

# Overview of Agricultural BMPs and the Virginia Agricultural Cost-Share Program



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## **Presentation Overview**

- Introduction to Virginia's Agricultural BMP program
- Common agricultural BMPs and water quality connections

## Purpose of the VACS Program

- Water quality improvement program to reduce nonpoint sources of nutrient, sediment, and bacterial contamination through implementation of best management practices (BMPs)
  - Some partners address additional “resource concerns” but the VACS Program is much more limited in scope.
  - Example: NRCS promotes the so-called “SWAPA+HE” resource concerns (aka Soil-Water-Animals-Plants-Air+Human-Energy)
- Funded by the taxpayers of Virginia for BMPs
- Provides up to \$300,000 per participant/year
- Voluntary, non regulatory

## **Purpose Continued**

- Technical assistance, funding, and/or tax credit to support voluntary BMP implementation on agricultural lands
- Includes over 70 BMPs

## History of the VACS Program

- Officially began on July 1, 1984 to improve the quality of water entering the Chesapeake Bay and the Chowan River.
- Provided financial incentives to producers.
- Included 68 counties (2/3 of VA).
- 6 eligible BMPs
  - Conservation tillage
  - No-till pasture planting
  - Grass filter strips
  - Reforestation
  - Animal waste control facilities
  - Grazing land protection



A grass filter strip functions as a conservation buffer along a small stream. Photo by Lynn Betts, NRCS.



## History of the VACS Program

- By 1988, Program encompassed entire state, although financial incentives and eligibility varied:
  - Funds distributed to Soil and Water Conservation Districts (SWCDs) based on how agriculture affects water quality.
  - Local SWCD Board of Directors approved prioritization of applications.
  - SWCDs funded applications with greatest likelihood of improving water quality.

## Program History

- Increased emphasis on the Chesapeake Bay by policymakers seen through the years (currently a 70/30 split).
- Funding levels have gone up and down through time, but the long-term trend has been upwards:
  - 1987 = ~\$1,280,000
  - Record in 2024 = ~\$124 Million

## Eligibility for VACS

- Land used in a bona fide program of agricultural management and engaged in production of agricultural, horticultural or forest products for market;
- **Minimum of 5 acres (contiguous);**
- Must be **gross receipts in excess of \$1,000 per year** from the **verifiable** production or sale of agricultural, horticultural or forest products produced on the applicant's agricultural land for each of the **past 3 years.**



# Overview of Agricultural BMPs

- Cropland and Nutrient Management
- Animal Waste
- Stream Exclusion/Protection
- Forest Buffers



Credit: [today.oregonstate.edu](http://today.oregonstate.edu)

## **Cropland and Nutrient Management**

Potential water quality impacts include:

- Erosion of soil from crop fields with no or minimal cover
- Leaching or runoff of nutrients remaining in soil after harvest
- Runoff of nutrients applied at a rate, location, or time that cannot be taken up by plants

# Cropland and Nutrient Management

## Nutrient Management Planning

- Applying nutrients in the right place, at the right time, in the right quantity
- DCR staff write Nutrient Management Plans at no cost to the farmer
- Required for funding eligibility for many BMPs

# Cropland and Nutrient Management

## Cover Crops

- Establish vegetative cover after harvest and at other times fields might otherwise lie fallow
- Many options, widely used
- Reduce erosion, take up excess nutrients





# Cropland and Nutrient Management

## Precision Nutrient Management

- Reduce excess nutrient application and loss of nutrients through leaching and runoff
- Applicable to Nitrogen and Phosphorus, commercial fertilizers and manure application



## **Animal Waste**

Potential water quality impacts include:

- Runoff from manure and waste stored outdoors
- Poor timing of land application of waste due to lack of storage
- Manure and sediment runoff from concentrated animal areas exacerbated by lack of vegetation



## **Animal Waste BMPs**

Systems to manage waste from areas where livestock or poultry are confined

## **Animal Waste BMPs**

Reduce nutrient and pathogen runoff from waste, and reduce sediment runoff from denuded areas where livestock are concentrated

Allows waste to be collected and stored for use as fertilizer at appropriate rate/ time/ location

## **Stream Exclusion / Protection**

Potential water quality impacts include:

- Streambank erosion caused or exacerbated by livestock access
- Direct deposition of waste in waterways
- Overgrazed pastures and riparian areas are poor filters for pollutants carried by overland flow

## Stream Exclusion / Protection BMPs

- Eliminate or reduce livestock access to streams and other sensitive features
- Reduce streambank erosion, direct deposition and runoff of manure

## **Stream Exclusion / Protection BMPs**

- May be combined with enhanced grazing management and/or tree planting in the riparian buffer

## Forest Buffers

Potential water quality impacts include:

- Runoff from pasture and crop fields can more easily carry pollutants to the stream or sensitive feature
- Streambank erosion due to lack of stabilizing vegetation



## Forest Buffer BMPs

- Reduce sediment from streambank erosion, provide filtering of pollutants from overland flow
- 35'+ width is key for effective buffers

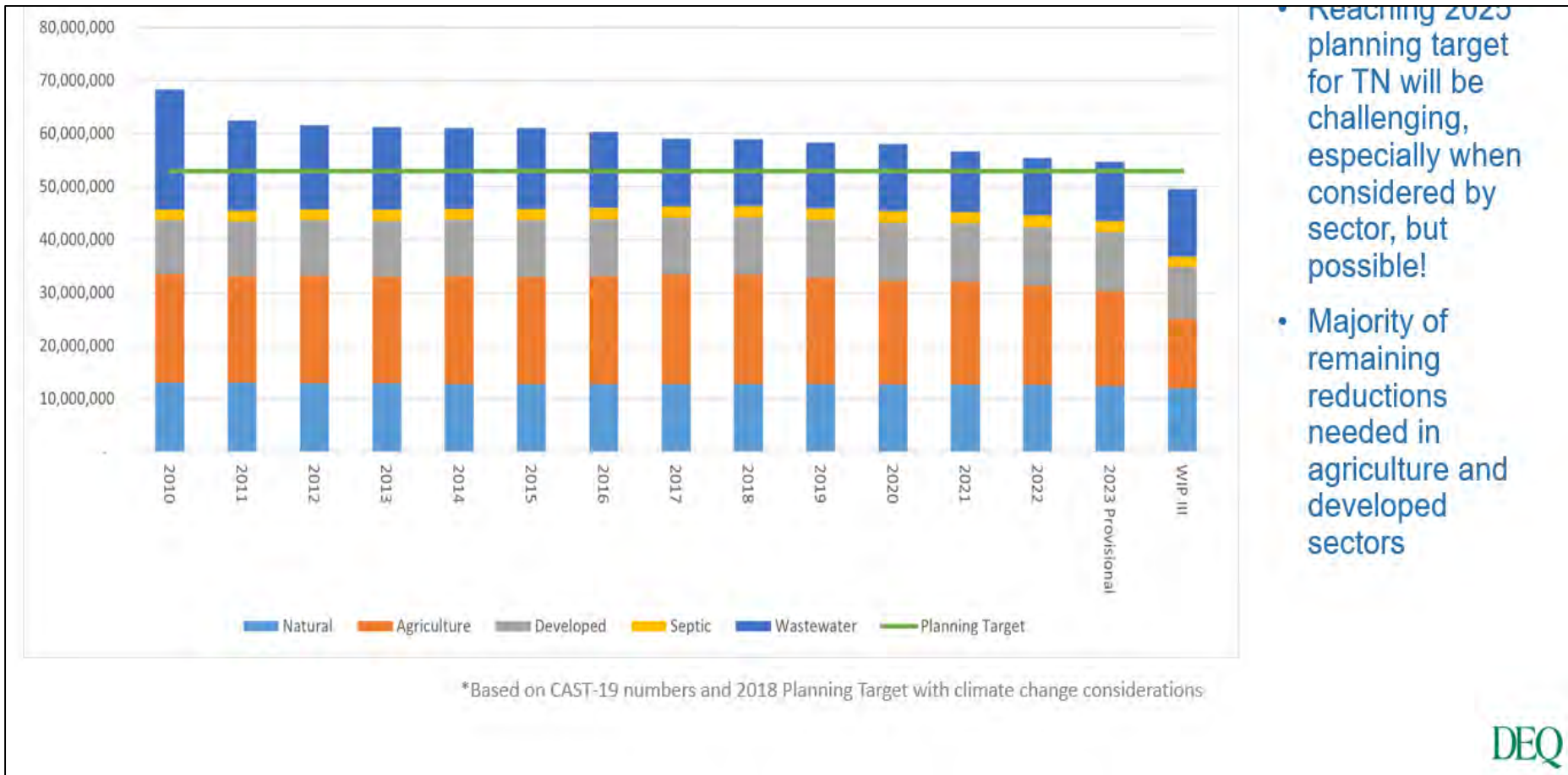


Credit: Chesapeake Bay Program

## Other Agricultural BMPs

- Agricultural Sinkhole Protection – Remove sources of pollution, establish buffer to filter pollutants from surface flow
- Fuel Storage Treatment – Remove leaking or possibly leaking underground farm fuel storage tanks, replace with aboveground storage
- Capping/Plugging of Abandoned Wells – Properly cap or plug abandoned wells to prevent groundwater pollution

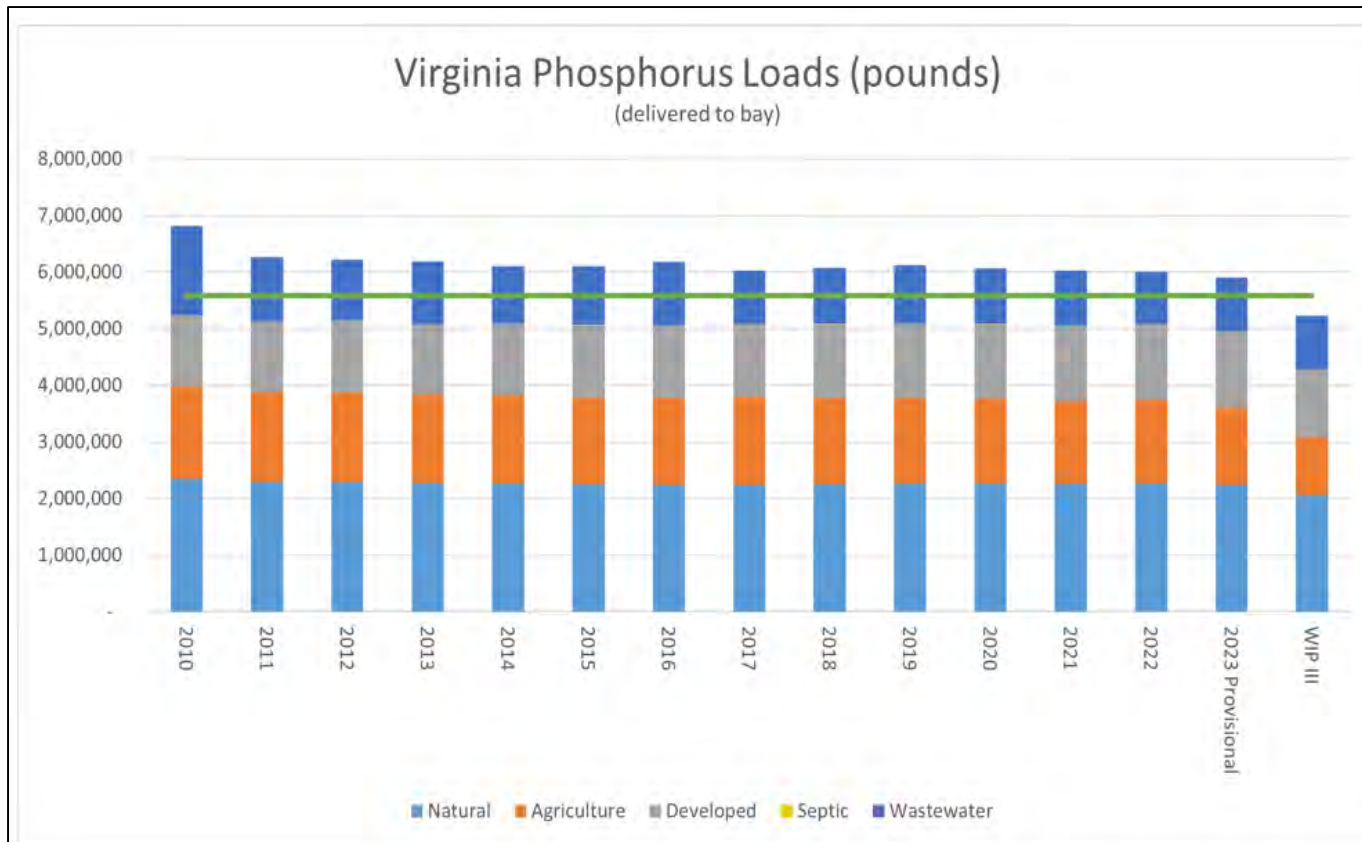
# Agriculture and Water Quality



- Reaching 2023 planning target for TN will be challenging, especially when considered by sector, but possible!
- Majority of remaining reductions needed in agriculture and developed sectors



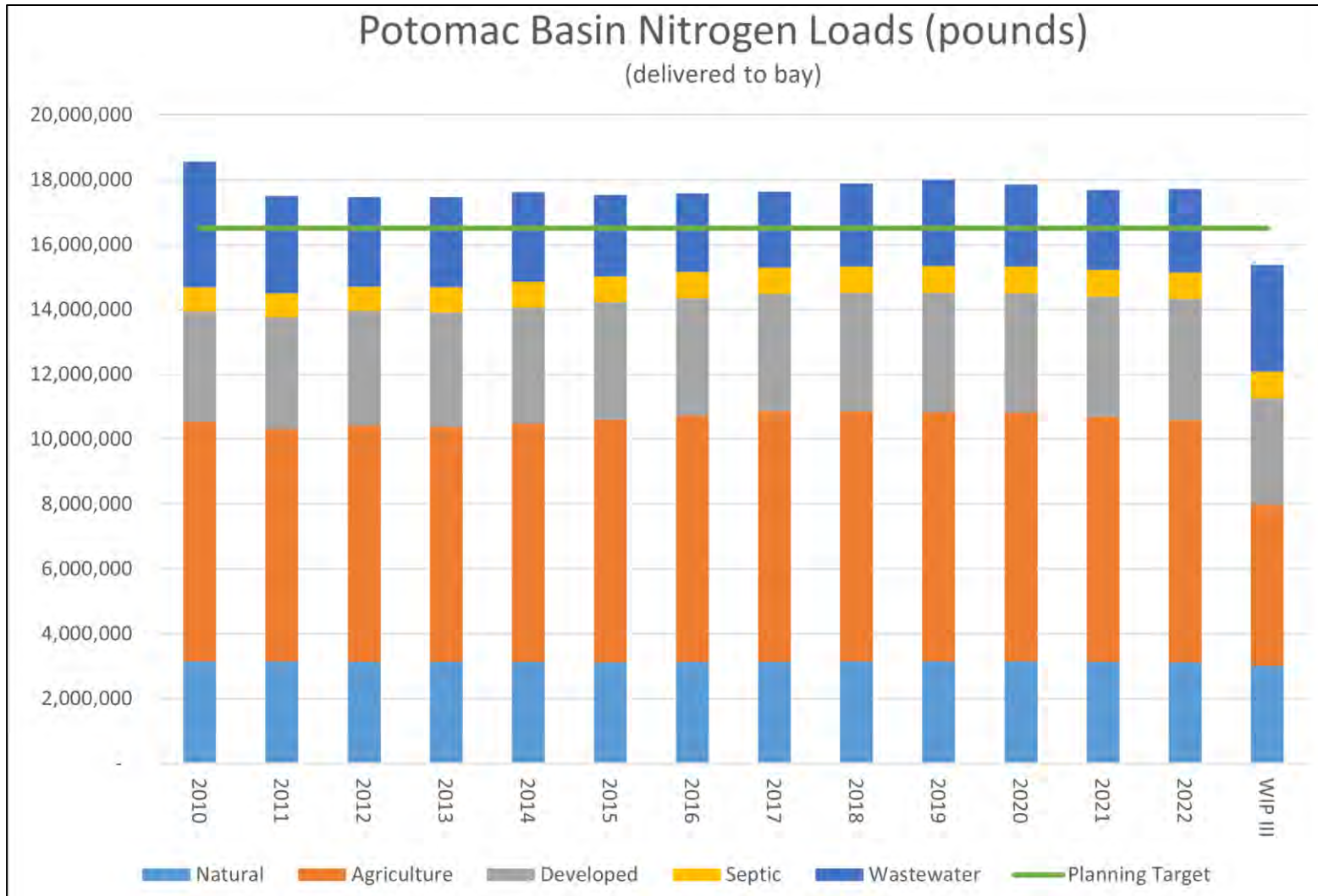
# Agriculture and Water Quality



\*Based on CAST-19 numbers and 2018 Planning Target with climate change considerations

- We are on track to achieve TP target reductions by 2025
- While 2022 Progress did not quite meet Planning Target goals, adjustments being made to lawn fertilizer reductions in CAST-23 should get us there
- Majority of remaining reductions needed in agriculture sector

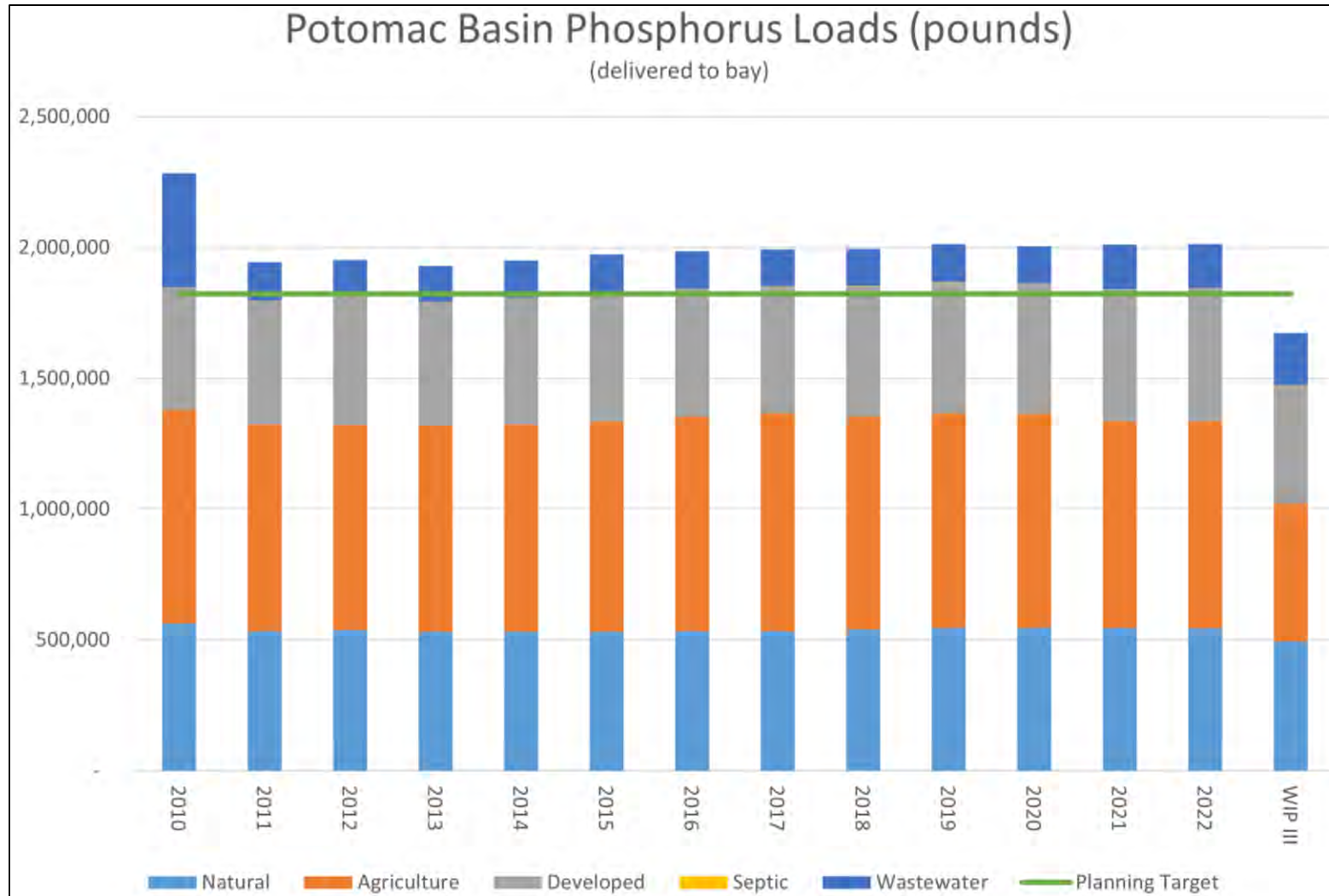
# Agriculture and Water Quality



Upward trends attributed to population growth and land use change

All information on this slide provided by Virginia DEQ

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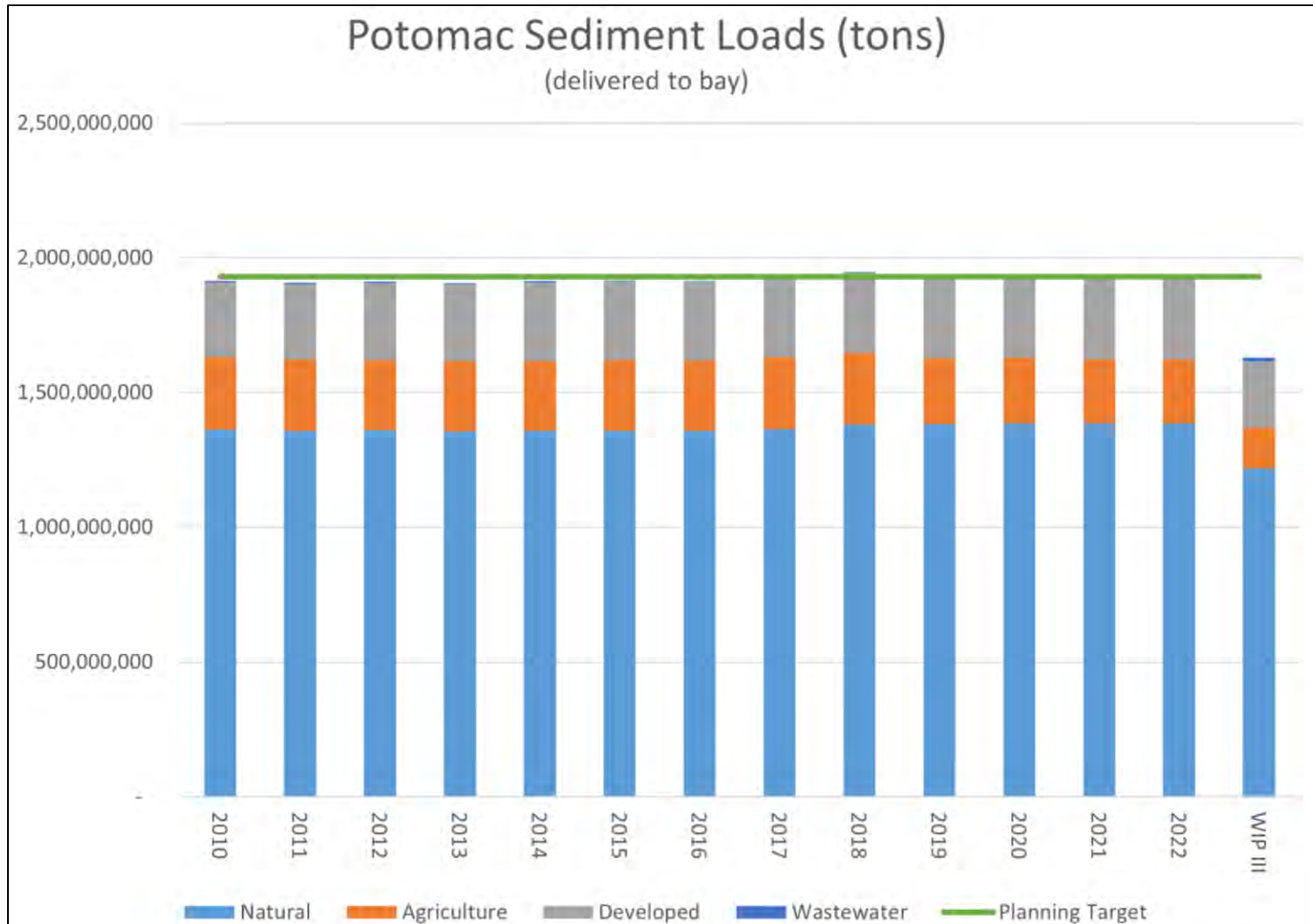


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# VACS: A Partnership

Partnership between SWCDs and DCR per Code of Virginia §10.1-104.1(B)

*The Department shall be assisted in performing its nonpoint source pollution management responsibilities by Virginia's soil and water conservation districts. Assistance by the soil and water conservation districts in the delivery of local programs and services may include (i) **the provision of technical assistance** to advance adoption of conservation management services, (ii) **delivery of educational initiatives** targeted at youth and adult groups to further awareness and understanding of water quality issues and solutions, and (iii) **promotion of incentives to encourage voluntary actions by landowners** and land managers in order to minimize nonpoint source pollution contributions to state waters.*

## Funding and Technical Assistance

- Funding and technical assistance for Virginia's Agricultural BMP Program are provided through local Soil & Water Conservation Districts



## **Funding and Technical Assistance**

Other sources of technical expertise and funds:

- USDA (Natural Resources Conservation Service, Farm Service Agency)
- Department of Forestry
- DEQ-administered CWA Section 319(h) grants
- Non-profit organizations





Questions?

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