

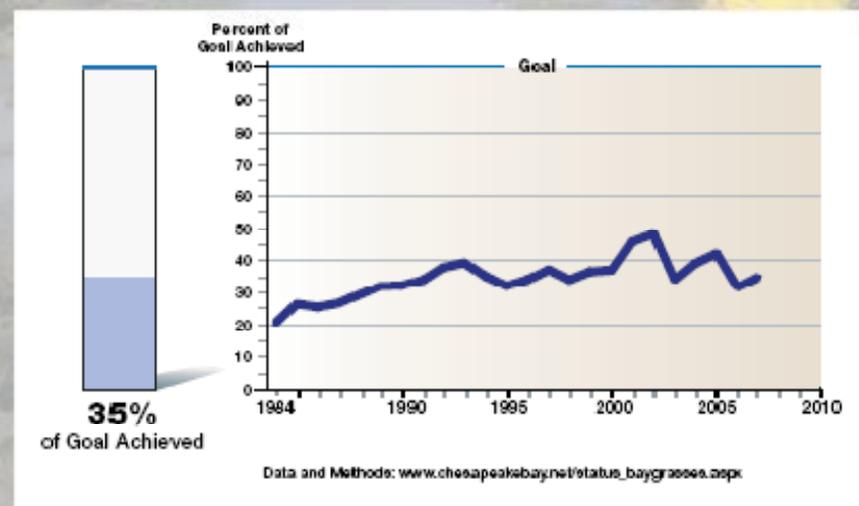
CHESAPEAKE BAY WATERSHED

- *Six-state, 64,000 sq. mile watershed*
- *10,000 miles of shoreline*
- *Over 3,600 species of plants, fish and other animals*
- *\$750 million to local economies*
- *Home to 18 million people*

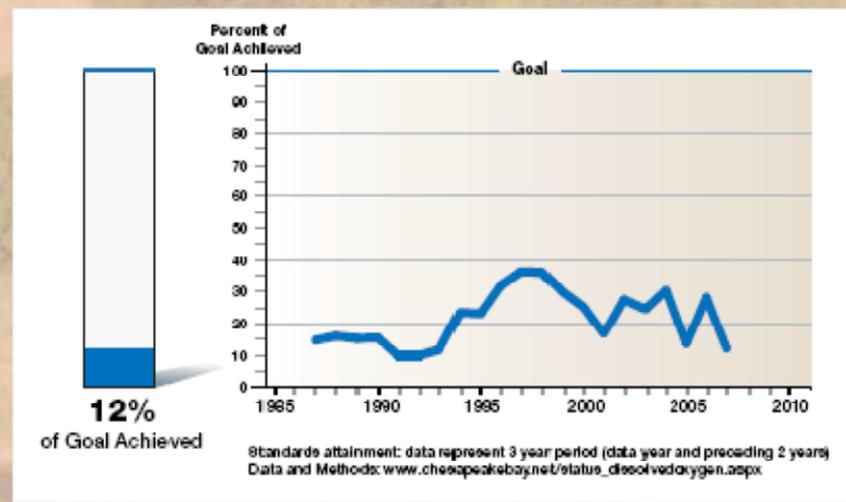


WATER QUALITY INDICATORS

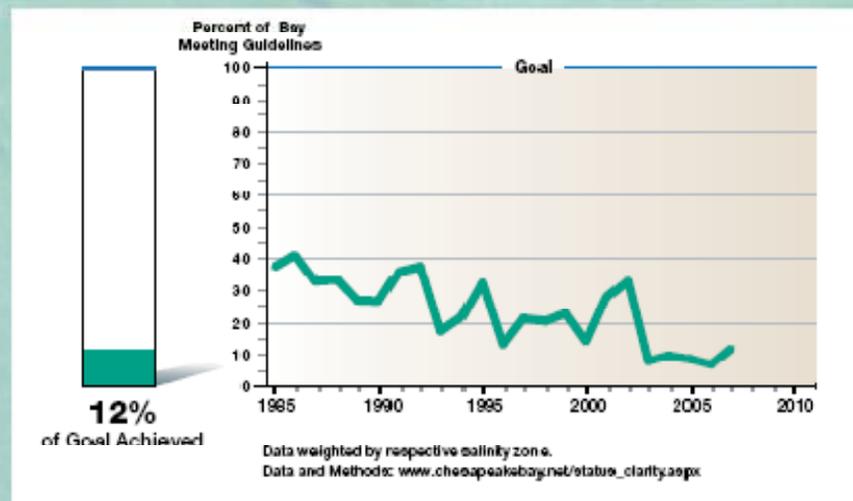
BAY GRASS ABUNDANCE



DISSOLVED OXYGEN STANDARDS ATTAINMENT



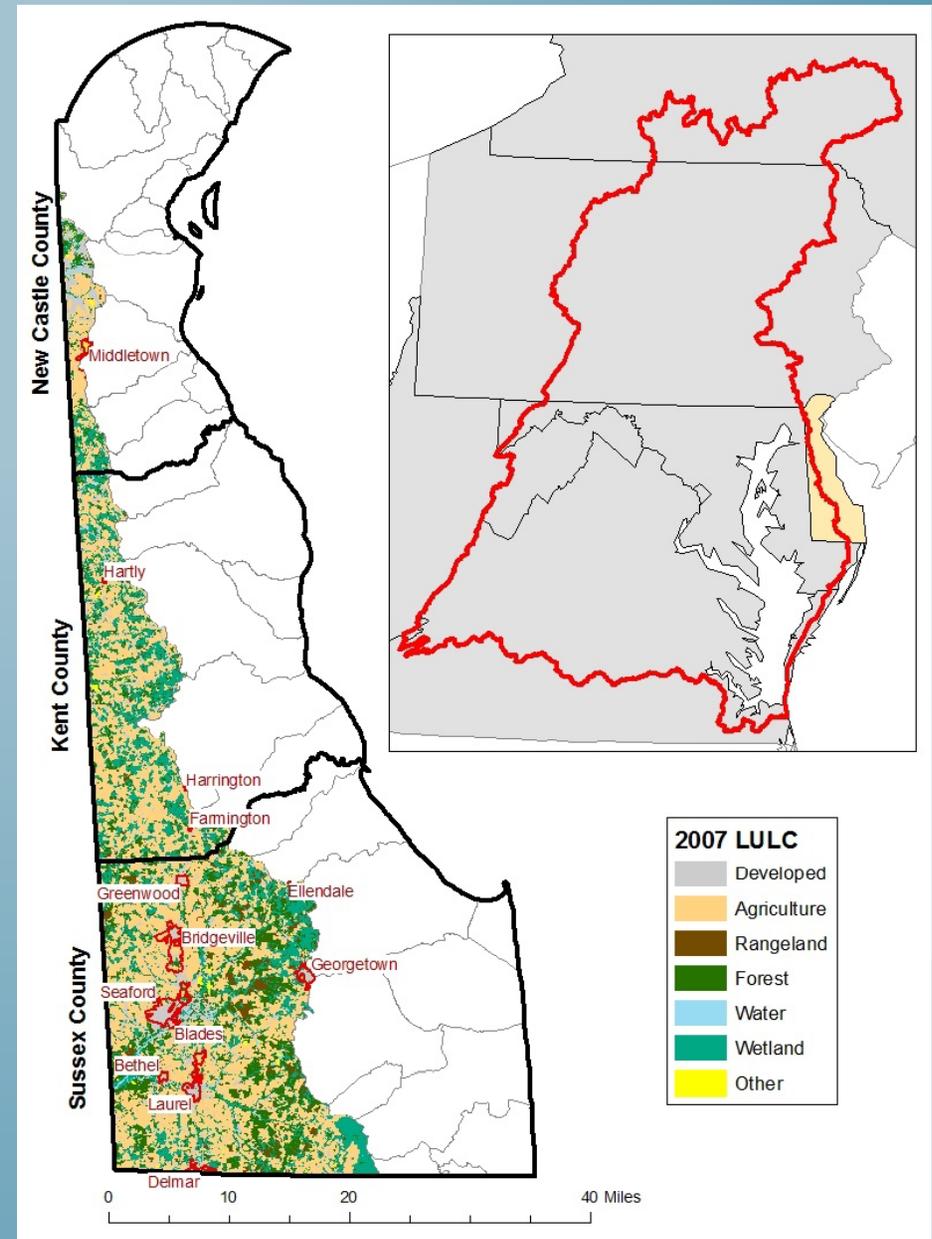
MID-CHANNEL WATER CLARITY



Source: EPA, 2007

THE CHESAPEAKE BAY WATERSHED IN DELAWARE

- ▶ *Within all 3 counties*
- ▶ *Very rural character:*
 - ▶ *Developed* 10%
 - ▶ *Agriculture* 48%
 - ▶ *Rangeland* 3%
 - ▶ *Forest* 16%
 - ▶ *Water* 1%
 - ▶ *Wetland* 21%
 - ▶ *Other* 1%
- ▶ *Small, but growing, towns*



LEGISLATIVE HISTORY

- **Clean Water Act of 1972**
 - **Requires TMDLs for impaired waters**
 - **WIPs provide the details of how the TMDL will be achieved (accountability and reasonable assurance)**
 - **Authorized the formation of the Chesapeake Bay Program in 1987 (a watershed partnership coordinated by EPA)**
- **Bay States Agreements**
 - **1983-MD, VA, PA, DC, EPA, Chesapeake Bay Commission**
 - **1987-goal to reduce nutrients by 40% by 2000**
 - **2000-comprehensive plans with 2010 goal for restoration**
 - **NY and DE committed to these goals by signing a Memorandum of Understanding (WV signed in '02)**

LEGISLATIVE HISTORY

- **Executive Order 13508**
 - *May 2009*
 - *Recognizes the Chesapeake Bay as a national treasure*
 - *Mandates Federal Agencies to lead a renewed effort to restore and protect the nation's largest estuary and its watershed (work on TMDL's and implementation plans)*
 - *Directs Feds to work with States*
- **Cardin Bill/Goodlatte Bill**

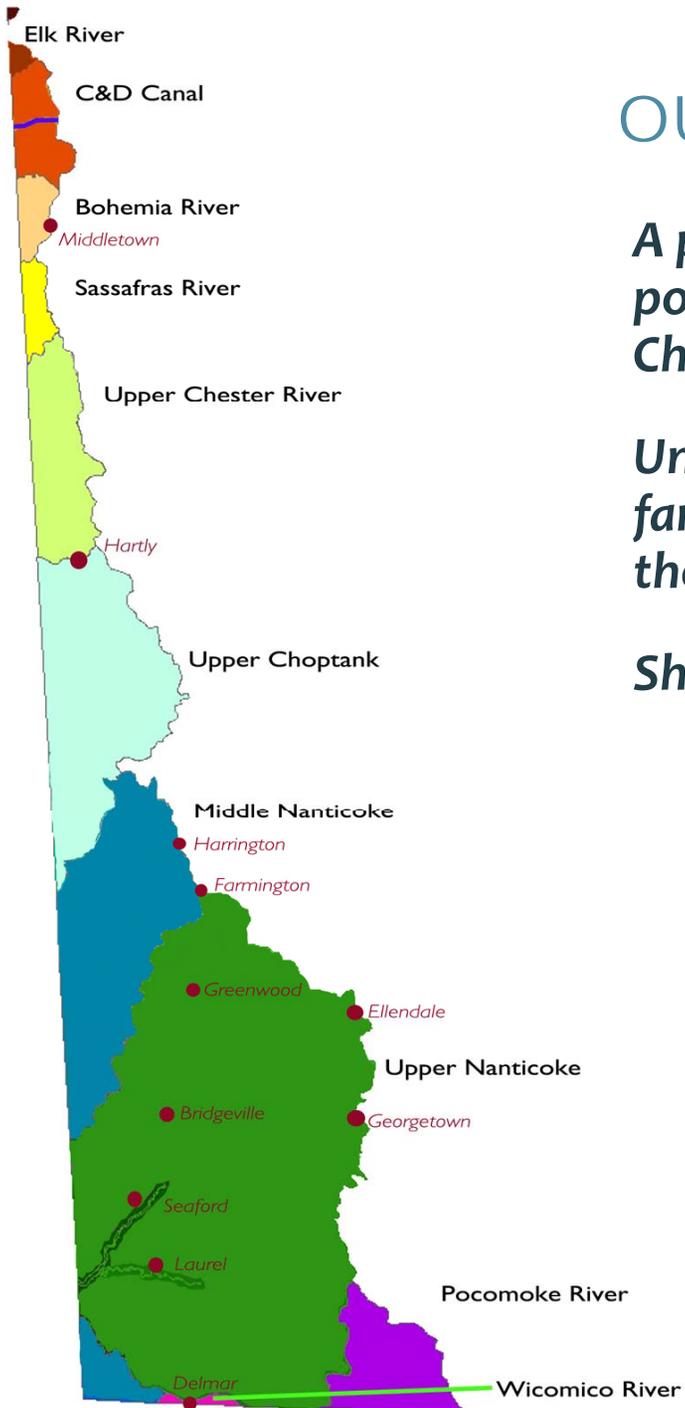
FORMAT FOR TONIGHT

- *Detailed Presentation – 30 minutes*
- *Questions, Comments*
 - *Technical Questions*
 - *Policy and Philosophical Questions*

In this
together

Delaware's role in cleaning up
our Chesapeake waterways





OUR PURPOSE TODAY

A progress report on Delaware's plan to meet pollution-reduction requirements in the Chesapeake basin

Understanding the role of government, farmers, developers and others in meeting those requirements

Sharing concerns and ideas

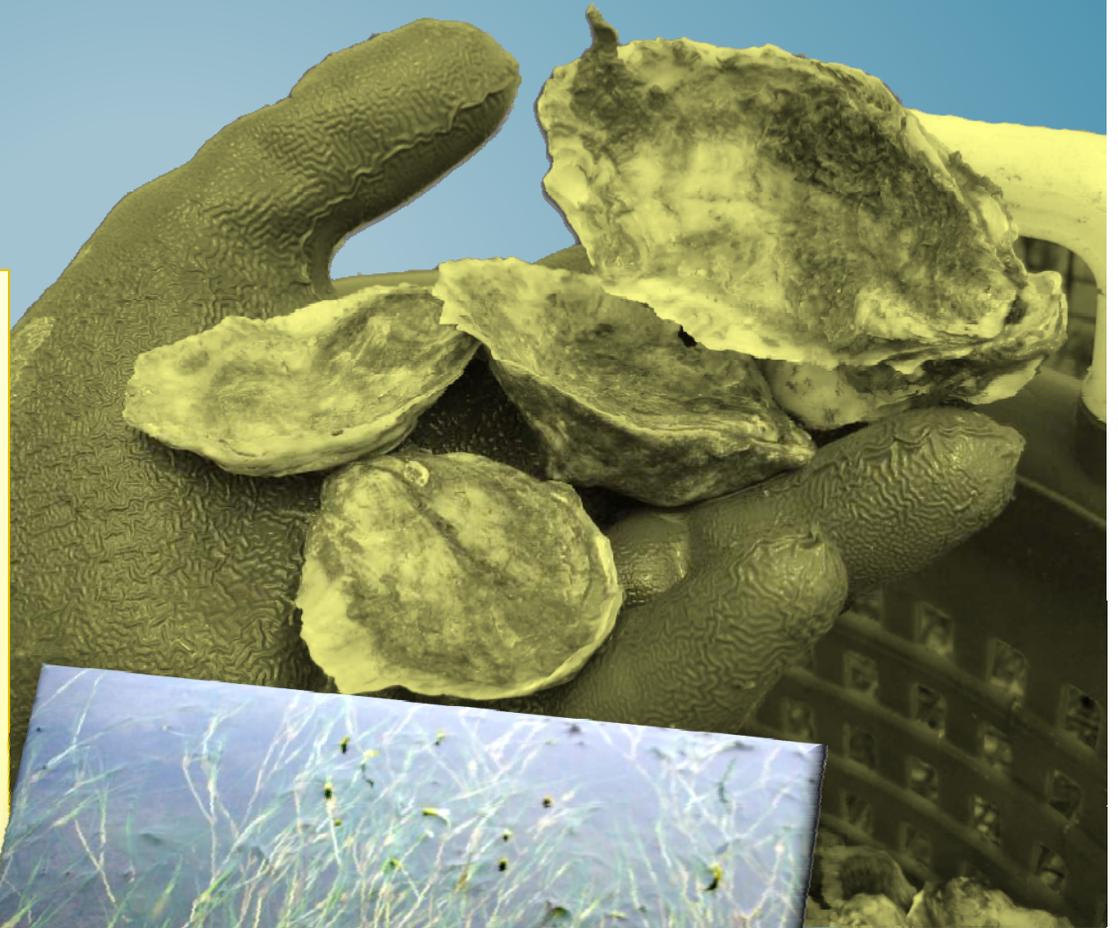
The Chesapeake watershed covers one-third of Delaware's land area, including half of Sussex County.

WHAT POLLUTES OUR WATERWAYS?

Excess nutrients (nitrogen and phosphorous) fuel the growth of dense algae blooms.

The nutrients and sediment block sunlight that underwater grasses need to grow. Grasses provide food for waterfowl and shelter for blue crabs and juvenile fish.

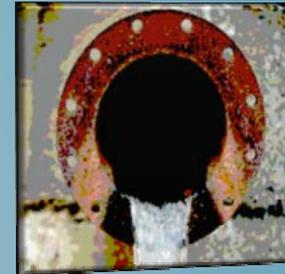
The pollutants also rob the water of oxygen that crabs, oysters and other bottom-dwelling species need to survive.



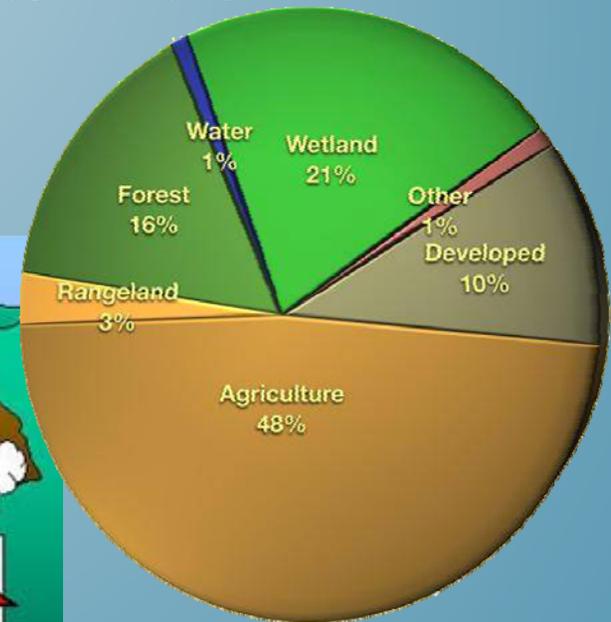
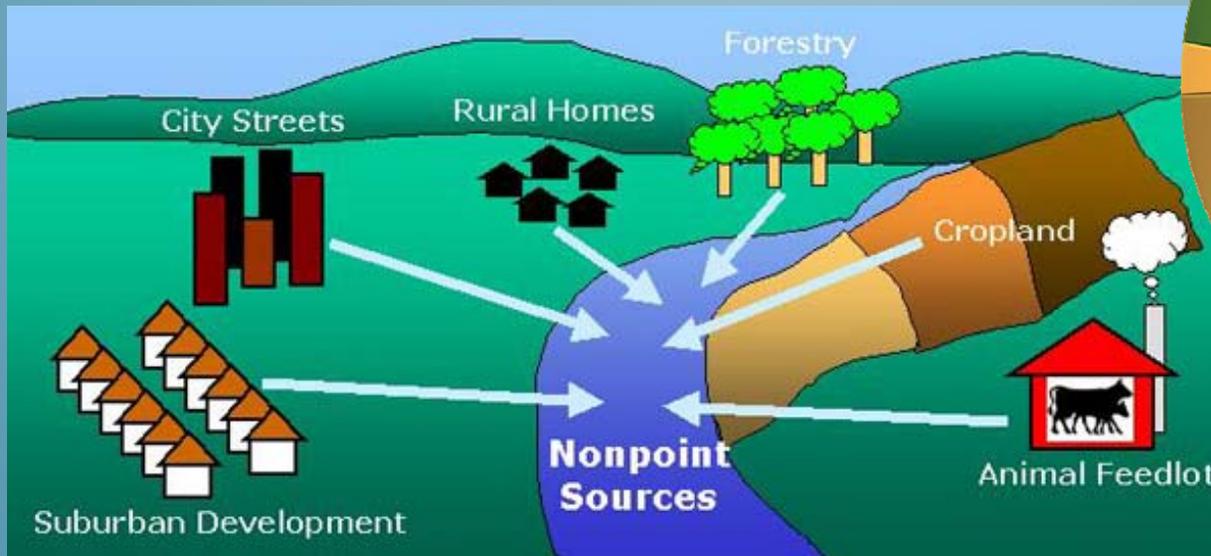
*Chesapeake
Bay
grasses*

WHERE DOES POLLUTION COME FROM?

Point sources – Comes from a specific source, such as a pipe. E.g., wastewater treatment plants.



Nonpoint sources – Harder to pinpoint and address. Agricultural and residential fertilizer runoff, stormwater discharges are examples.

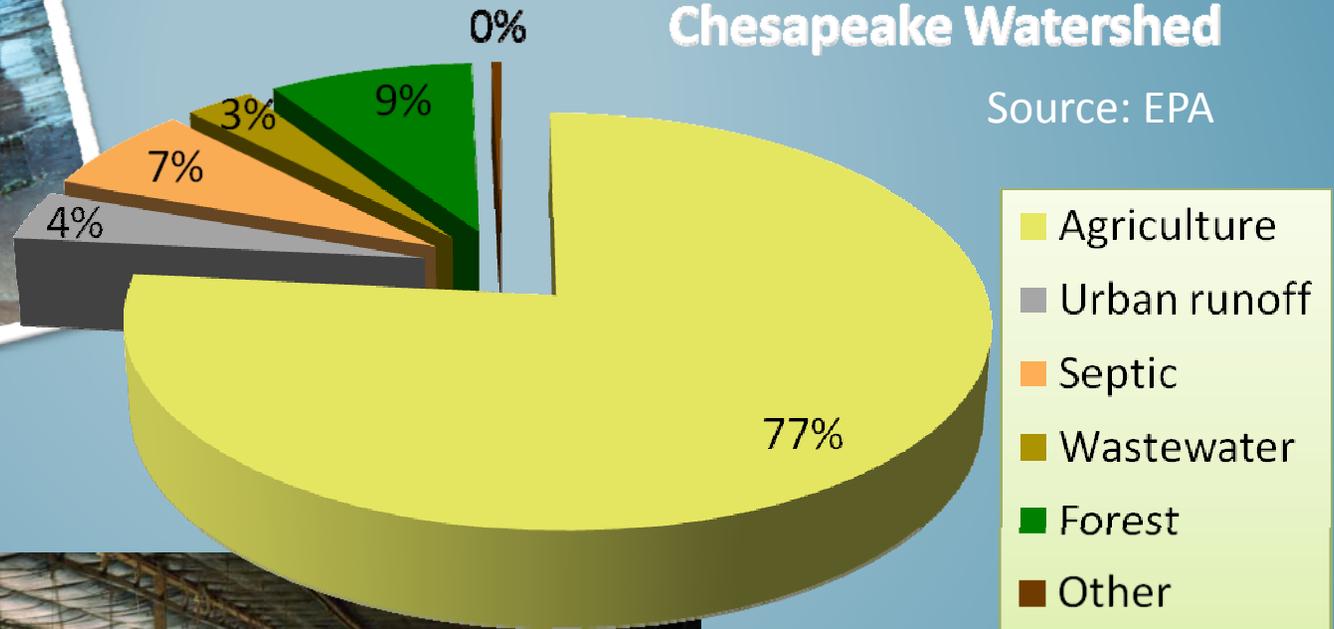


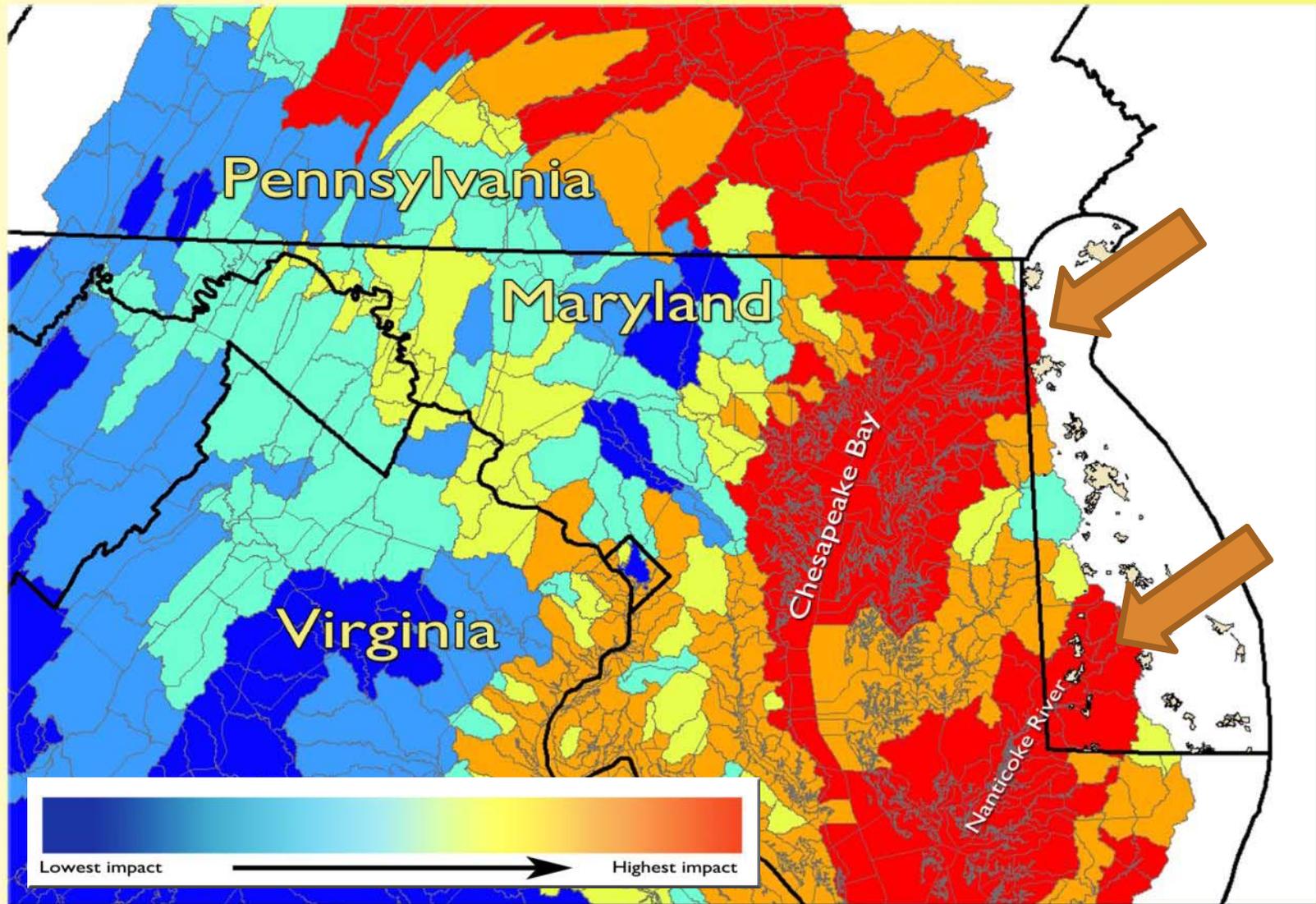
Chesapeake Land Use

WHERE DOES POLLUTION COME FROM?

Sources of Nitrogen from Delaware to Chesapeake Watershed

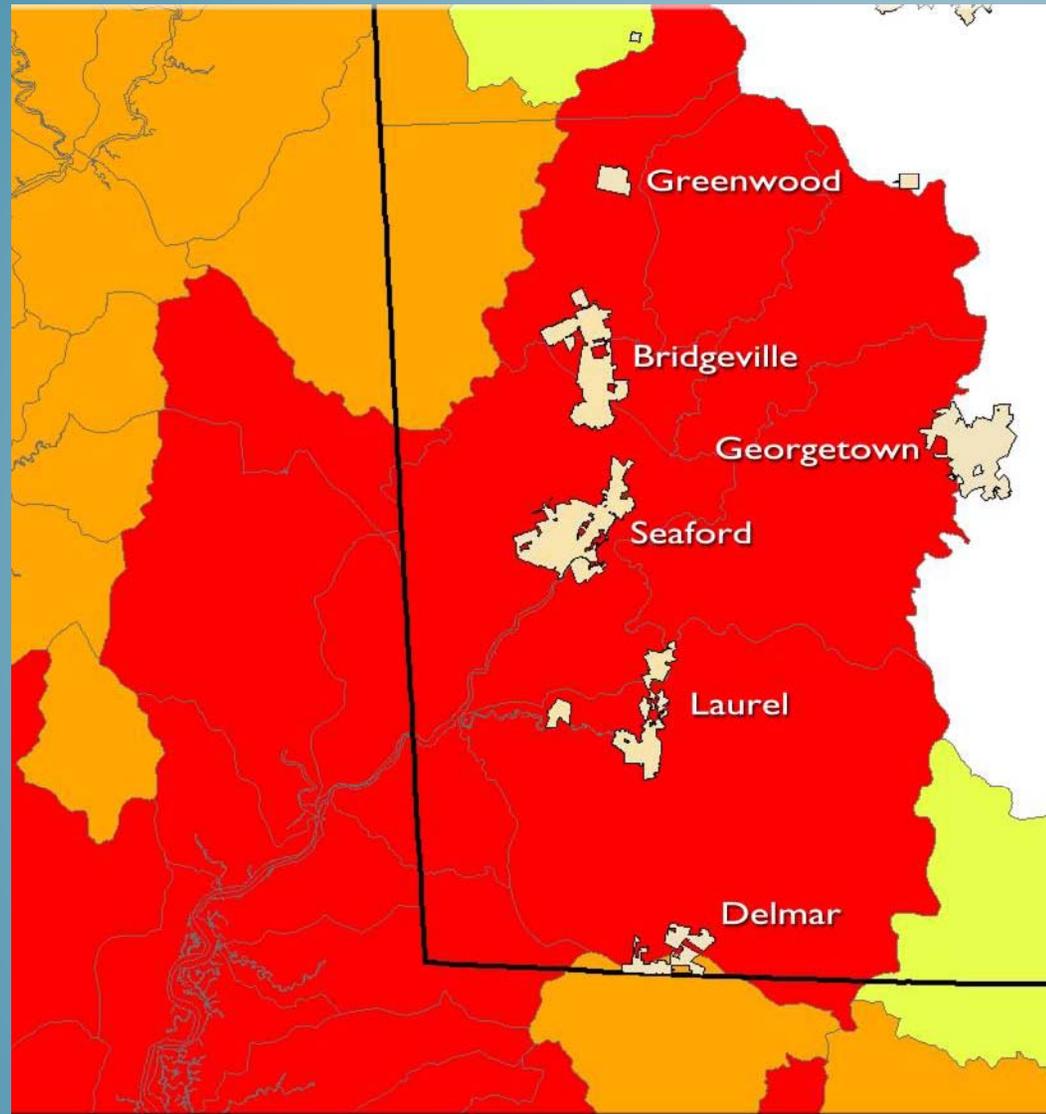
Source: EPA





DELAWARE IS AN
 "EFFECTIVE" POLLUTER
 OF THE CHESAPEAKE BAY

Impact of red areas on Bay water
 quality at least 10 times higher than
 blue areas

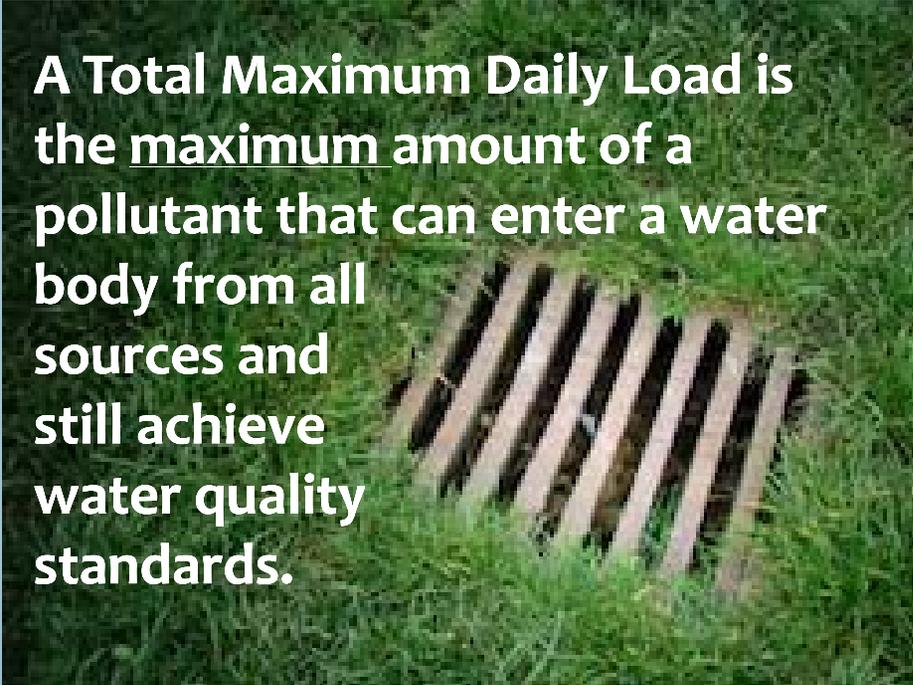


SANDY SOILS,
CLOSENESS
TO BAY,
DITCHING
PRACTICES,
FLATNESS ALL
CONTRIBUTE
TO OUR HIGH
IMPACT.

*The good news is the
steps we take to
reduce pollution will
be very effective at
improving Bay
quality.*

ABOUT THE CHESAPEAKE TMDL

- *Builds on previous efforts in Nanticoke, Chester, Choptank, Marshyhope, and Pocomoke*
- *Covers entire 6-state and DC watershed*
- *Sediment in addition to Nitrogen and Phosphorous*
- *Each state provided with an “allocation” for nitrogen, phosphorus, and sediment*
- *60% by 2017; 100% by 2025*
- *We are required to develop a three-phase Watershed Implementation Plan (WIP)*



A Total Maximum Daily Load is the maximum amount of a pollutant that can enter a water body from all sources and still achieve water quality standards.

It's been called a “pollution diet.”

Required reductions of:

- **29% for Nitrogen**
- **19% for Phosphorus**
- **<10% for Sediment**

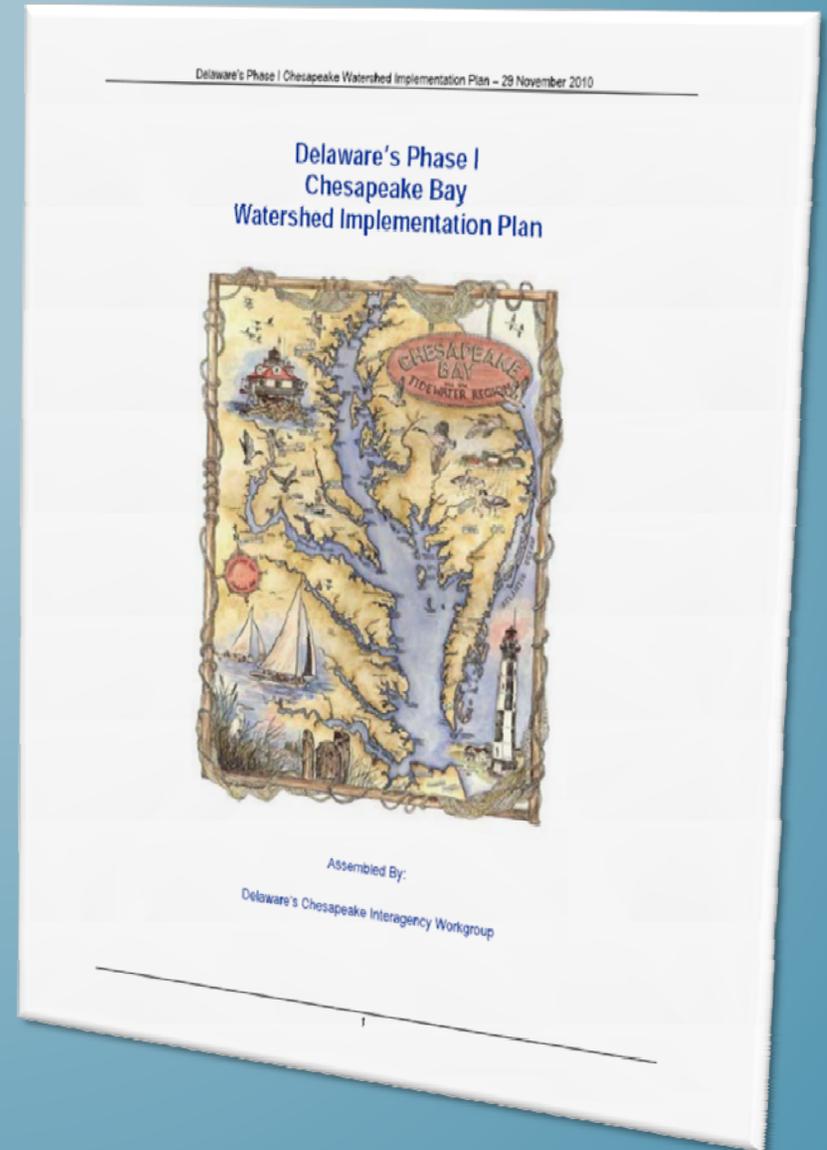
DELAWARE'S PHASE I WATERSHED IMPLEMENTATION PLAN

Convened an Interagency Workgroup – representatives from numerous partner and stakeholder groups

Formed 9 Subcommittees to draft text and propose actions to meet Delaware's Statewide allocations

Submitted a Draft plan to EPA on September 1, 2010, but it did NOT achieve pollution reduction goals!

Revised the plan based on feedback from EPA and the public

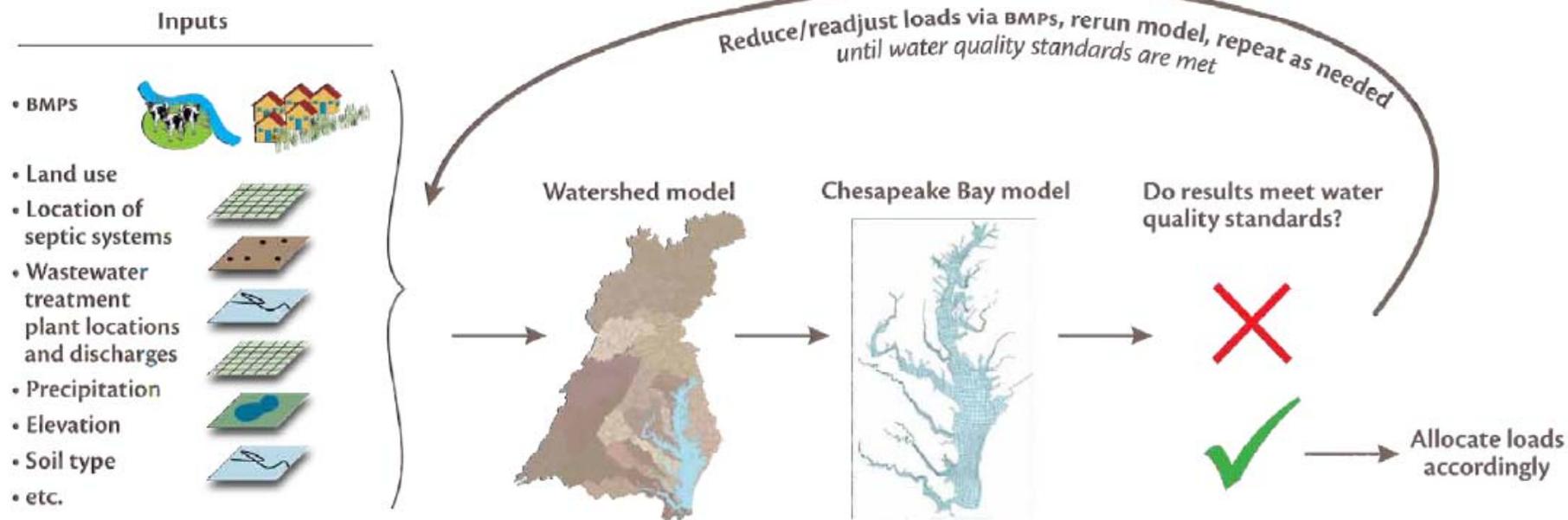


HOW DO WE KNOW WE'RE MEETING OUR GOALS?

All kinds of inputs are run through the EPA's Chesapeake Bay TMDL model – for example, sewer and septic areas, land use, soil types and elevations.

Existing and planned best management practices (BMPs) also are fed into the model – for example, “green” stormwater and buffer requirements, acres of cover crops, and septic-system elimination.

The model determines if we meet our share of the Chesapeake's “pollution diet.”

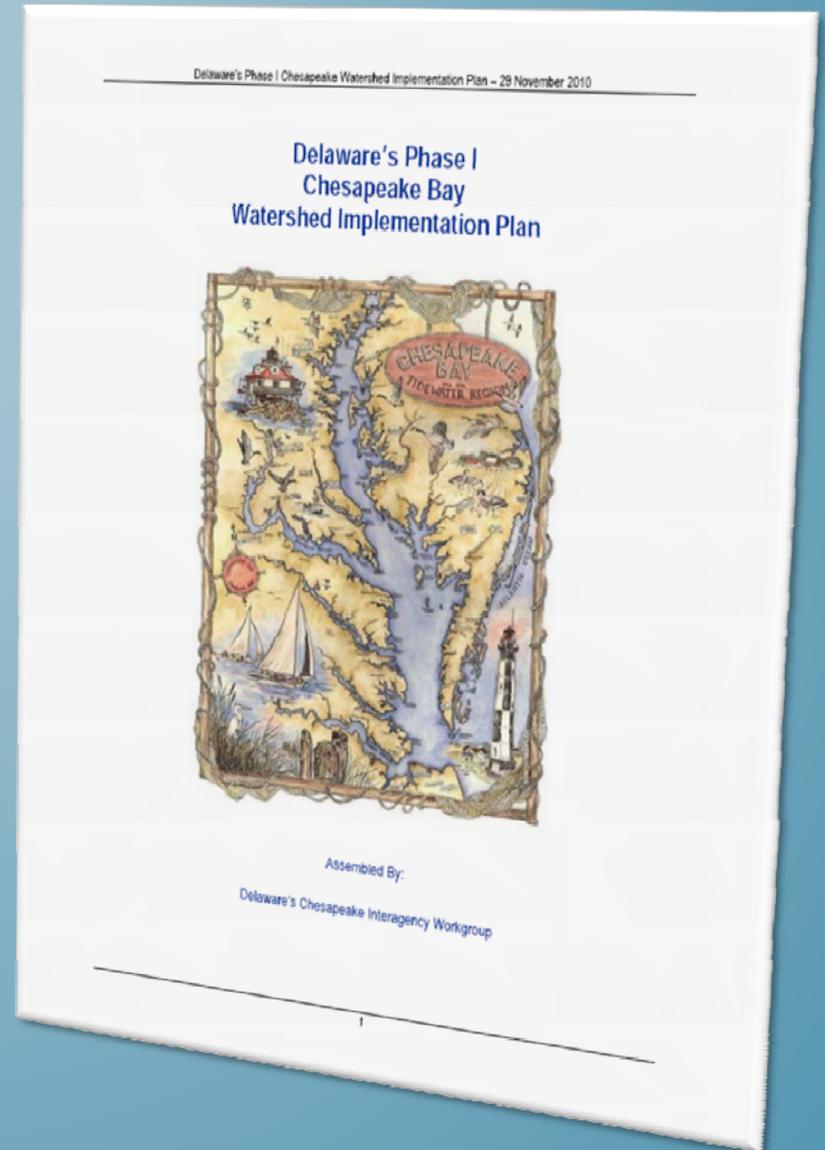


DELAWARE'S PHASE I WATERSHED IMPLEMENTATION PLAN

Delaware submitted our Final Phase I Watershed Implementation Plan to EPA on November 29, 2010

We showed that we can meet federal water quality goals by 2025 without requiring any drastic or punitive measures (“backstops”) in the short term

EPA used the Phase I WIPs to establish the Bay TMDL on December 31, 2010



EXPECTATIONS FOR PHASE II PLAN



We have to get more specific and localized in Phase 2

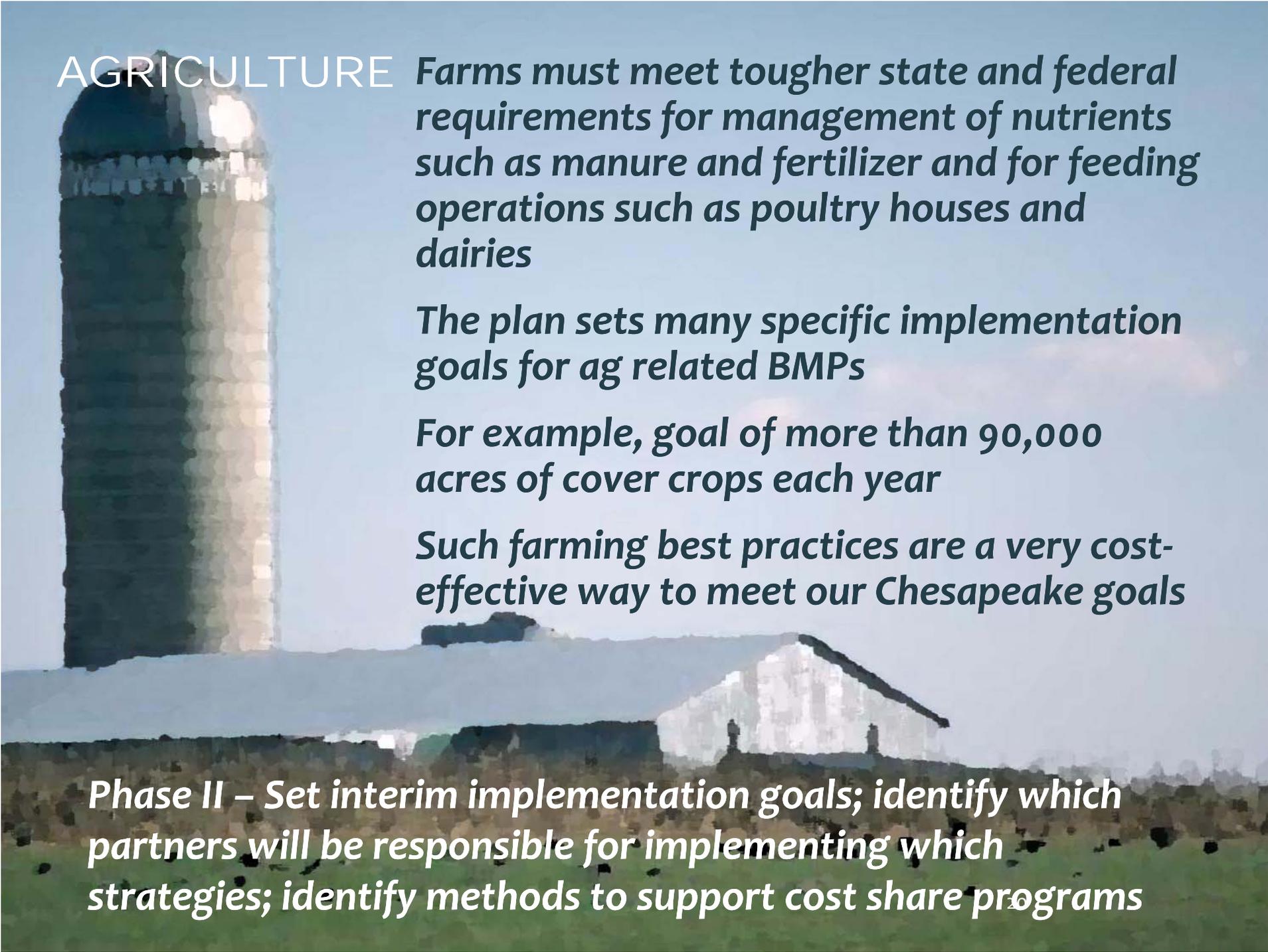
- ***Who will do what when***
- ***Resources, authorities, and needs***
- ***Clear and quantitative goals – local area N, P, S load targets, BMP implementation levels, and/or programmatic milestones***
 - ***2013 Milestones levels***
 - ***2017 60% levels***
 - ***2025 100% levels***

Draft due to EPA December 1st

Final due to EPA March 30, 2012

STRATEGIES FOR CLEANER WATER IN THE CHESAPEAKE

**What's in Delaware's Phase I
Watershed Implementation Plan?**

A photograph of a farm scene. On the left, a tall, cylindrical metal silo stands prominently. In the background, a large white barn with a dark roof is visible. The foreground shows a green field with some dark spots, possibly trees or bushes. The sky is a clear, light blue.

AGRICULTURE

Farms must meet tougher state and federal requirements for management of nutrients such as manure and fertilizer and for feeding operations such as poultry houses and dairies

The plan sets many specific implementation goals for ag related BMPs

For example, goal of more than 90,000 acres of cover crops each year

Such farming best practices are a very cost-effective way to meet our Chesapeake goals

Phase II – Set interim implementation goals; identify which partners will be responsible for implementing which strategies; identify methods to support cost share programs

WASTEWATER



Laurel Wastewater Treatment
Plant Upgrade - 2007

Major treatment plants include Bridgeville, Laurel, Seaford and Invista

Permitted nutrient loads will be reduced under Delaware's plan

Plants may be required to upgrade to higher levels of nutrient removal or find alternative disposal methods

Phase II – Identify when municipalities may require changes to their facilities, what options they may pursue, and potential funding mechanisms

ONSITE WASTEWATER

Revising statewide regulations which will require new inspection requirements, performance standards, and advanced treatment for all systems within 1,000 feet of Chesapeake tidal waters and wetlands

Eliminate a minimum of 6,074 systems by 2025



Phase II – Implement revised regulations; identify potential funding mechanisms to support upgrades and connections

STORMWATER

Revision of state Sediment and Stormwater regulations – emphasize green technologies, in-lieu fee to partially offset new development (2011-12)

Update Industrial Stormwater regulations (2012)

Renewal of DeIDOT/New Castle County municipal stormwater permit (MS4) – only such permit in watershed at this time (2013)

Stormwater retrofits in older urban areas won't be a focus because area is very rural – not cost-effective (EPA had wanted more)

Phase II – Follow through on above actions; training for consultants/delegated agencies; public education and outreach

LAND USE

Use state project reviews and comprehensive planning process to proactively direct growth – especially in Nanticoke corridor (Bridgeville-Seafood-Laurel)

Provide technical assistance on ordinances, incentives and funding mechanisms such as stormwater utilities

Phase II – Extensive outreach to local governments; ordinance reviews and recommendations; build-out analyses



ALL NEW NUTRIENT AND
SEDIMENT LOADINGS
MUST BE OFFSET

*Phase II – Continue
program development*



CREDITS



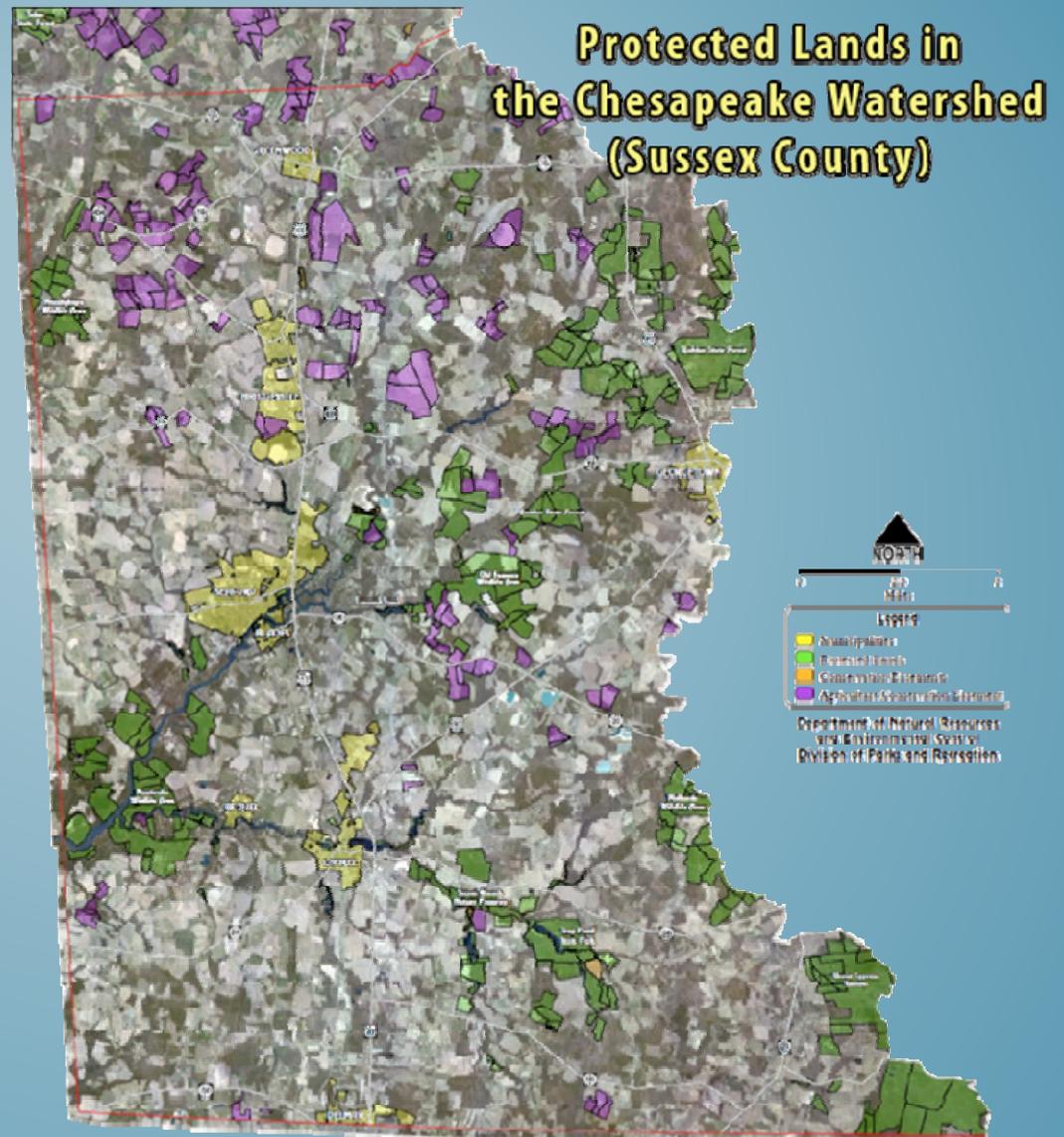
For example, the developer of a subdivision who can't meet stormwater and water quality targets on his site could pay a fee, perform an offset project nearby in the watershed, or buy credits from a nutrient "bank."

RESTORE CONSERVED LANDS

There are 40,000 publicly owned acres in Delaware's Chesapeake, including 3,000 acres of leased farmland

They offer many opportunities to improve water quality through restoration and improved stewardship practices

Phase II – Assess lands for restoration opportunities; plan for continued conservation; incorporate other publicly owned lands



CONSEQUENCES OF MISSING GOALS

We have developed contingencies for each sector (Example: regulating residential fertilizer use or tightening up wastewater requirements)

Missing goals could mean increased and direct regulation by EPA of

- *Industrial, municipal wastewater*
- *Municipal stormwater systems*
- *Agricultural operations*

And/or redirection of federal funds

Remember, the ultimate goal is cleaner waters.

WHY WE NEED TO WORK TOGETHER



We have to reduce the amounts of pollutants - nitrogen and phosphorous – in the watershed

Consequences of missing targets in 2017 and 2025 could be much more expensive to taxpayers than working together now

There are some relatively low-cost measures we can take to help meet goals

... And Delaware citizens value clean water and clean waterways!

THE VALUE OF ITS ECOSYSTEM TO US*

Contributes \$2 billion in annual economic activity from benefits!

Responsible for 47,000 jobs with \$1.2 billion in annual salaries!

The total value of natural goods and services in the Delaware portion of the watershed is
\$3.4 billion annually!

*Socioeconomic Value of the Chesapeake Bay Watershed in Delaware – University of Delaware Water Resources Agency
(March 2011)

PATH FORWARD

- *Public workshops and other outreach to specific sectors this summer*
- *Development of draft Phase II WIP and submit scenarios to EPA for modeling analysis this September*
- *Additional public workshops this fall to review and comment on Draft Plan*
- *Submit Draft Plan to EPA December 1st*
- *Submit Final Plan to EPA March 30th*

QUESTIONS/COMMENTS

Subcommittee Posters and sign-up sheets

- 1. Agriculture*
- 2. Wastewater/Onsite Wastewater*
- 3. Stormwater*
- 4. Land Use and Comprehensive Plans*
- 5. Public Lands*
- 6. Restoration*
- 7. Information Technology*

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