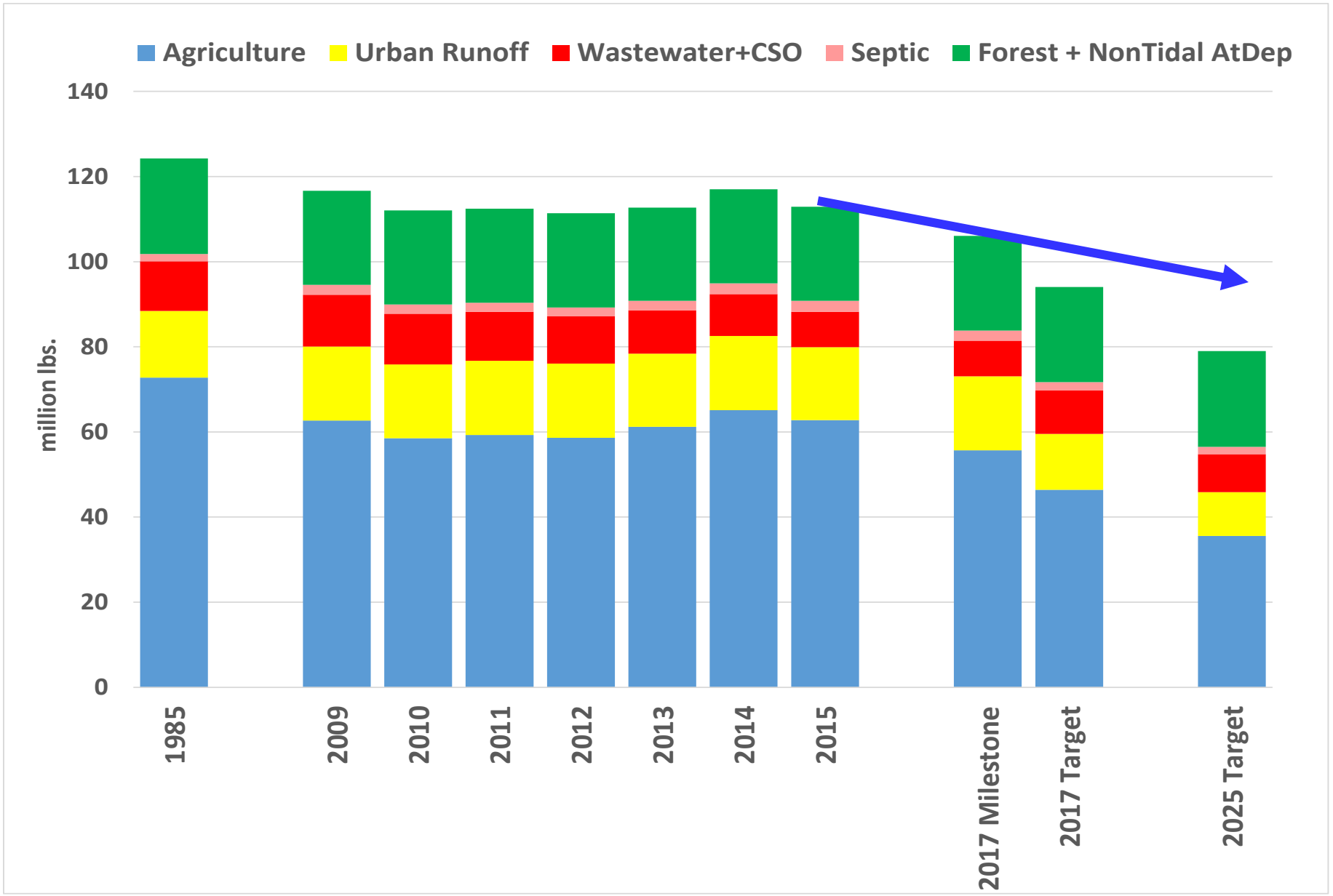
Pennsylvania Nitrogen Loads and Goals: 1985-2025



Pennsylvania Nitrogen Loads and Goals: 1985-2025



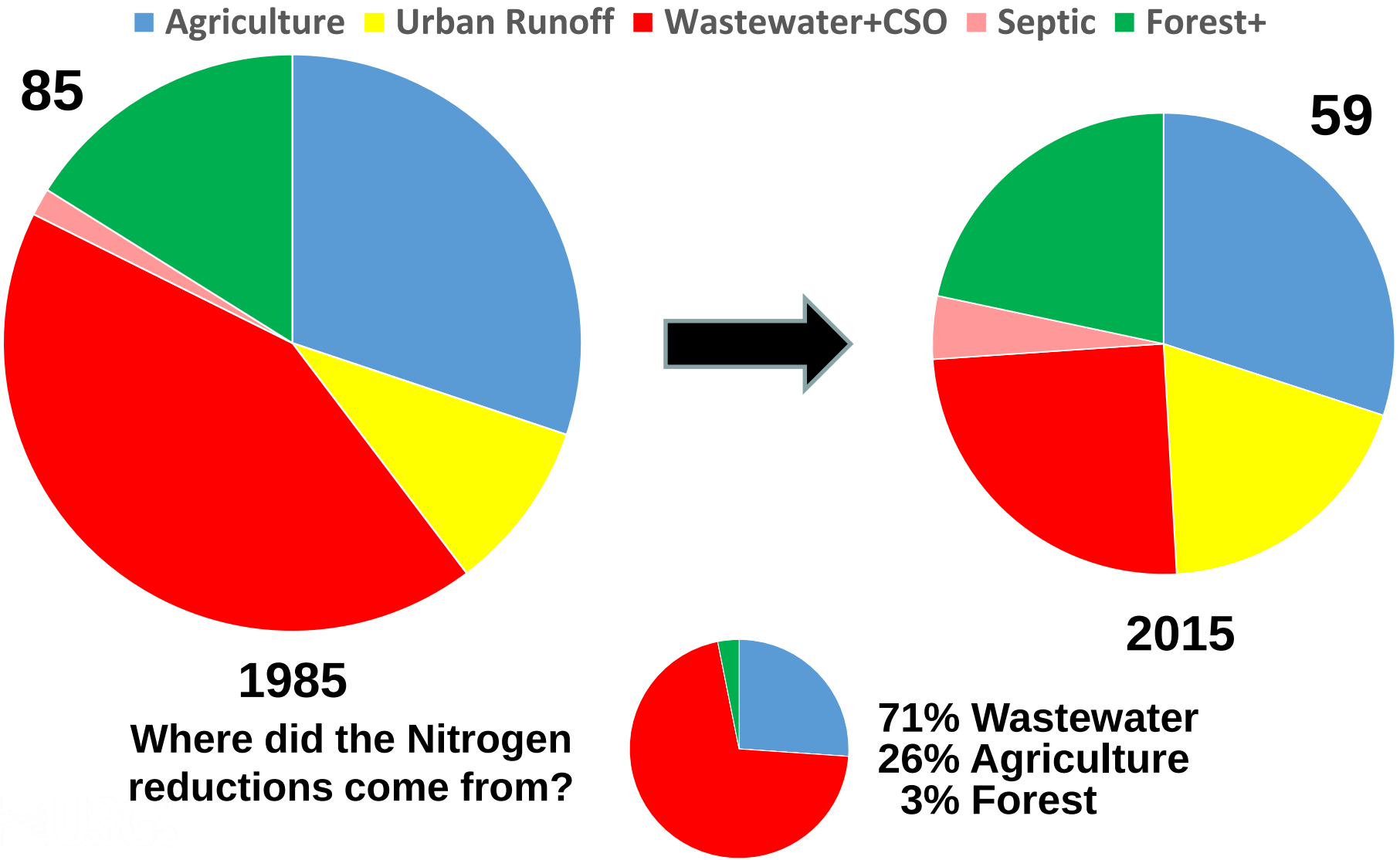
Pennsylvania Nitrogen Loads and Goals: 1985-2025



Pennsylvania's Source Sector Challenges

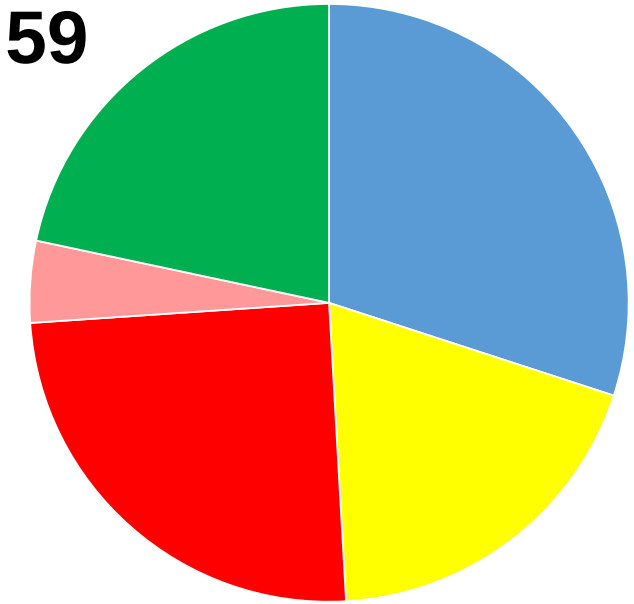
- Needs to reduce 19 million lbs. nitrogen by 2017 and a total of 34 million lbs. by 2025
- Responsible for 69 percent of remaining basinwide nitrogen load reductions by 2025
- Agriculture will likely be responsible for much more than 80 percent of these nitrogen reductions by 2025
- The technical assistance/compliance infrastructure, cost share funding are not in place to deliver on these needed reductions

Virginia Nitrogen Loads: 1985-2015

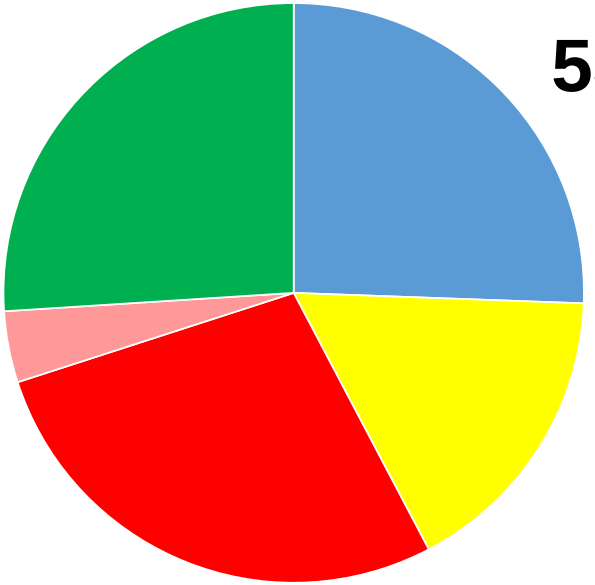


Virginia Nitrogen Loads: 2015-2025

Agriculture | Urban Runoff | Wastewater+CSO | Septic | Forest+

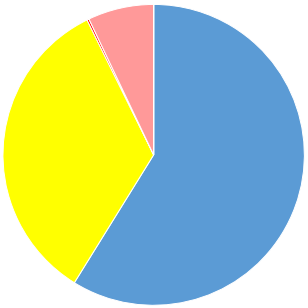


2015



2025

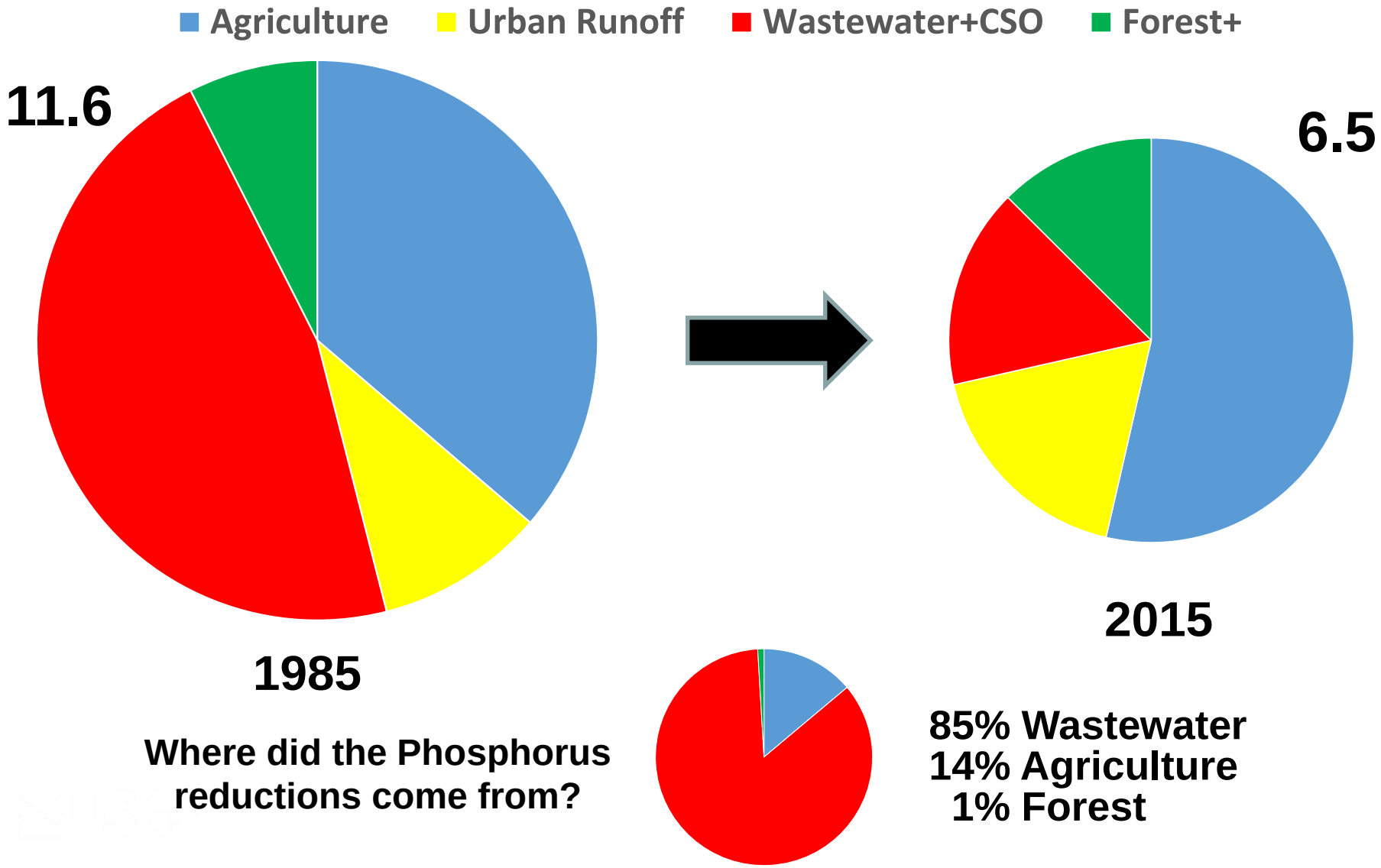
Where <u>will</u> the remaining nitrogen reductions* come from?



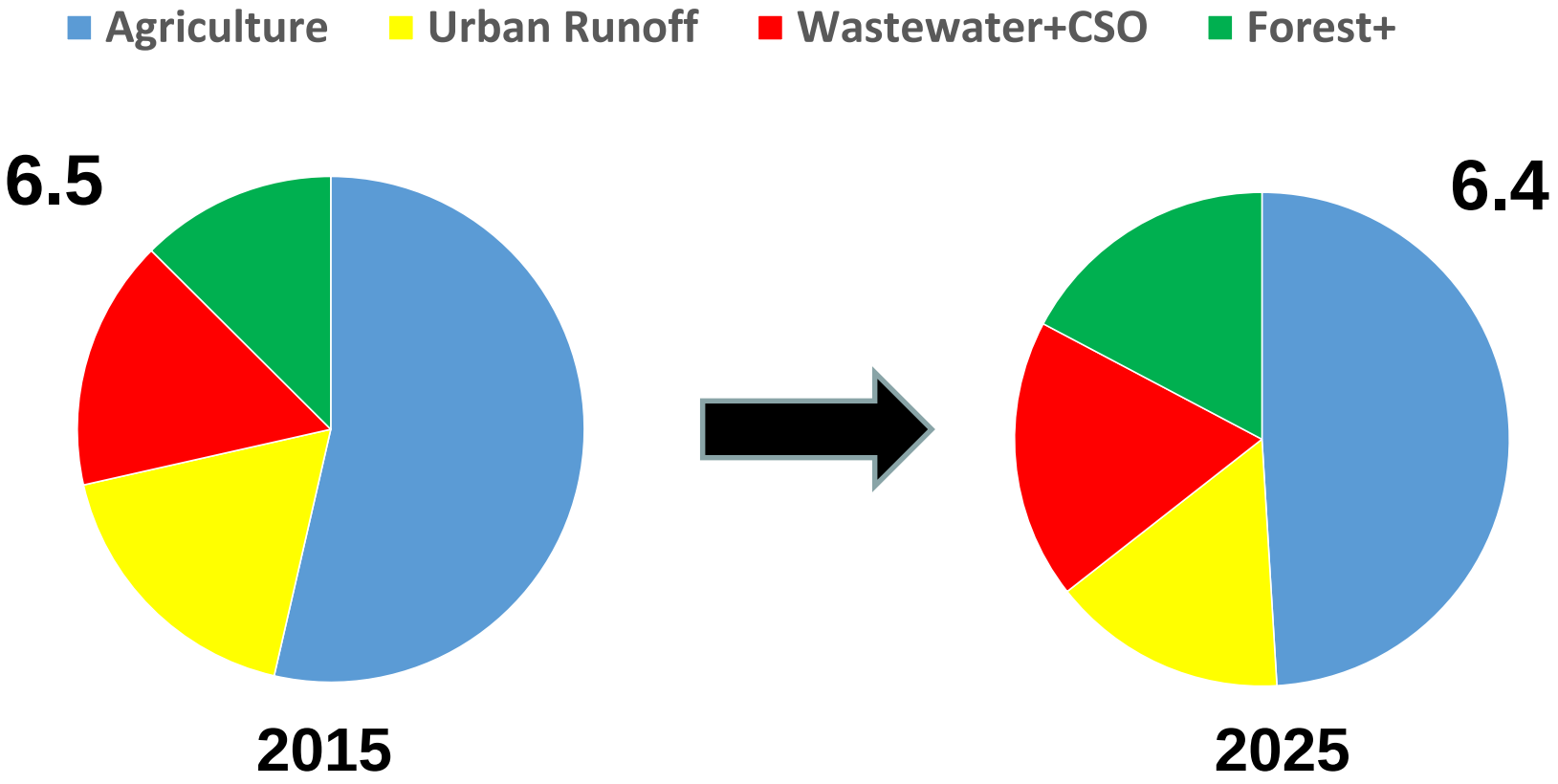
59% Agriculture
34% Urban
7% Septic

*Based on the jurisdictions' Phase II WIPs.

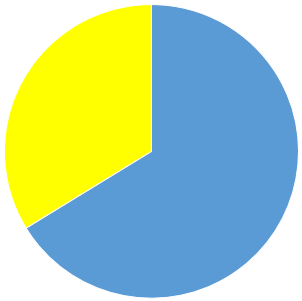
Virginia Phosphorus Loads: 1985-2015



Virginia Phosphorus Loads



Where <u>will</u> the remaining phosphorus reductions* come from?



66% Agriculture
34% Urban

*Based on the jurisdictions' Phase II WIPs.

Virginia's Source Sector Challenges

- Have already achieved their 2025 wastewater goals
- Recognizing they will achieve needed urban stormwater reductions, but not by 2025
- Relying on significant over-reductions in wastewater sector to achieve state-wide goals by 2025, covering for other sources
- Decisions pending on outcome of James River chlorophyll *a* criteria re-evaluation
- Where the reductions take place in Virginia matters to the quality of local tidal waters

Summary of Sector Challenges

- River input loads flattening out, increasing in the past decade
- Wastewater, atmospheric dep close to tapped out
- States considering tapping into wastewater facilities' future growth capacity to cover shortfall in other sectors
- Urban stormwater reduction goals being scaled back and/or to be achieved sometime post 2025
- Agriculture being asked for most of the remaining reductions
- Pennsylvania agriculture on the hook for a significant portion of ALL the remaining nitrogen reductions
- Phosphorus saturated soils and nitrogen groundwater lags hinder timely water quality responses