



# **Adjustments to the Bay's Assimilative Capacity & Determination of Additional Nitrogen and Phosphorus Loads**



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**Chesapeake Bay Program Principals' Staff Committee**  
**March 2, 2018**

# Today's Requested Policy Decisions

- 1) Approve West Virginia's request to reduce their Phase III WIP Planning Target from the PSC-approved 2 million pounds of nitrogen to 1.5 million.
- 2) Approve West Virginia's contingency language.
- 3) Approve the approach to fully account for the additional pounds already provided to New York's and West Virginia's Phase III WIP Planning Targets.
- 4) Approve defining the Chesapeake Bay's assimilative capacity as 196.5 million pounds of nitrogen and 13.75 million pounds of phosphorus.

# Updating Our Assessment of WV Loads

- West Virginia received additional pounds under the Bay TMDL due to a lack of direct benefits from Bay water quality and principles of equity.
- The 2 million pounds of nitrogen the PSC approved for West Virginia would have resulted in the state achieving its nitrogen goal in 2013.
- West Virginia and the Chesapeake Bay Program Office worked together to determine whether the Phase 6 Model's estimate of West Virginia's delivered nutrient loads (according to the state's Phase II WIP) would allow for a lower Phase III WIP planning target and reduce the burden on other jurisdictions.

# Updating Our Assessment of WV Loads

- **Results:** West Virginia will agree to a 1.5 million pound increase in its nitrogen Phase III WIP Planning Target.

- West Virginia asks the PSC to agree to the following contingency language:

“In the event that model revisions occur that increase the loads resulting from West Virginia’s Phase II level of effort (ex. revised BMP efficiencies), or new directives are initiated to increase Partnership level of effort (ex. climate change, Conowingo) the remaining 500,000 pounds of nitrogen provided to West Virginia for equity would be made available for accommodation. West Virginia asks for the Partnership’s commitment to return the unused equity allocation to West Virginia, if necessary.”

# Confirming Additional Loads for New York

- New York received additional pounds under the Bay TMDL due to a lack of growth and principles of equity.
- Chesapeake Bay Program Office staff re-ran the PSC allocation methodology using a 1985 base year in place of the agreed-upon 2010 base year.
- **Results:** Using the Phase 6 Model and up-to-date local data, the Chesapeake Bay Program Office confirmed New York was receiving the appropriate level of additional loads under the Bay TMDL.

# Sources of Additional Loads

- **The Bay's assimilative capacity**
  - Are additional pounds of nitrogen and phosphorus available and still keep the 6% restoration variance in Maryland's segment CB4?
- **Clean Air Act** regulations
  - Will regulations implemented between 2025 and 2030 reduce nitrogen deposition to tidal waters and the watershed?
  - Can we account for these reductions beyond 2025?



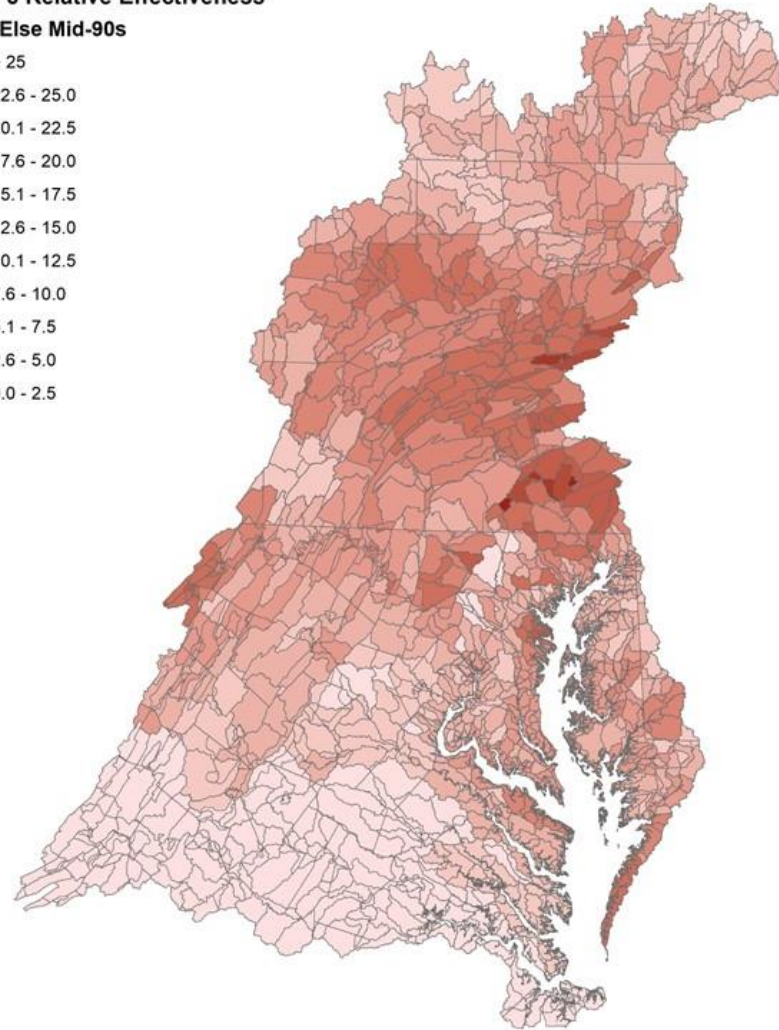
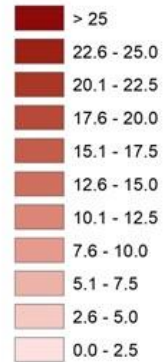
# Reassessing the Bay's Assimilative Capacity



# Location Matters

Phase 6 Relative Effectiveness

TN All Else Mid-90s

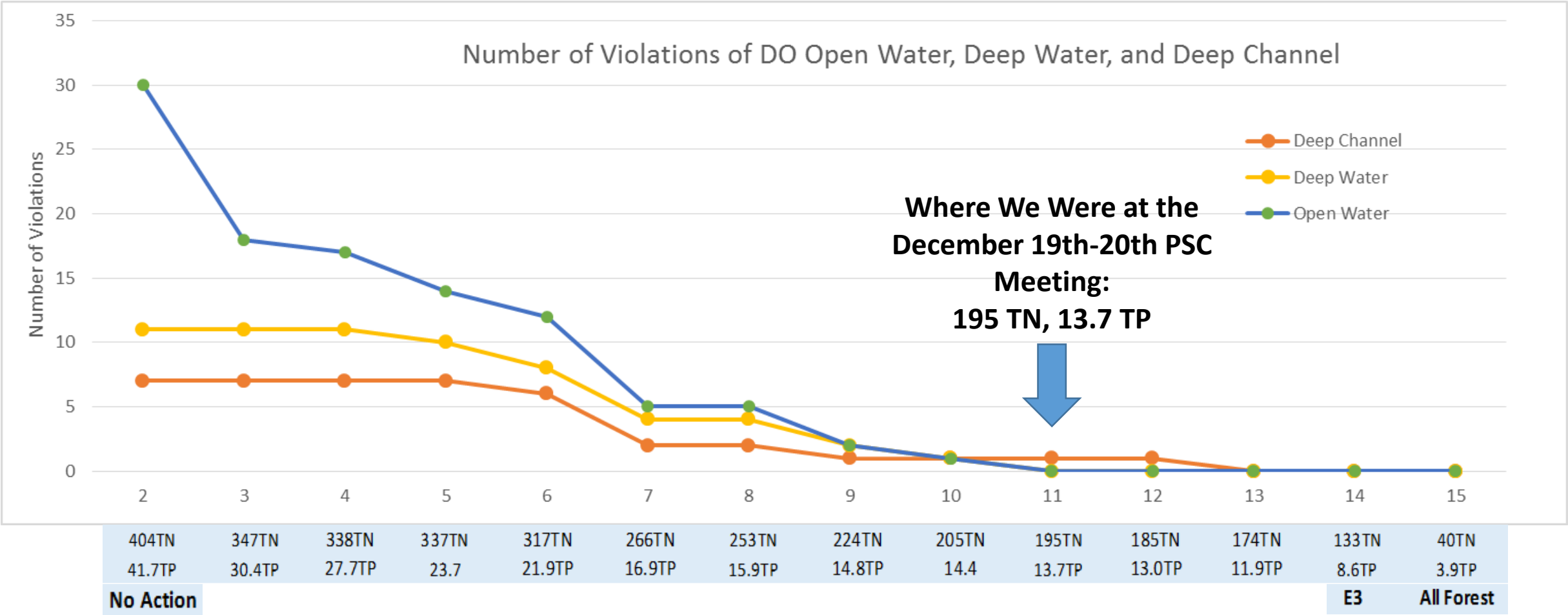


## Relative Effectiveness of Nitrogen Reductions

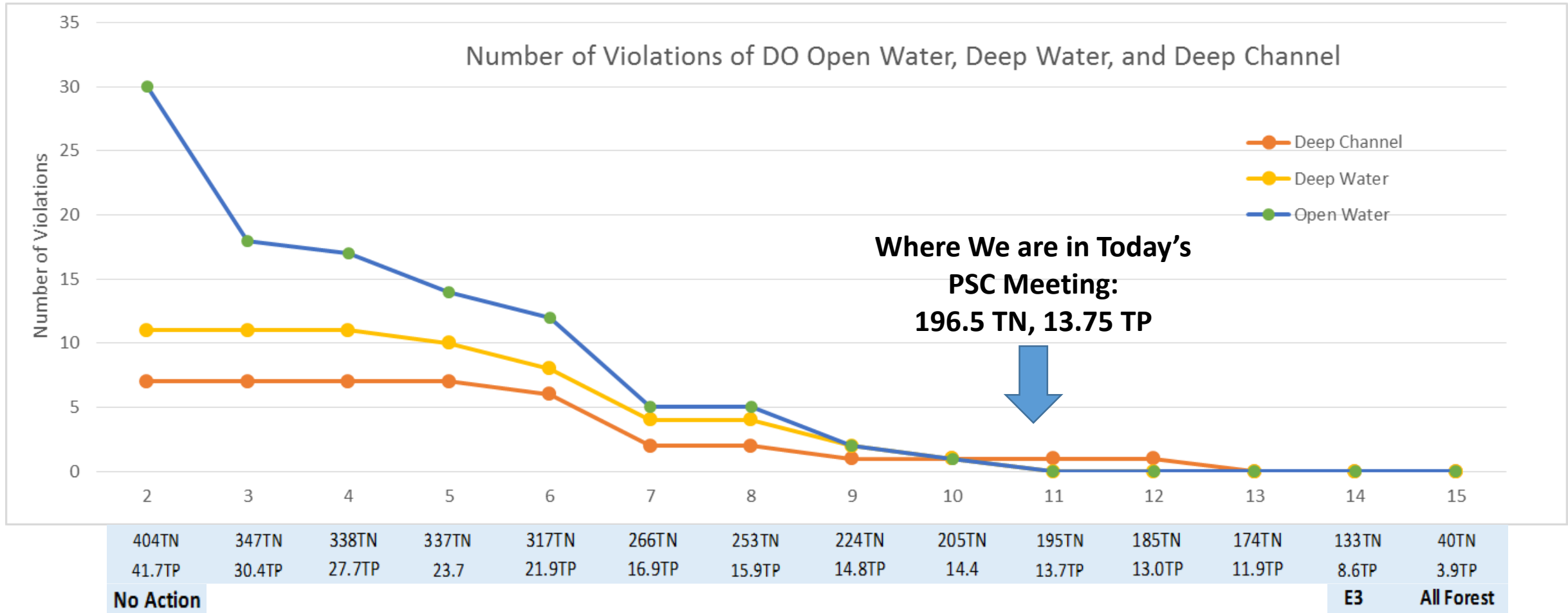
- Susquehanna: 1 pound
- Potomac: 1 ½ pounds
- Rappahannock: 2 pounds
- James: 7 pounds



# Reassessing the Bay's Assimilative Capacity



# Reassessing the Bay's Assimilative Capacity



# Sources of Additional Loads: The Bay's Assimilative Capacity

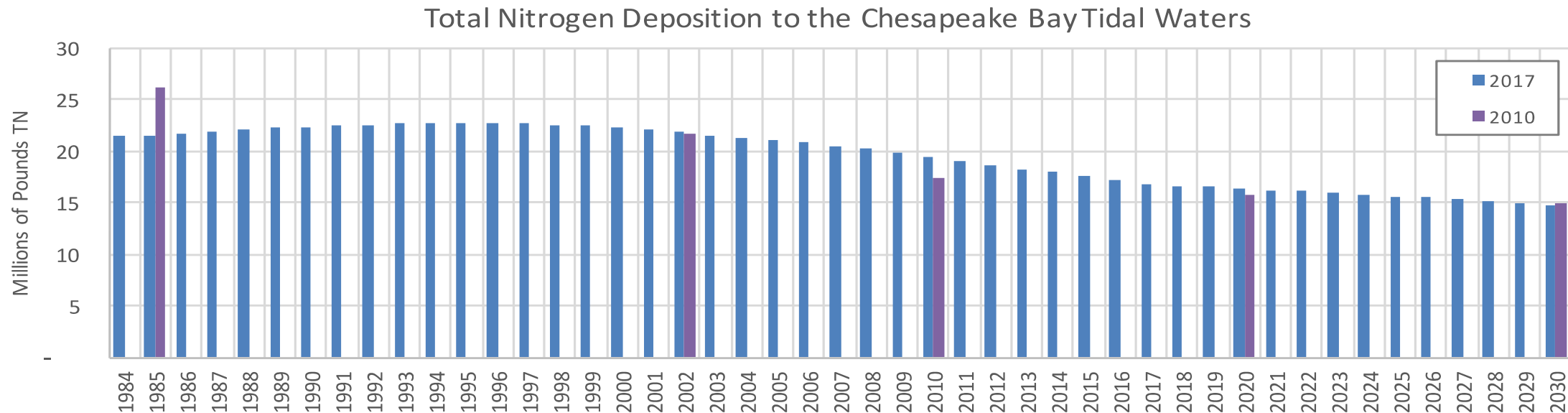
| Source of Additional Loads           | New York                            | West Virginia         | Reserve |
|--------------------------------------|-------------------------------------|-----------------------|---------|
| Bay Assimilative Capacity Evaluation | 500,000 pounds N<br>50,000 pounds P | 1 million<br>pounds N | 0       |

# Clean Air Act Regulations



# Accounting for the Deposition of Nitrogen to Tidal Waters Between 2025 and 2030

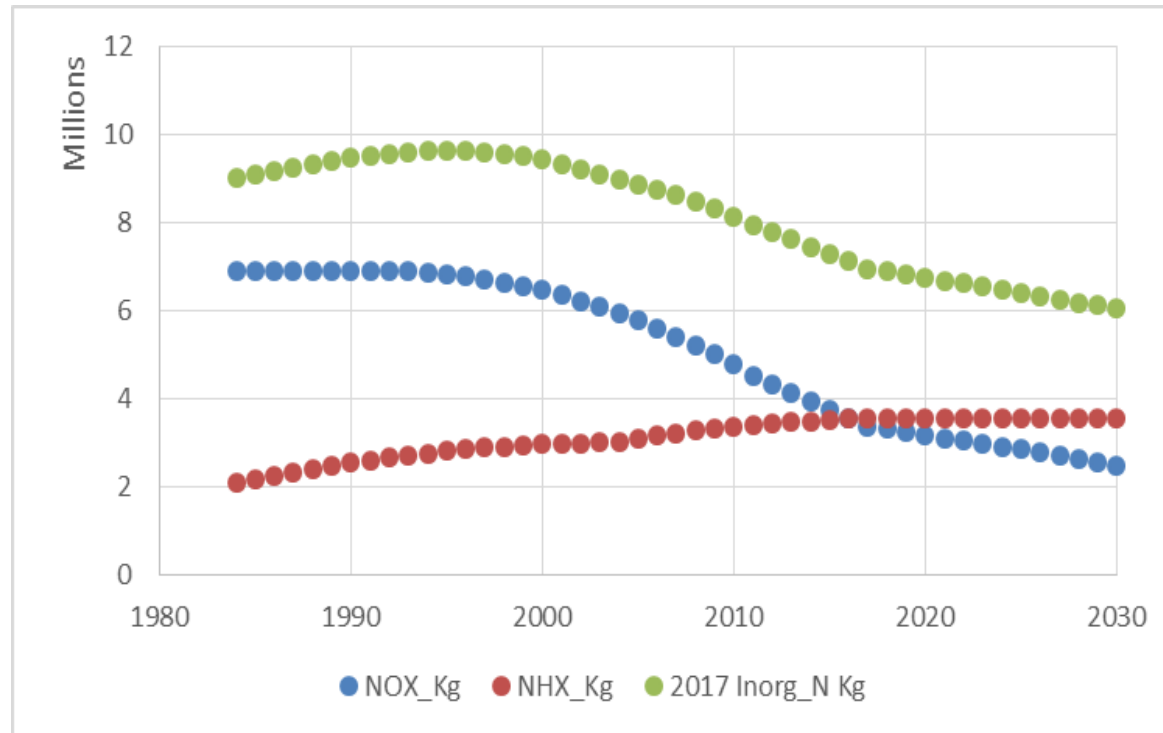
- From 1985 through 2025, loads will fall from 21.5 to 15.6 million pounds.
- By 2025, loads will be 100,000 pounds below the Bay TMDL allocation.
- By 2030, loads will drop to 14.9 millions pounds: 800,000 pounds below the Bay TMDL allocation.





# Accounting for the Deposition of Nitrogen to Tidal Waters Between 2025 and 2030

- These post-2025 estimates are based on existing regulations and programs in place by 2025 and fully account for growth in different sources of emissions over time (including agricultural animal production).



# Accounting for the Deposition of Nitrogen to Tidal Waters Between 2025 and 2030

- Two exceptions must be noted in—but should not influence—our 2030 nitrogen reduction estimates.
  - These estimates do include emission reductions that would have resulted from the Clean Power Rule.
  - These estimates do not include emission reductions that will be necessary to meet the 2015 National Ambient Air Quality Standards (which will likely be higher than those that would have resulted from the Clean Power Rule).

# Sources of Additional Loads: Atmospheric Deposition to Tidal Waters

| Source of Additional Loads           | New York                            | West Virginia         | Reserve |
|--------------------------------------|-------------------------------------|-----------------------|---------|
| Bay Assimilative Capacity Evaluation | 500,000 pounds N<br>50,000 pounds P | 1 million<br>pounds N | 0       |

# Sources of Additional Loads: Atmospheric Deposition to Tidal Waters

| Source of Additional Loads           | New York                            | West Virginia         | Reserve |
|--------------------------------------|-------------------------------------|-----------------------|---------|
| Bay Assimilative Capacity Evaluation | 500,000 pounds N<br>50,000 pounds P | 1 million<br>pounds N | 0       |
| Atmos. Dep. to Tidal Waters by 2030  | 500,000 pounds N<br>50,000 pounds P | 180,000<br>pounds N   | 0       |

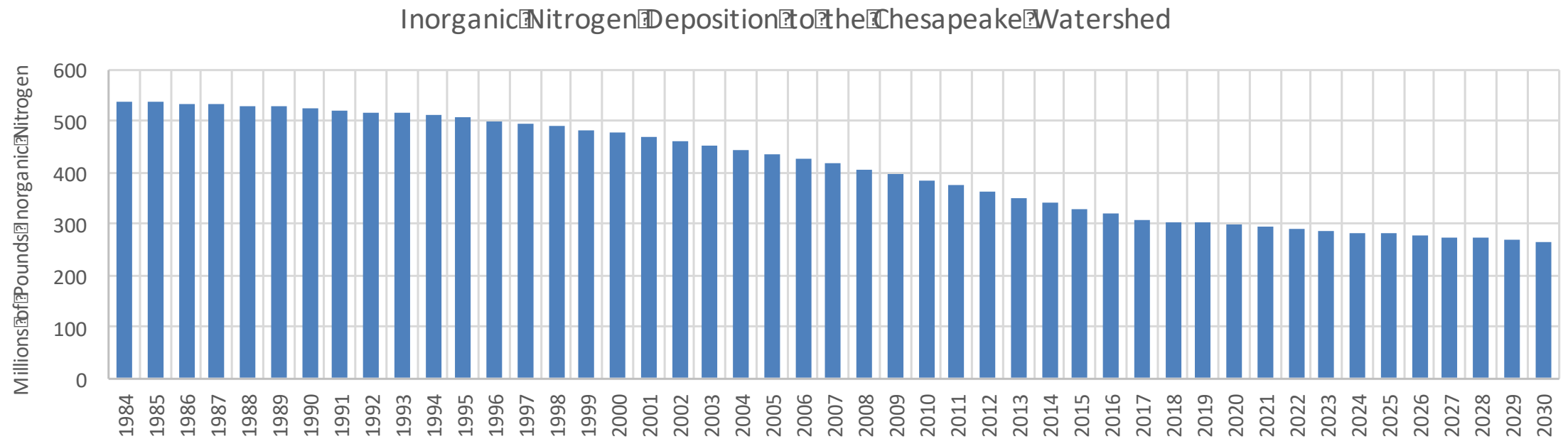
# Sources of Additional Loads: Atmospheric Deposition to Tidal Waters

| Source of Additional Loads           | New York                                       | West Virginia                    | Reserve  |
|--------------------------------------|--|----------------------------------|----------|
| Bay Assimilative Capacity Evaluation | 500,000 pounds N<br>50,000 pounds P            | 1 million<br>pounds N            | 0        |
|                                      | +  | +                                | +        |
| Atmos. Dep. to Tidal Waters by 2030  | 500,000 pounds N<br>50,000 pounds P            | 180,000<br>pounds N              | 0        |
| <b>Total</b>                         | <b>1 million pounds N<br/>100,000 pounds P</b> | <b>1.18 million<br/>pounds N</b> | <b>0</b> |



# Accounting for the Deposition of Nitrogen to the Watershed Between 2025 and 2030

- From 1985 through 2025, 254 million fewer pounds of nitrogen will fall on the watershed.



# Accounting for the Deposition of Nitrogen to the Watershed Between 2025 and 2030

This table outlines the nitrogen load reductions that will take place in each jurisdiction's portion of the watershed.

| State        | Pounds N       |
|--------------|----------------|
| DC           | 0              |
| DE           | 20,000         |
| MD           | 210,000        |
| NY           | 40,000         |
| PA           | 280,000        |
| VA           | 220,000        |
| WV           | 30,000         |
| <b>Total</b> | <b>800,000</b> |

# Sources of Additional Loads: Atmospheric Deposition to Watershed

| Source of Additional Loads  | New York                               | West Virginia            | Reserve |
|---|--|--------------------------|---------|
| Bay Assimilative Capacity Evaluation and<br>Atmos. Dep. to Tidal Waters by 2030 | 1 million pounds N<br>100,000 pounds P | 1.18 million<br>pounds N | 0       |

# Sources of Additional Loads: Atmospheric Deposition to Watershed

| Source of Additional Loads  | New York                               | West Virginia            | Reserve             |
|---|--|--------------------------|---------------------|
| Bay Assimilative Capacity Evaluation and<br>Atmos. Dep. to Tidal Waters by 2030 | 1 million pounds N<br>100,000 pounds P | 1.18 million<br>pounds N | 0                   |
| Atmos. Dep. to Watershed by 2030  | None                                   | 320,000<br>pounds N      | 390,000<br>pounds N |

# Sources of Additional Loads: Atmospheric Deposition to Watershed

| Source of Additional Loads  | New York                                       | West Virginia                   | Reserve                     |
|---|--|---------------------------------|-----------------------------|
| Bay Assimilative Capacity Evaluation and<br>Atmos. Dep. to Tidal Waters by 2030 | 1 million pounds N<br>100,000 pounds P         | 1.18 million<br>pounds N        | 0                           |
|   | +  | +                               | +                           |
| Atmos. Dep. to Watershed by 2030  | None   | 320,000<br>pounds N             | 390,000<br>pounds N         |
| <b>Total</b>  | <b>1 million pounds N<br/>100,000 pounds P</b> | <b>1.5 million<br/>pounds N</b> | <b>390,000<br/>pounds N</b> |



**Questions?**



# Today's Requested Policy Decisions

**First:** We need to approve West Virginia's request to reduce their Phase III WIP Planning Target from the PSC-approved 2 million pounds of nitrogen to 1.5 million.

# Today's Requested Policy Decisions

**Second:** We need to approve West Virginia's contingency language.

“In the event that model revisions occur that increase the loads resulting from West Virginia's Phase II level of effort (ex. revised BMP efficiencies), or new directives are initiated to increase Partnership level of effort (ex. climate change, Conowingo) the remaining 500,000 pounds of nitrogen provided to West Virginia for equity would be made available for accommodation. West Virginia asks for the Partnership's commitment to return the unused equity allocation to West Virginia, if necessary.”

# Today's Requested Policy Decisions

**Third:** We need to approve our approach to fully account for the additional pounds already provided to New York and West Virginia's Phase III WIP Planning Targets.

- Determine what to do with additional pounds.
  - a) Keep as a reserve pending final decisions on the Phase III WIP Planning Targets at the May PSC meeting; or
  - b) Return the remaining pounds to the jurisdictions for credit post-2025 for atmospheric deposition to watershed reductions.

# Today's Requested Policy Decisions

**Last:** We need to approve defining the Chesapeake Bay's assimilative capacity as 196.5 million pounds of nitrogen and 13.75 million pounds of phosphorus.

- These loadings will replace the 195 million pounds of nitrogen and the 13.7 million pounds of phosphorus agreed to at the December PSC meeting.



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