THE CHESAPEAKE BAY TMDL: Restoring Local Waters and the Chesapeake Bay

American Academy of Environmental Engineers
January 29, 2010
Washington, DC

Rich Batiuk
Associate Director for Science
U.S. EPA Chesapeake Bay Program Office

THE CHESAPEAKE BAY TMDL: Restoring Local Waters and the Chesapeake Bay

(Ok, it's a new day on the Bay—let's see what's happening now after 25 years!)

American Academy of Environmental Engineers
January 29, 2010
Washington, DC

Rich Batiuk
Associate Director for Science
U.S. EPA Chesapeake Bay Program Office

Chesapeake Bay Watershed-
By the Numbers

- Largest U.S. estuary
- Six-states and DC, 64,000 square mile watershed
- 10,000 miles of shoreline (longer then entire U.S. west coast)
- Over 3,600 species of plants, fish and other animals
- Average depth: 21 feet
- $750 million contribution annually to local economies
- Home to 17 million people (and counting)
- 77,000 principally family farms
- Declared “national treasure” by President Obama

Source: www.chesapeakebay.net

Unprecedented Opportunities

Bay TMDL

President's Chesapeake Bay Executive Order

Bay Restoration Program Reauthorization

Unprecedented Prompts

Regulatory Pollution Diet

Watershed Implementation Plans at Local Scales

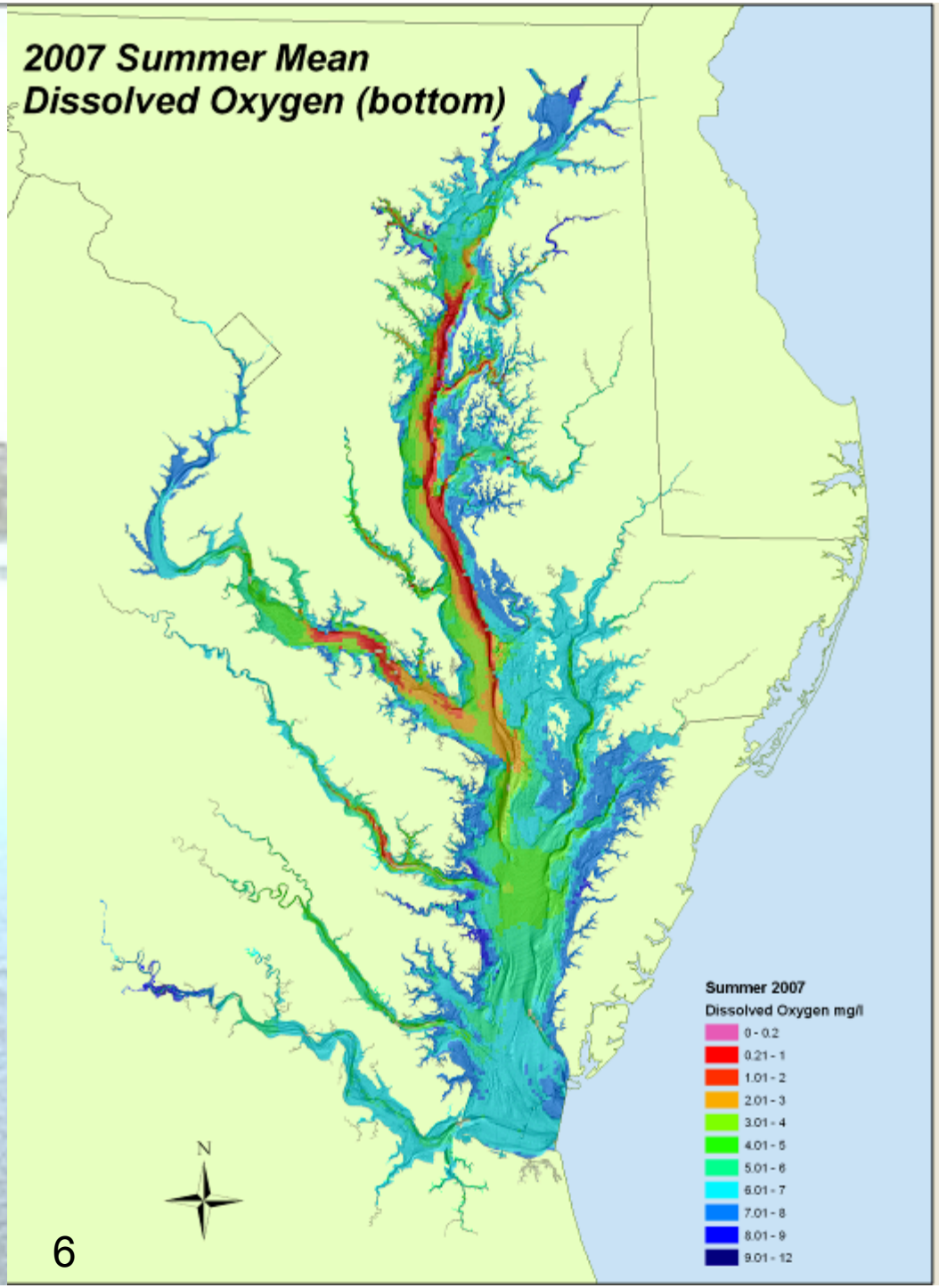
Comprehensive Accountability Framework

Two-year Milestones

Federal Consequences

National/Chesapeake Bay Rulemaking

Low to no dissolved oxygen in the Bay and tidal rivers every summer



Summary: 2008 Bay Health Assessment

Priority Areas

Water Quality

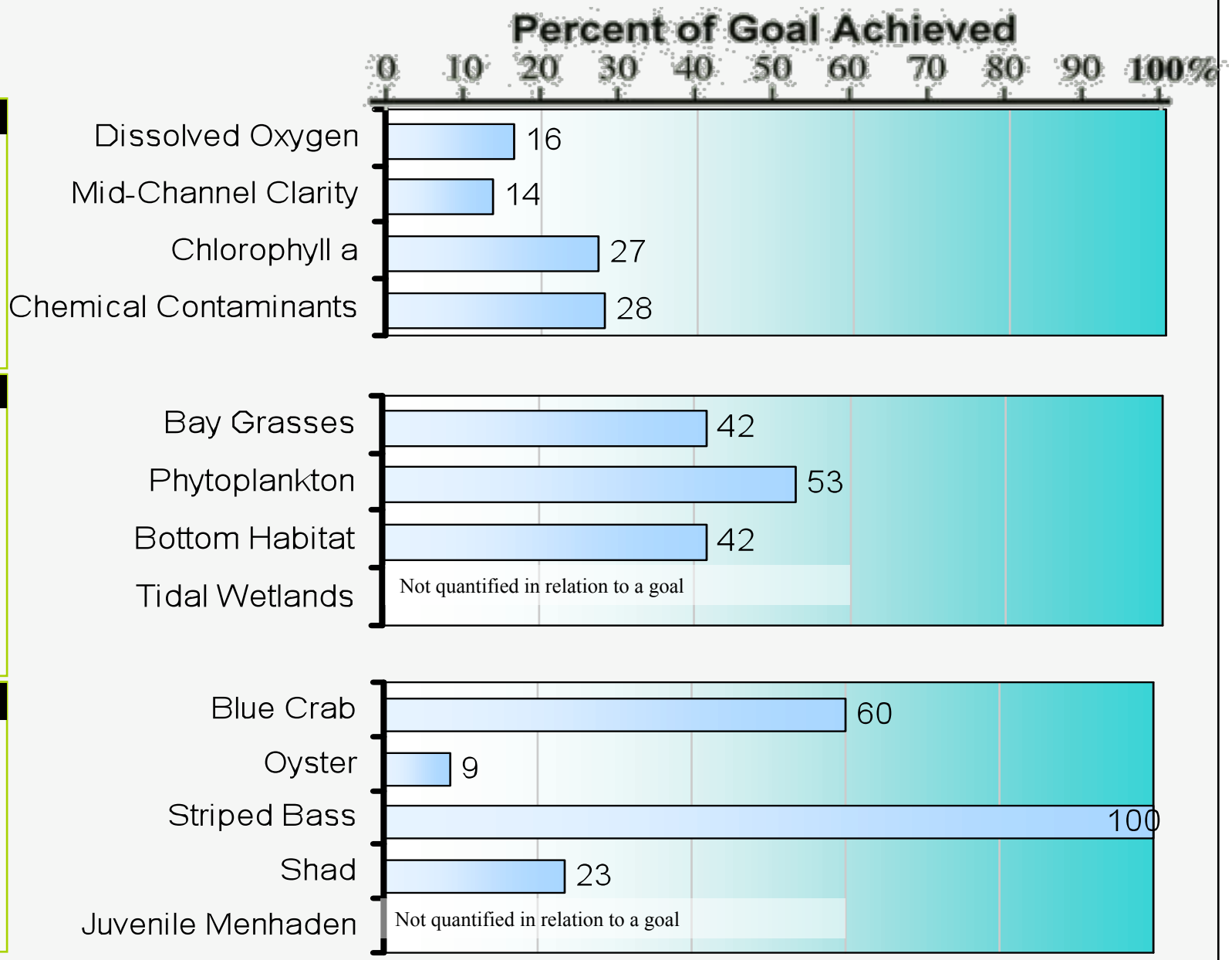
21% of Goals Achieved

Habitats & Lower Food Web

45% of Goals Achieved

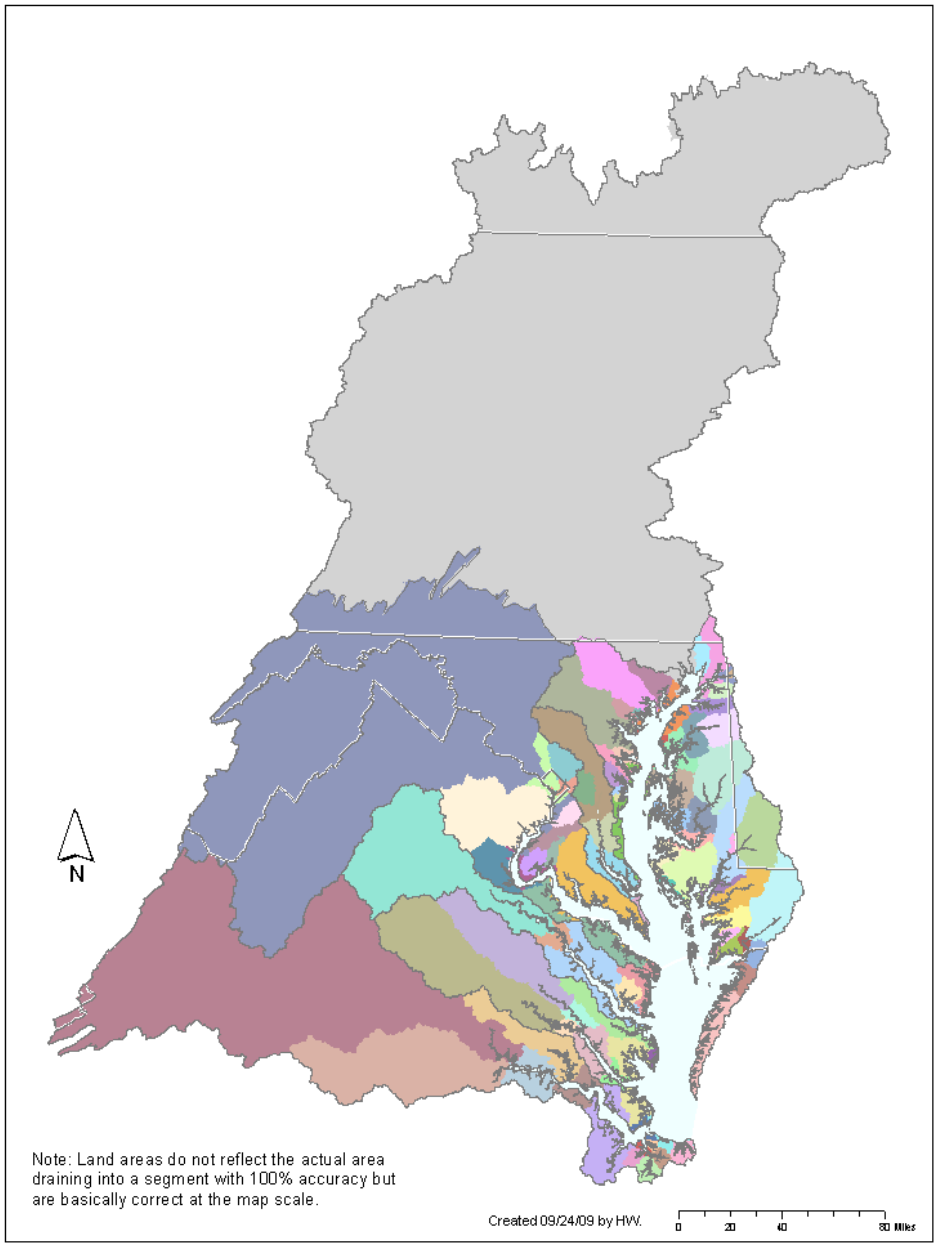
Fish & Shellfish

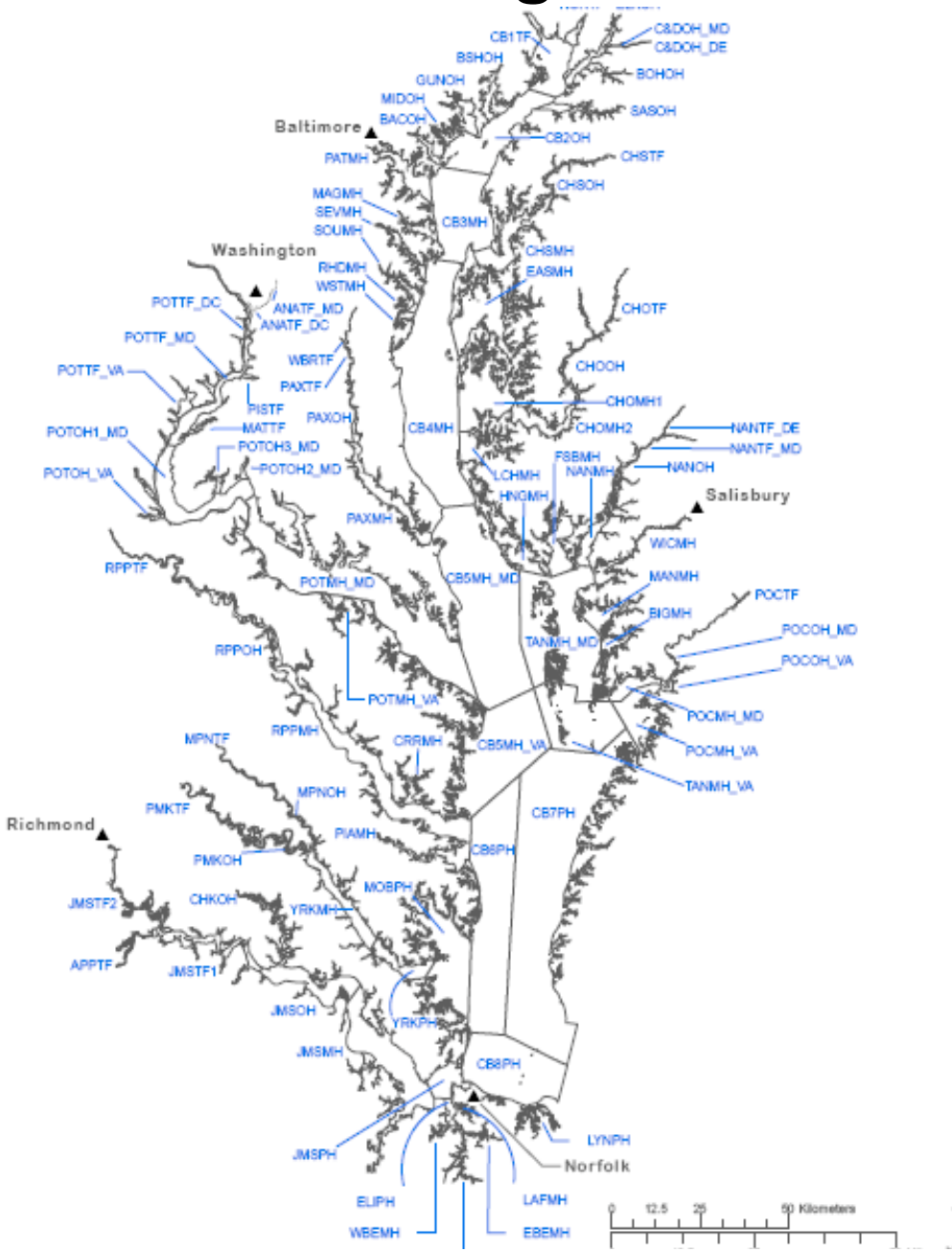
48% of Goals Achieved



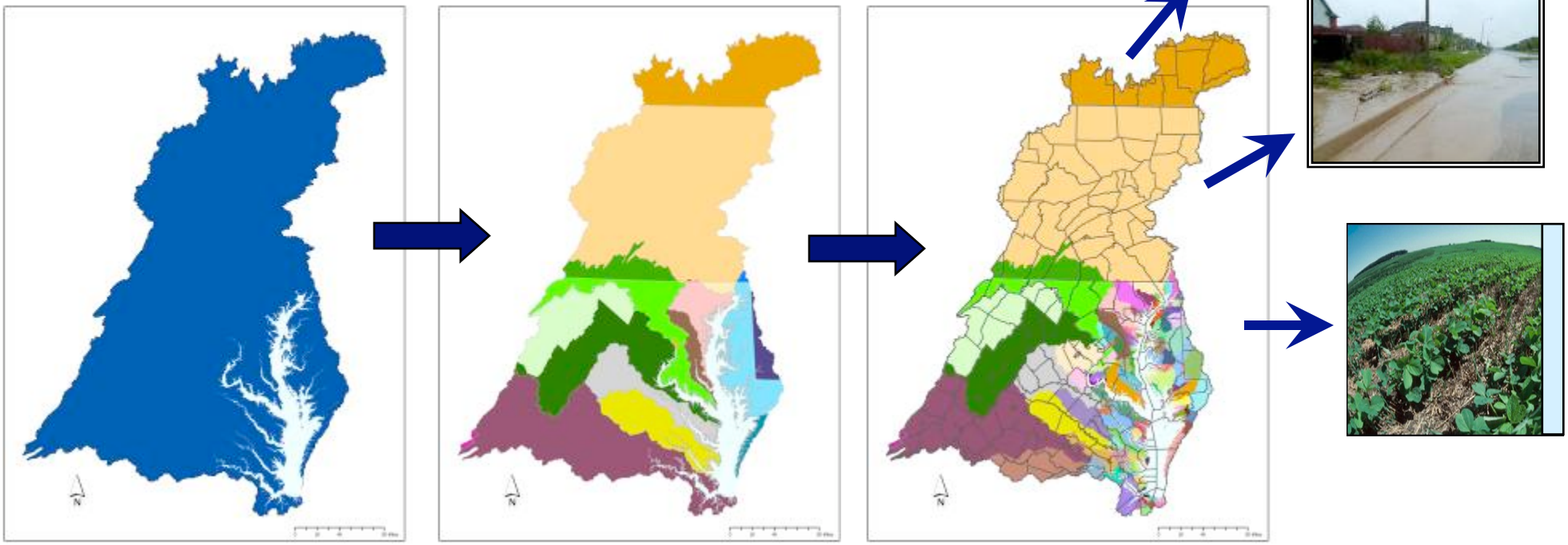
Data and Methods: www.chesapeakebay.net/status_bayhealth.aspx

Pollution Diet for Each Tidal Water Segment





Taking Responsibility for Load Reductions



Identify basinwide target loads

EPA, States, DC

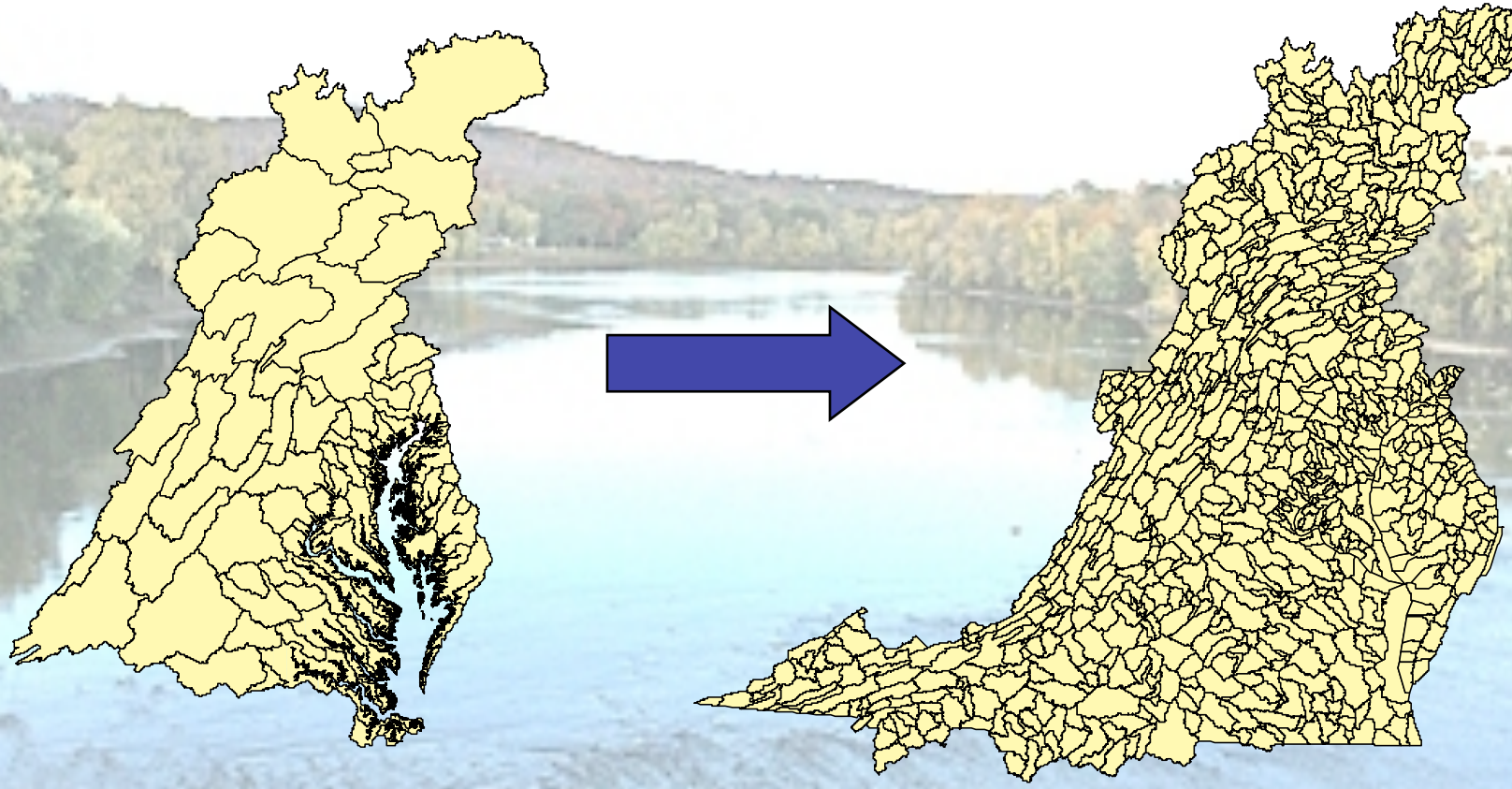
Identify major basin by jurisdiction target loads

EPA, States, DC

Identify tidal segment watershed, county and source sector target loads

States, DC, local governments & local partners

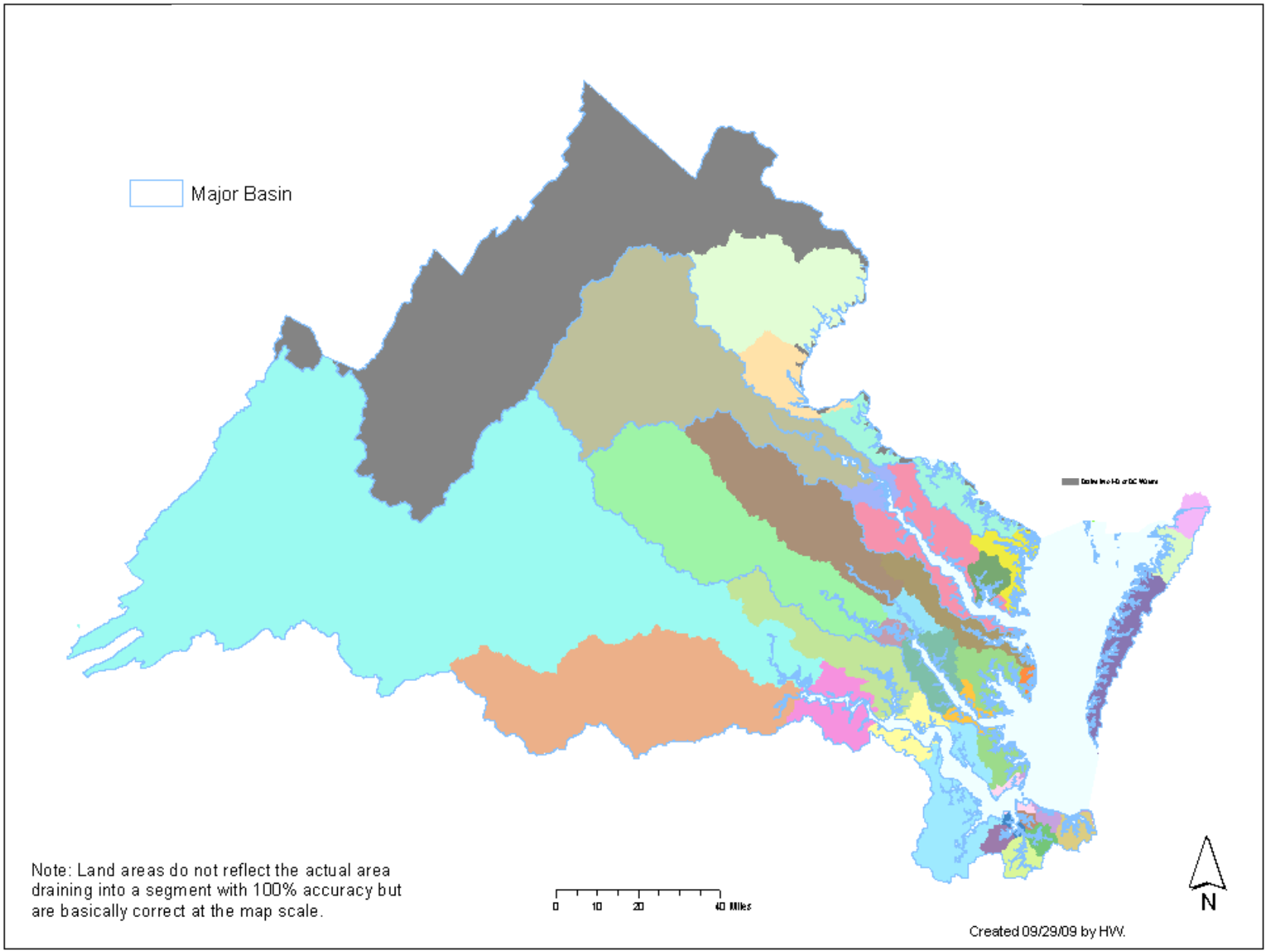
The Bay science supports local pollution diets…



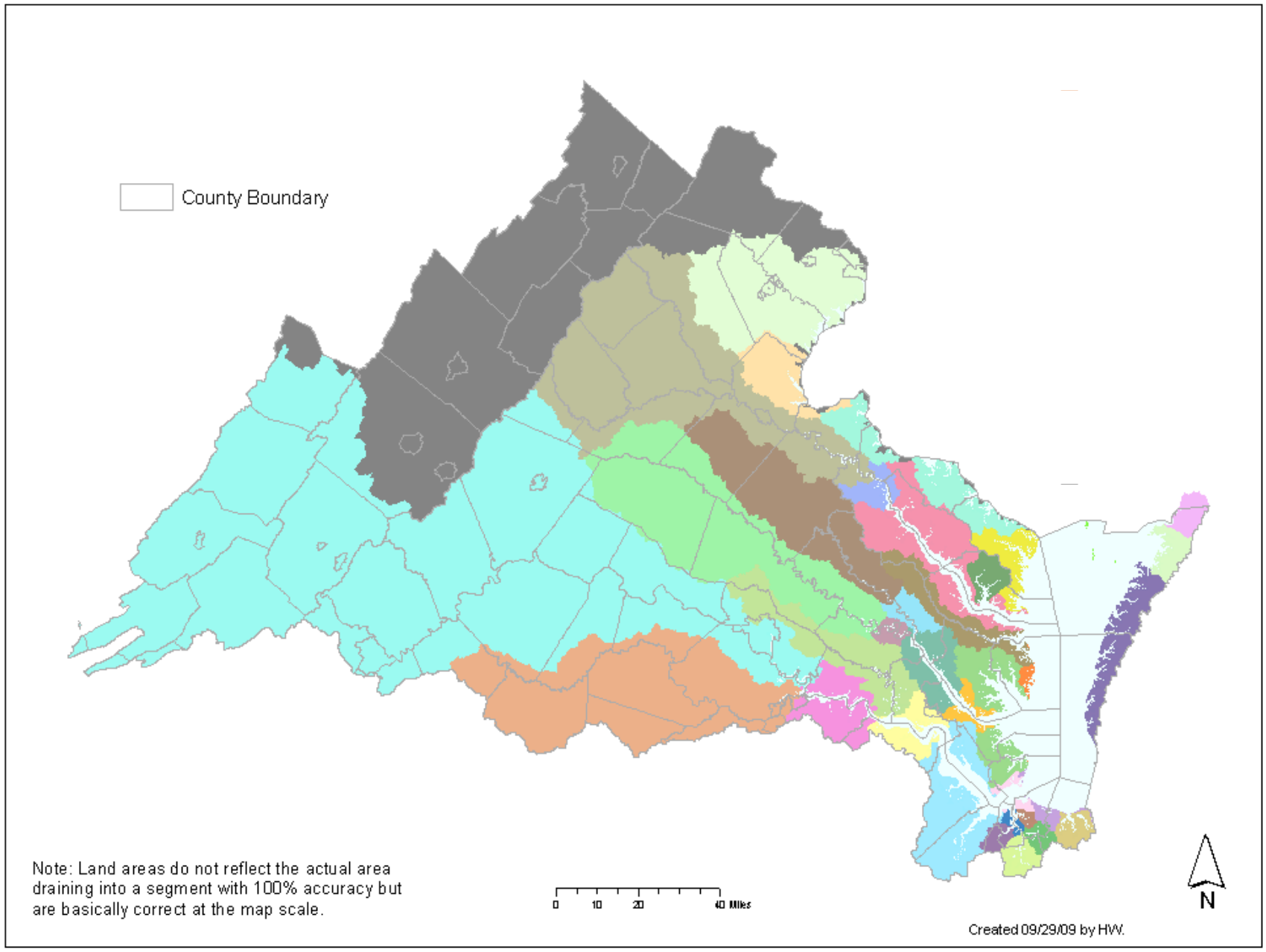
Phase 4 Bay Watershed Model (2000-2008)

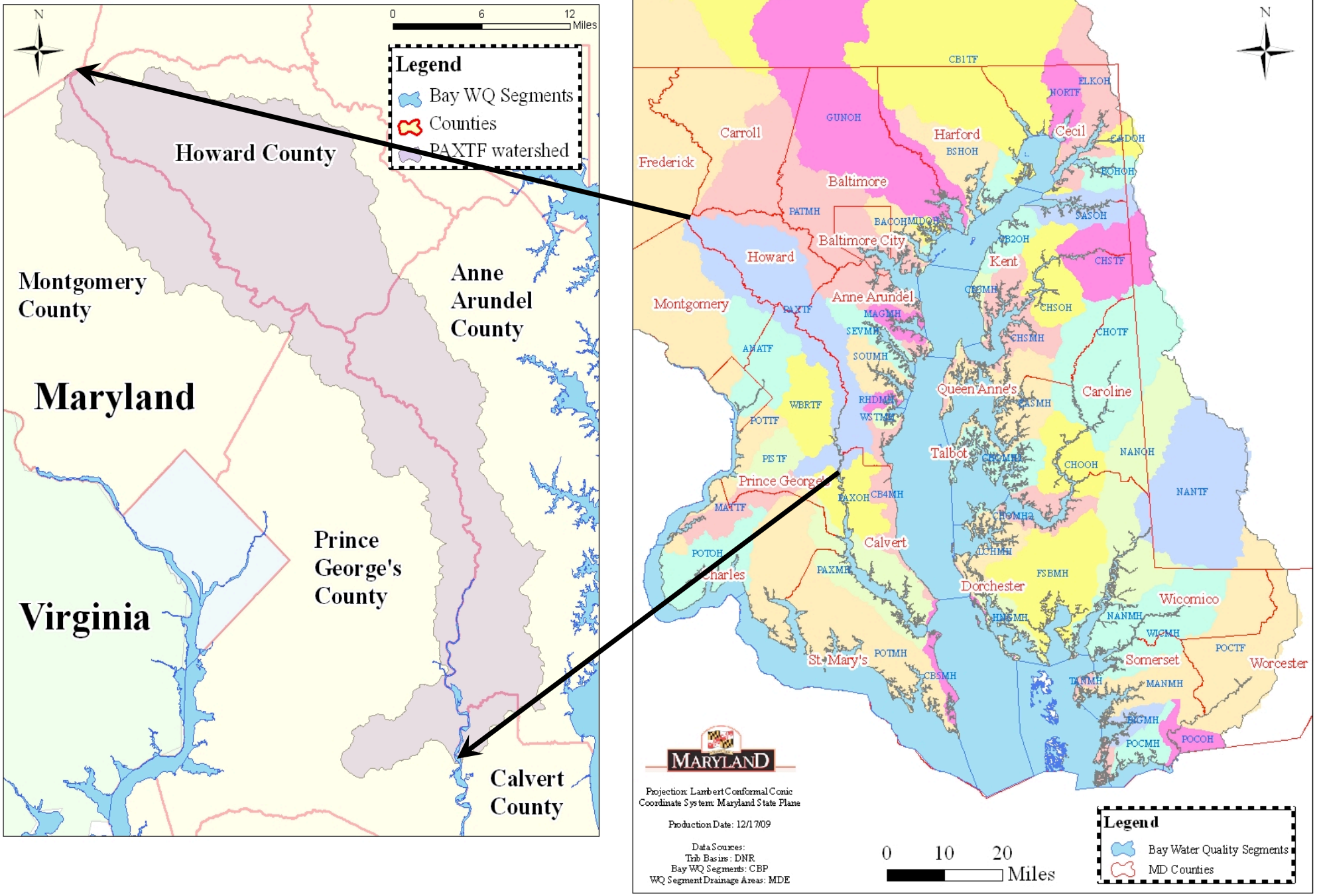
Phase 5 Bay Watershed Model (2009-)

VA Rivers Receiving Their Own Pollution Diet to Restore the Chesapeake Bay

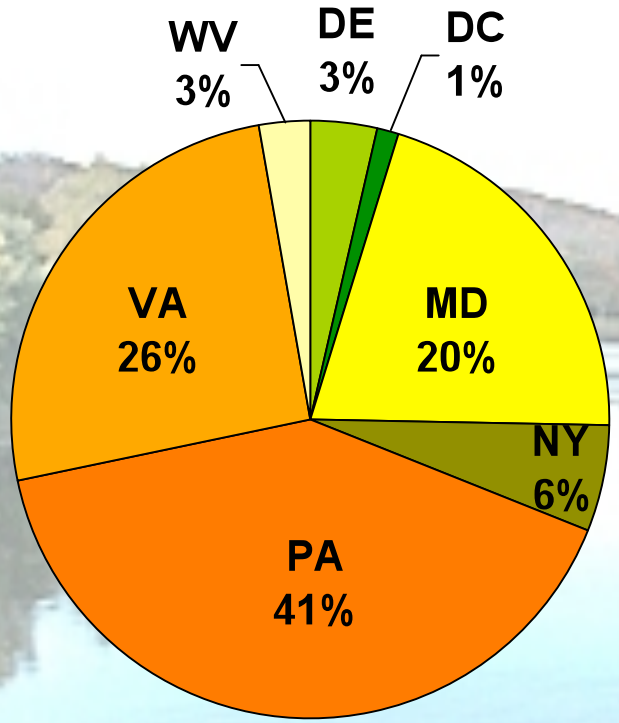


VA Counties Receiving Their Own Pollution Diet to Restore the Chesapeake Bay

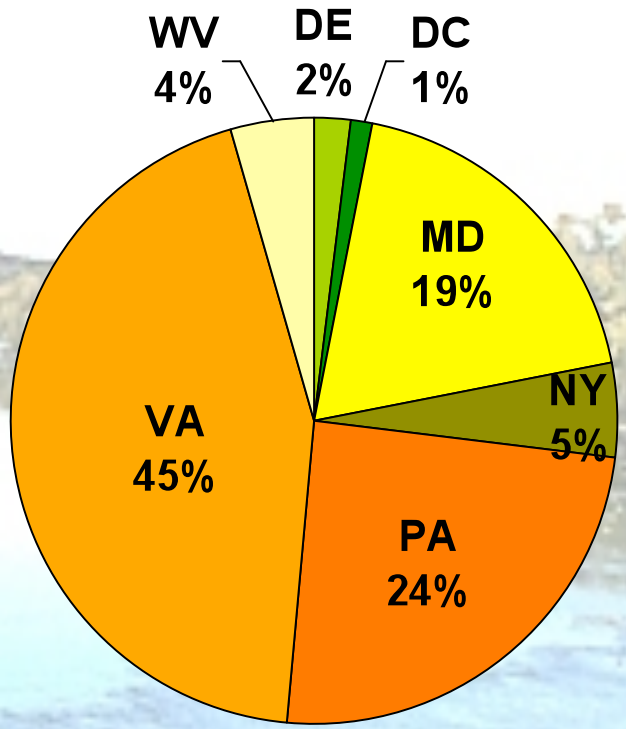



N
0
6
12
Miles
Legend
Bay WQ Segments
Counties
PAXTF watershed
Howard County
Montgomery County
Anne Arundel County
Maryland
Prince George's County
Virginia
Calvert County
CB1TF
ELKOH
NORTF
GUNOH
Carroll
Harford
Cecil
CADOH
BSHOH
Frederick
Baltimore
BOHOH
PATMH
BACOH
MIDOH
SASOH
Baltimore City
CB2OH
Howard
Kent
CHSTF
Montgomery
Anne Arundel
CB3MH
PAXTF
MAGMH
CHSOH
SEVMH
CHSMH
CHOTF
AMATF
SOUMH
Queen Anne's
Caroline
RHDMH
WSTMH
WBRTF
POTTF
TASMH
Talbot
NANOH
PISTF
CHOMH
CHOOH
Prince George's
PAXOH
CB4MH
NANTF
MATTF
CHOMH2
Calvert
POTOH
LCHMH
Charles
PAXMH
FSBMH
Dorchester
Wicomico
HNGMH
NANMH
WICMH
POCTF
St. Mary's
POTMH
Somerset
Worcester
CBSMH
TANMH
MANMH
BIGMH
POCMH
POCOH
MARYLAND
Projection: Lambert Conformal Conic
Coordinate System: Maryland State Plane
Production Date: 12/17/09
Data Sources:
Trib Basins: DNR
Bay WQ Segments: CBP
WQ Segment Drainage Areas: MDE
0
10
20
Miles
Legend
Bay Water Quality Segments
MD Counties

Nutrient Loads by State



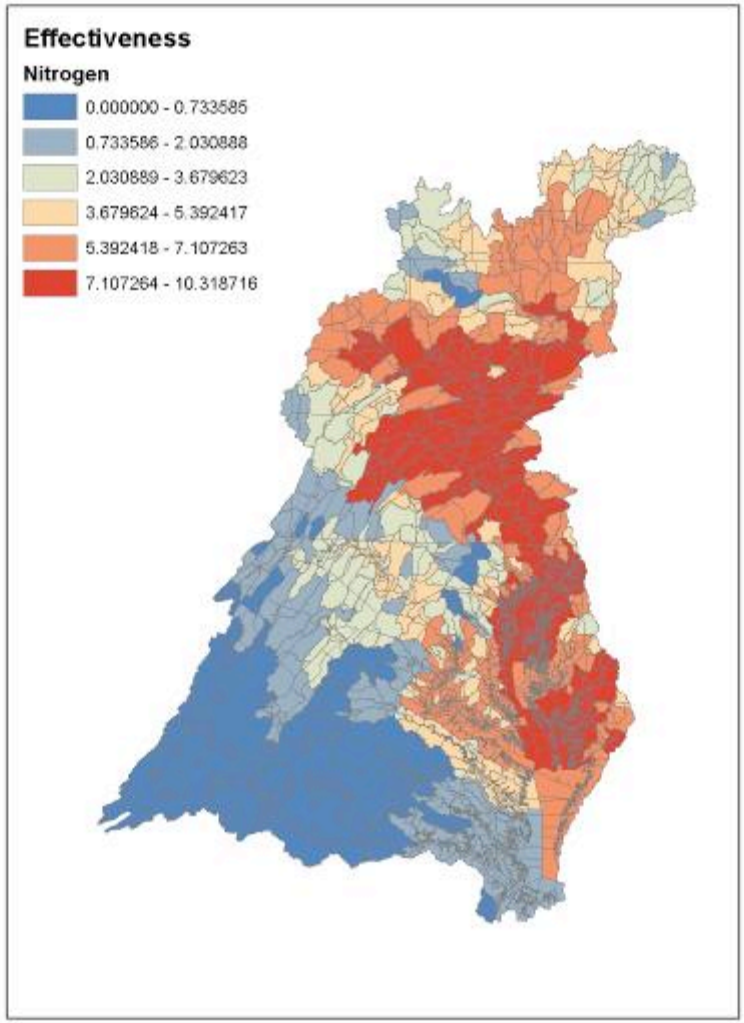
Nitrogen*

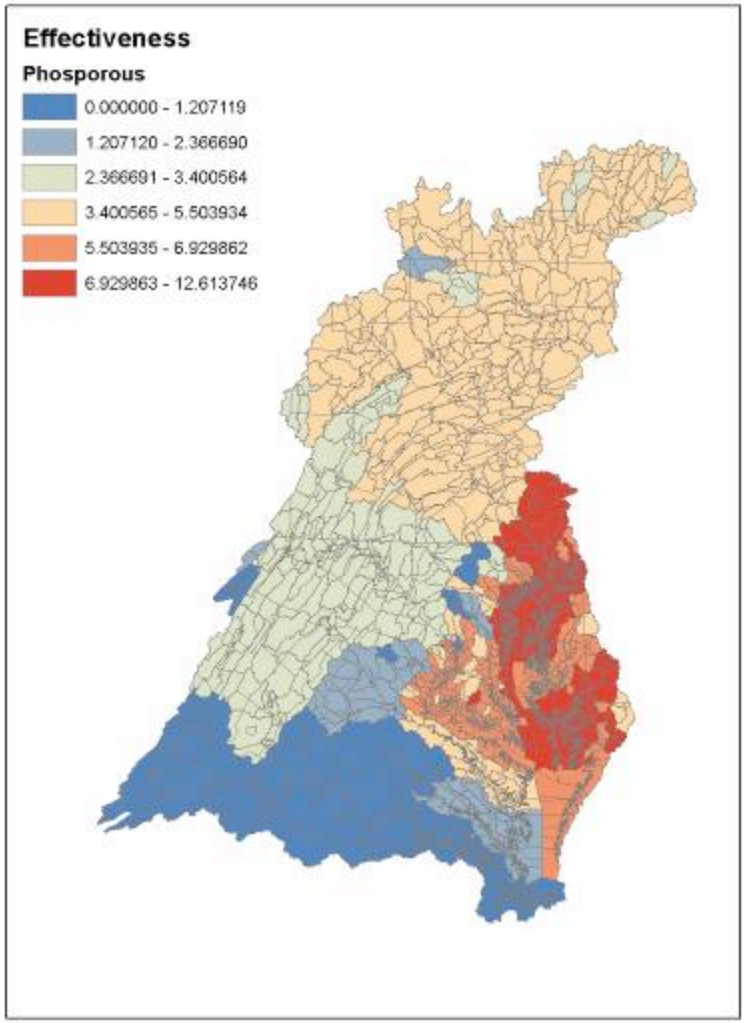


Phosphorus

*EPA estimates a nitrogen load of 284 million lbs nitrogen in 2008. EPA assumes a reduction of 7 million lbs due to the Clean Air Act. This leaves 77 millions lbs to be addressed through the TMDL process.

Nutrient Impacts on Bay WQ





Mandatory Pollution Diet at Work

Develop Watershed Implementation Plans

Establish Bay TMDL:

Set 2-Year Milestones

Monitor Progress

Employ Federal Actions or Consequences

Watershed Implementation Plans

- **Include:**
  - **Individual point source target loads and aggregate target loads for nonpoint source sectors**
  - **Schedule for load reductions**
  - **Strategy and schedule to fill program gaps**
  - **Commitments to install needed controls**
  - **Accounting for growth**
  - **Tracking and reporting protocol**
  - **Contingencies for failed or delayed implementation**

Federal Consequences

- **Letter from EPA to states on December 29, 2009**
- **Outlines EPA actions for state failure to:**
  - **Submit watershed implementation plan consistent with EPA's November 4, 2009 'expectations' letter**
  - **Submit 2-year milestones consistent with EPA's November 4, 2009 letter**
  - **Achieve the jurisdiction's 2 year milestones**
  - **Develop NPDES permits consistent with allocations in the TMDL**
  - **Develop 'enforceable or otherwise binding' mechanisms to ensure that nonpoint source reductions are achieved**

Federal Consequences Include…

- Expand NPDES permit coverage to unregulated sources
- Increase permit oversight/object to permits
- Require net improvement offsets
- Establish finer scale allocations
- Require additional reductions from regulated point sources (e.g., wastewater treatment plants)
- Increased federal enforcement
- Condition or redirect federal grants
- Promulgation of local nutrient standards

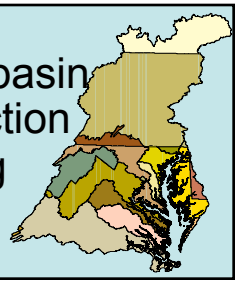
Bay and Local Pollution Diet Schedule

Nov. - Dec. 2009

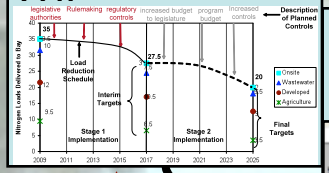
EPA sends Expect-ations letter to PSC

EPA sends Conse-quences letter to PSC

Major basin jurisdiction loading targets

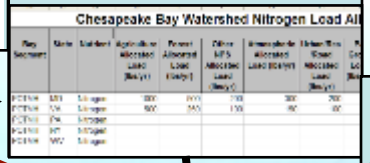


Develop Ph. I WIP

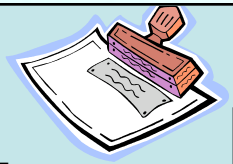


Nov. 2009 – August 2010

Plan details into draft WLAs & LAs

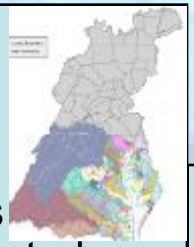


Final TMDL Established



December 2010

Ph II WIP with local targets and controls



No later than November 2011

2-year milestones, reporting, modeling, monitoring

2012 – 2025

Bay TMDL: Bottom-line

- Actions will clean and protect local waters thereby supporting the local economies
- Restore a thriving Chesapeake Bay
- Federal, state, local officials and agencies will be fully accountable to the public
- Consequences for inaction, lack of progress



Further Information

- Chesapeake Bay TMDL web site

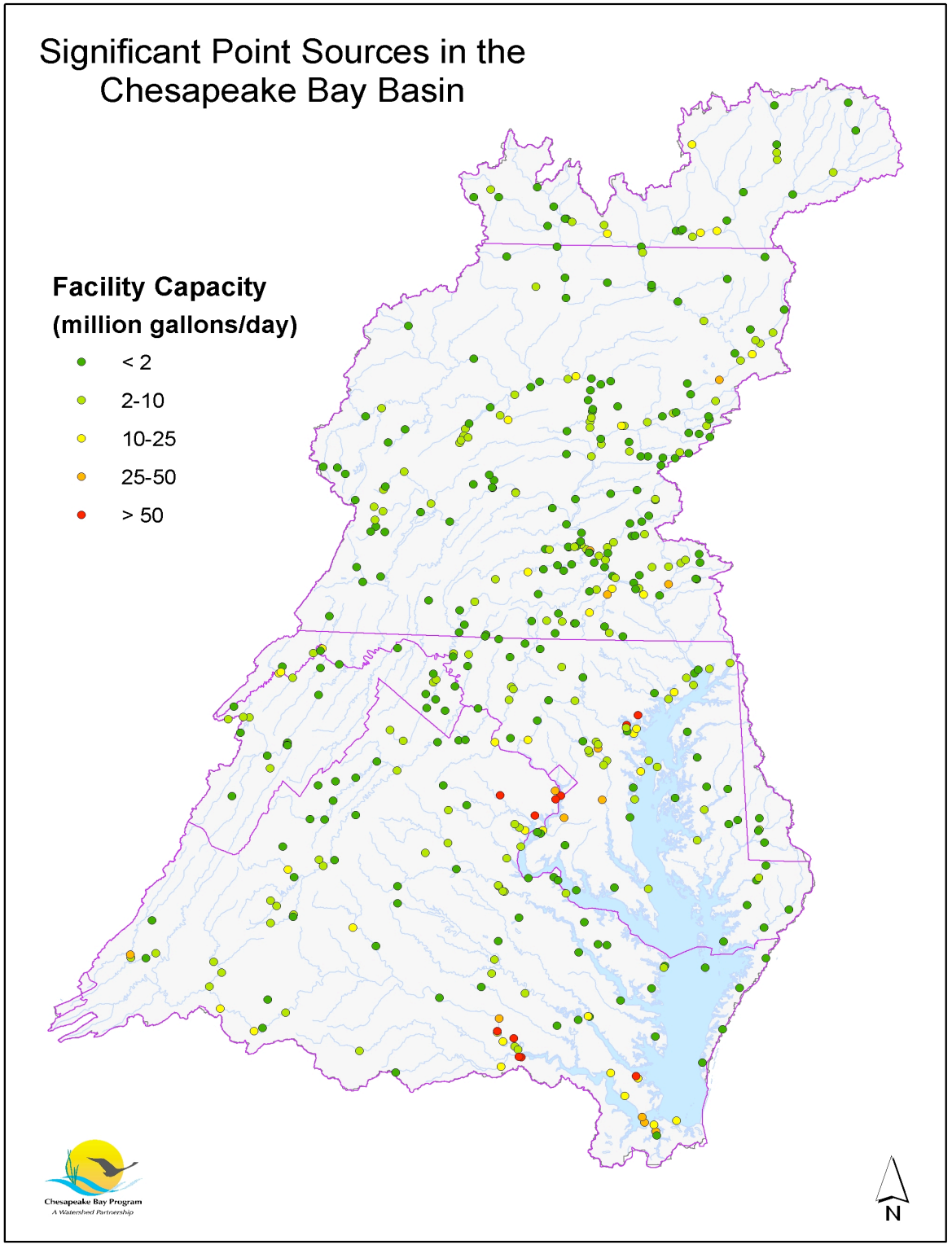
  www.epa.gov/chesapeakebaytmdl

- U.S. EPA Region 3 Contacts
  - Water Protection Division
    - Bob Koroncai
      - 215-814-5730; koroncai.robert@epa.gov
    - Jennifer Sincock (sincock.jennifer@epa.gov)
  - Chesapeake Bay Program Office
    - Rich Batiuk
      - 410-267-5731; batiuk.richard@epa.gov
    - Katherine Antos (antos.katherine@epa.gov)

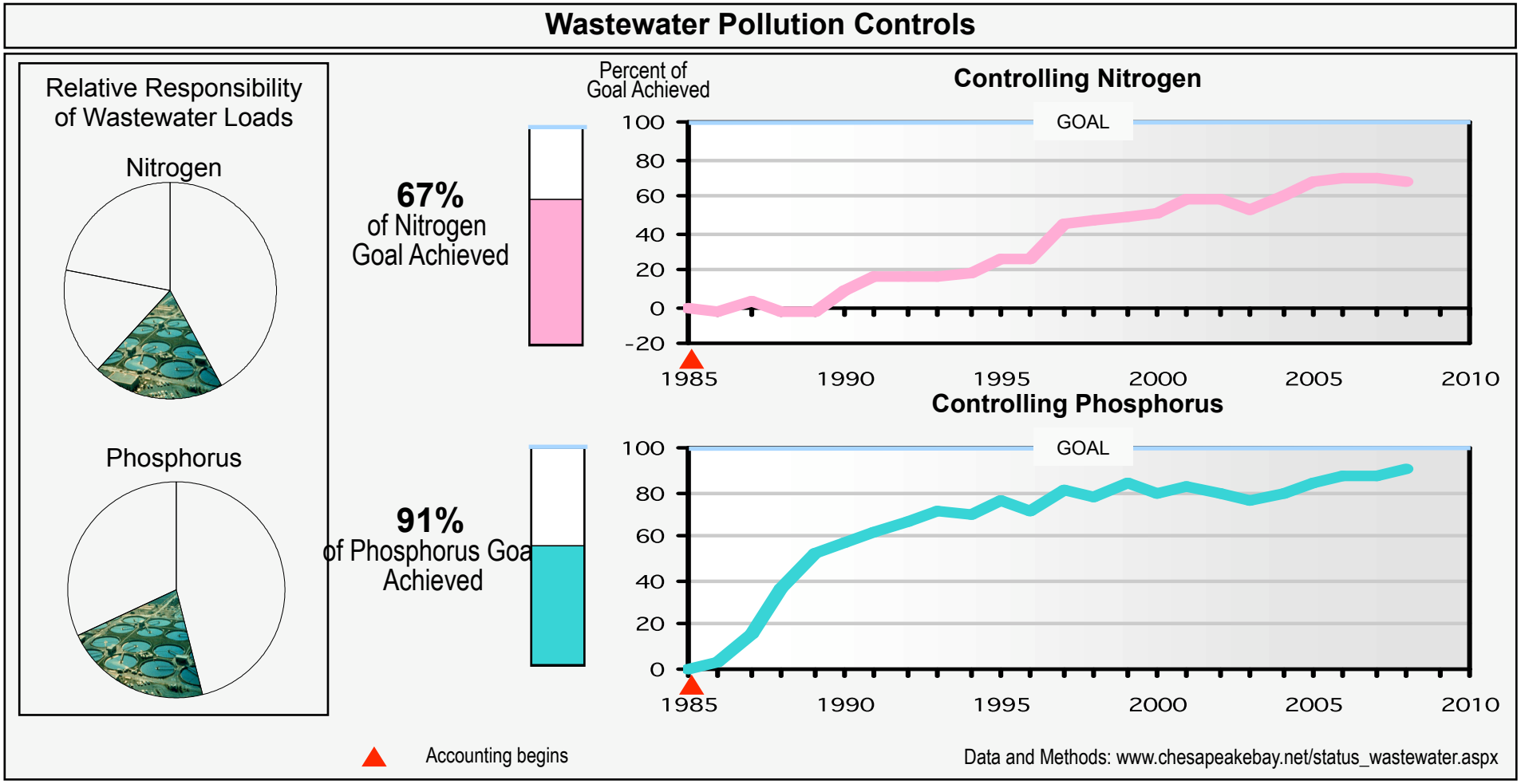
Significant Facility Statistics

Size (mgd)	Number
<2	276
2-10	143
10-25	38
25-50	15
>50	10

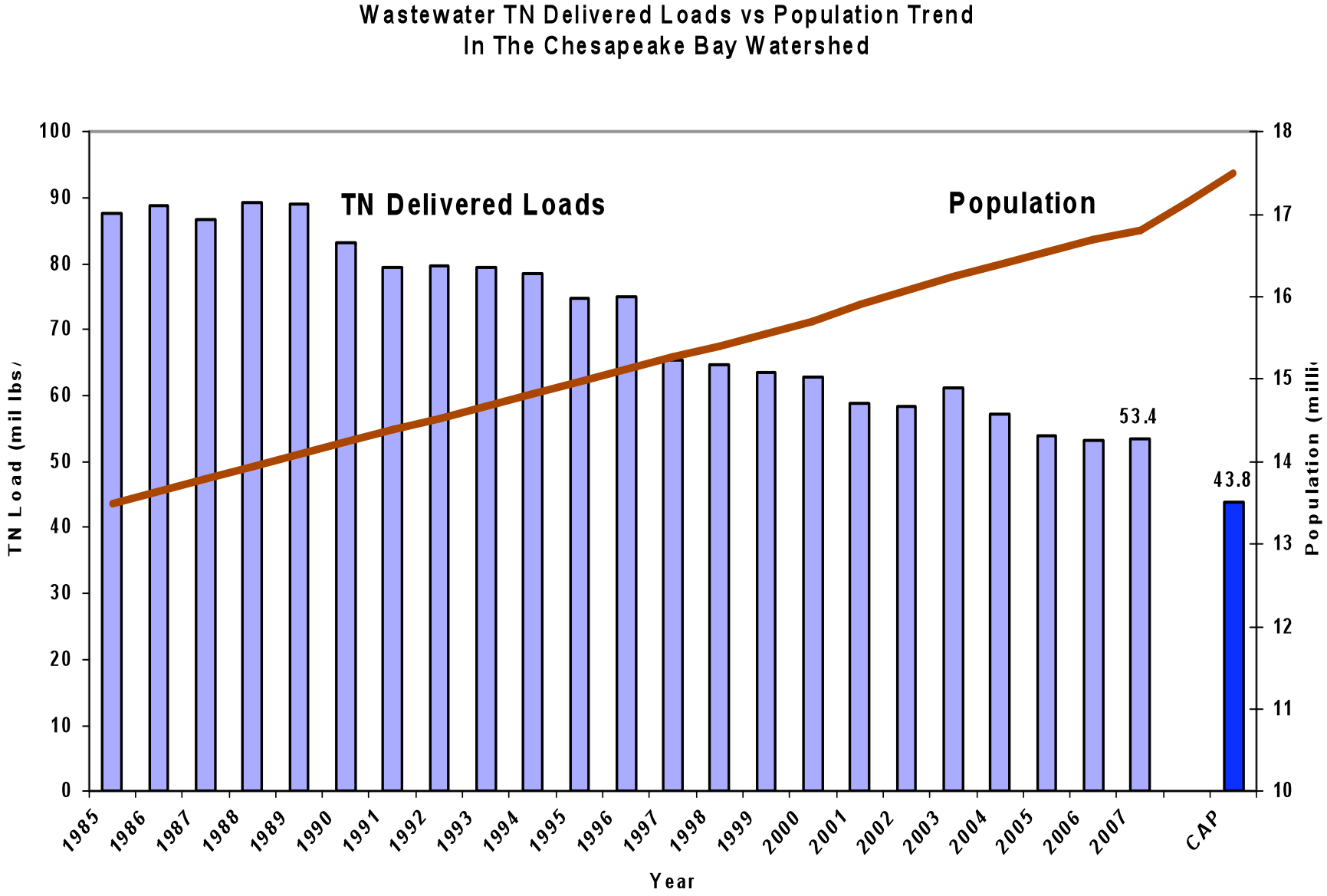
Source: www.chesapeakebay.net



We are making significant progress!

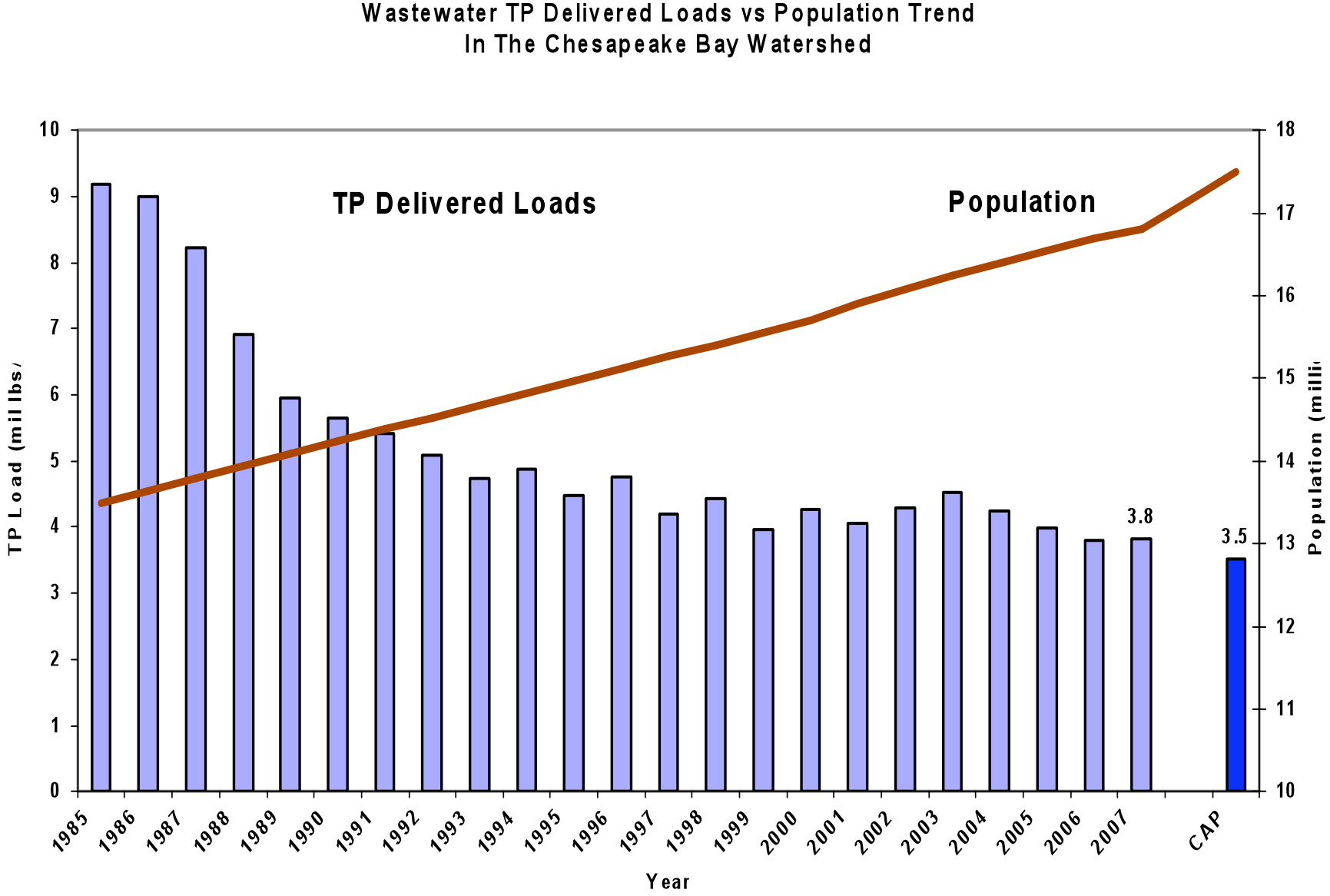


Wastewater TN Load Reduction Progress



Source: www.chesapeakebay.net

Wastewater TP Load Reduction Progress



Source: www.chesapeakebay.net

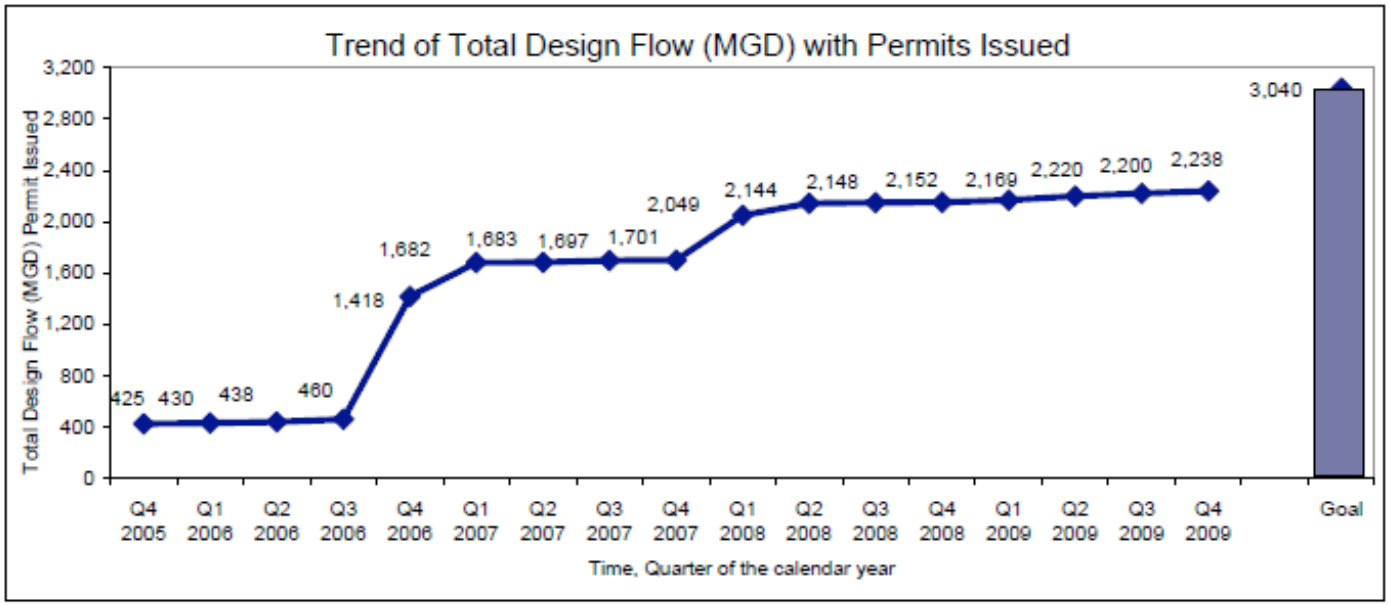
Nutrient Permit Tracking For Significant Facilities In The Bay Watershed

Nutrient Permit Tracking Summary by the End of Fourth Quarter of 2009 (calendar year)

STATE	# Significant Facilities	# Facilities Permits Drafted	# Facilities Permits Issued	Design Flow of Facilities Permits Issued	% of Design Flow of Permits Issued/All Sig Plants	TN Load Permits Issued	%TN Load Permits Issued/All Sig TN load	TN (lbs/yr) Reduction From 2004 Permit Issued	% TN Load Reduction Permit Issued/All Sig Plants	TP Load Permits Issued	%TP Load Permits Issued/All Sig TP load	TP (lbs/yr) Reduction From 2004 Permit Issued	% TP Load Reduction Permit Issued/All Sig Plants
DC	1	1	1	152.5	100%	2,115,000	100%	943,079	100%	83,639	100%	-16,146	-100%
DE	4	4	4	3.3		507,815	100%	-332,591	-115%	18,918	100%	-10,792	-551%
MD	85	54	40	336.3	39%	3,932,427	39%	1,228,192	19%	241,706	34%	76,415	155%
NY	28	1	1	20.0	22%	304,556	13%	970,338	62%	30,456	9%	99,690	47%
PA	213	122	87	433.6	67%	7,922,909	64%	3,335,545	137%	1,056,388	73%	358,430	97%
VA	124	124	124	1,253.5	100%	21,791,407	100%	4,546,678	100%	1,825,075	100%	434,909	100%
WV	28	21	20	38.5	81%	566,091	80%	185,755	100%	84,661	86%	255,987	100%
Total	**483**	**327**	**277**	**2,237.7**	**73%**	**37,140,204**	**74%**	**10,876,997**	**69%**	**3,340,843**	**74%**	**1,198,493**	**92%**

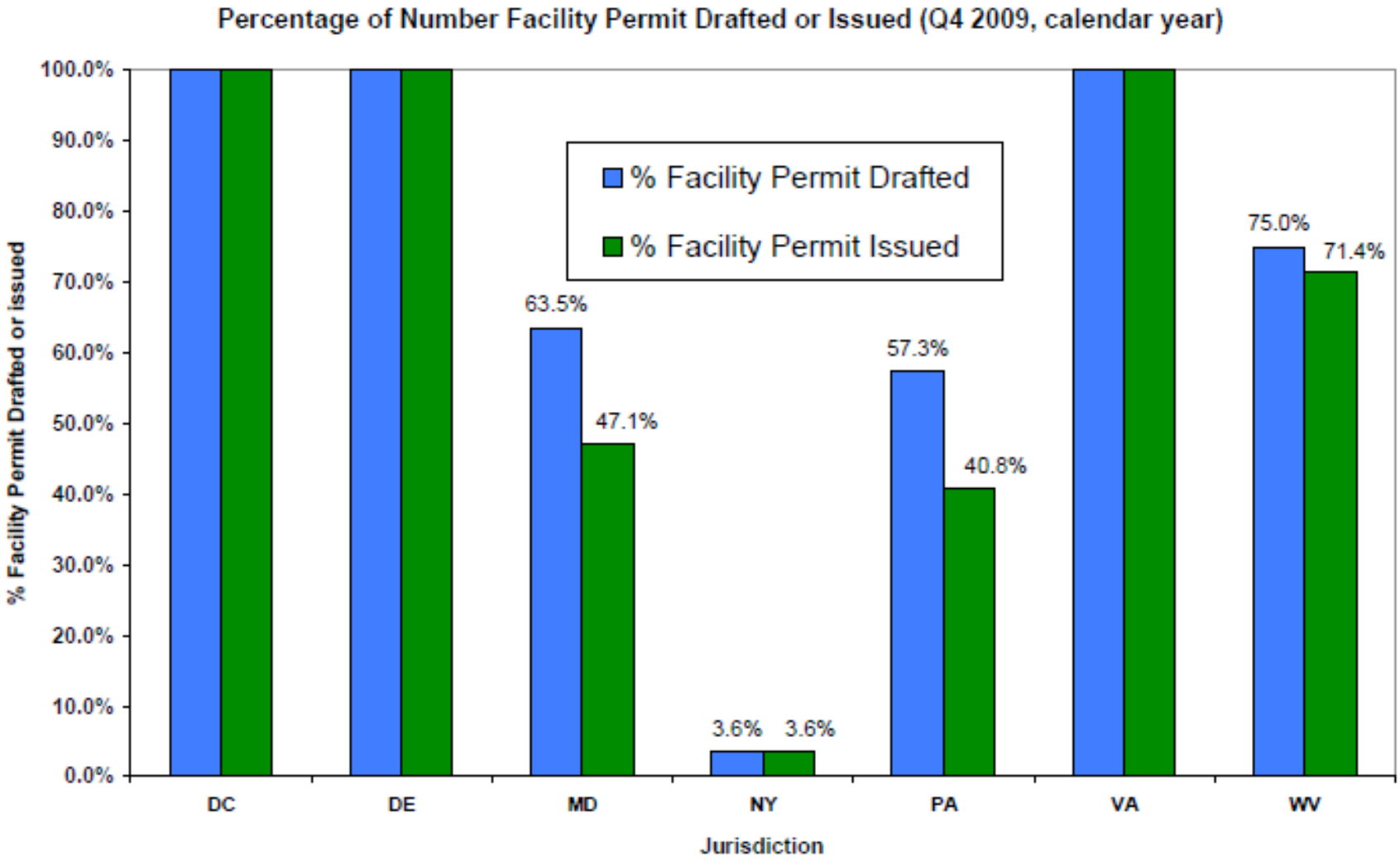
Note: Some industrial design flows are not available or not comparable and not listed in the database, such as the DE Invista plant.

Blue Plains' flow and loads are allocated among DC, MD and VA, but is counted only once as one plant located in DC.



Note: The design flow curve has been modified due to the updates of design flows and VA permit issue dates for individual plants.

1/8/2010, CBPO



Note: Facilities with drafted permits include facilities with issued permits. Blue Plains treats wastewater from DC, MD and VA, but is only counted once as a DC plant in this chart.

Questions & Comments