



Virginia's Agricultural Cost-Share Program to Improve Water Quality

Study resolution

- Review the Virginia Agricultural Best Management Practices Cost-Share (VACS) program*
 - nonpoint source pollution assessment
 - process to allocate funds to soil and water conservation districts
 - policies and processes to award funds
 - VACS-related technical assistance
 - verification of compliance with VACS requirements

*JLARC study resolution, authorized December 16, 2025.

Primary research activities

- Analyzed data related to VACS funding, awards, and agricultural best management practices (BMPs)
- Interviewed Department of Conservation and Recreation (DCR) staff, district staff, environmental and agricultural stakeholder groups, and subject matter experts from the federal government and other states
- Reviewed scientific research about agricultural BMPs and nonpoint source pollution reduction

Primary research activities (continued)

- Surveyed soil and water conservation district staff, district board of directors members, and individuals who own and/or lease farmland (i.e., producers)
 - Survey of district staff – 72% response
(173 of 239 notified with assistance from VACDE* and VASWCD**)
 - Survey of district board members – 56% response
(138 of 248 notified with assistance from VASWCD**)
 - Survey of producers – 10% response
(795 of ~8,100 notified with assistance from Farm Bureau and other stakeholder groups)

Note: JLARC surveys administered in spring & summer 2026.

*VACDE = Virginia Association of Conservation District Employees

**VASWCD = Virginia Association of Soil and Water Conservation Districts

In brief

- VACS program has grown substantially, resulting in agricultural pollution reduction recognized in the Chesapeake Bay model
- VACS “fully” or “substantially” exhibits most characteristics of an effective incentive program

Characteristics of an effective incentive exhibited* by VACS program	
<i>Purpose & outcomes</i>	3 of 3
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<i>Program implementation & oversight</i>	2 of 3

- A few aspects of VACS could be further improved related to program funding, outreach, design, and verification and oversight

*Program either “fully” or “substantially” exhibits characteristics. See Chapter 2 of written report for more detail.

In this presentation

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Section 1

Background

VACS program seeks to incentivize producers to reduce pollution from agricultural land

- Voluntary program that provides financial incentives for agricultural producers to implement BMPs* to reduce pollution in Virginia's streams, rivers, lakes, etc.
 - Producer must implement at least one of 64 approved BMPs
- Eligible producers have (i) 5 or more acres of agricultural land and (ii) gross receipts of \$1,000+ each of the prior 3 years
- State funds *some* or *all* of the cost to implement the BMP (depending on the BMP); producer receives payment upon district verification of proper implementation

*BMPs = Best management practices

BMPs vary widely and have different cost-share amounts and lifespans

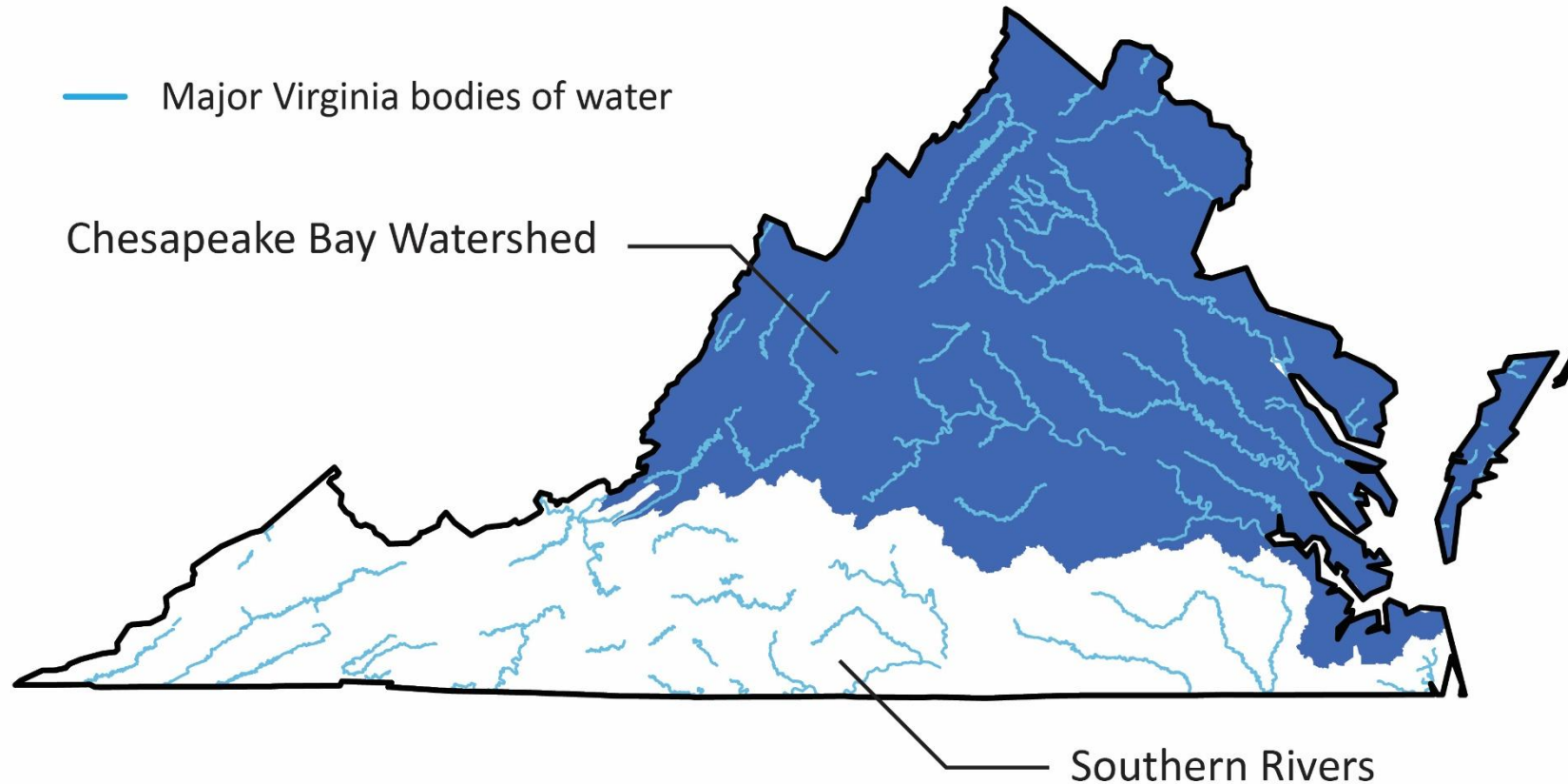
Example BMP type*	Description	Cost-share amount	Lifespan
Cover crops	Not-for-harvest crops planted to reduce erosion, runoff, & excess nitrogen while improving soil health.	\$20–\$100 per acre	1 year
Livestock stream exclusion	Construction of fences and watering systems to keep animals out of streams. VACS share based on distance from stream and lifespan.	60%–100% of cost	10–15 years
Woodland buffer tree planting	Tree/shrub planting to reduce erosion & provide habitats. Per-acre reimbursement based on tree/shrub type and lifespan.	95% of cost + \$100–\$500/acre	10–15 years

*Cover crops, nutrient management (e.g., splitting applications of nitrogen fertilizer), and tillage management (e.g., limiting soil disturbance prior to planting to reduce erosion) are the most frequently implemented BMPs through VACS in recent years.

VACS is one of state's primary water quality programs and is critical to state's commitments to reduce agricultural pollution

- Pollution from agriculture is a key source of contaminants that reduce water quality, including in the Chesapeake Bay
 - Nearly 30 percent of Virginia's land area is agricultural
 - Nitrogen, phosphorus, and sediment from agriculture can be especially harmful to the Chesapeake Bay and other bodies of water throughout the state
- VACS is an important part of state's effort to improve and maintain water quality
 - Federal government requires Virginia and other states in the Chesapeake Bay watershed to reduce pollution to certain levels
 - State has also set its own water quality goals for all regions

Majority of state's water is in the Chesapeake Bay watershed



Source: JLARC analysis of watershed map from the Virginia Department of Wildlife Resources and Virginia Department of Environmental Quality.

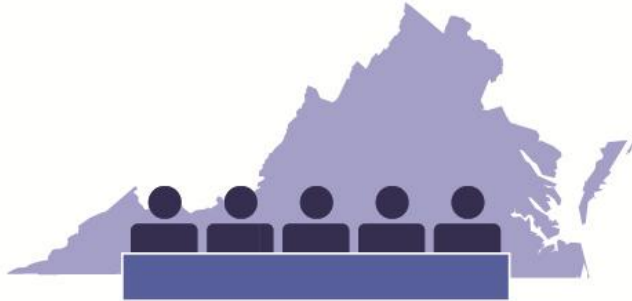
VACS has helped Virginia make progress toward its water quality goals, but more reductions are needed

- Since 2017, Virginia has completed almost half of the nitrogen and phosphorus reductions needed, and about one-quarter of the sediment reductions needed, to achieve its Chesapeake Bay goals*
- Substantial percentage of remaining Chesapeake Bay pollutant reductions need to come from the agricultural sector
 - Nitrogen – 73%
 - Phosphorus – 91%
- Pollution reduction also needed to meet Virginia-specific water quality goals
 - Chesapeake Bay watershed – 34% of bodies of water are impaired
 - Southern rivers area – 22% of bodies of water are impaired

*Phase III Chesapeake Bay Watershed Implementation Plan goals.

State and districts work together to administer VACS

VIRGINIA SOIL AND WATER CONSERVATION BOARD



- Sets VACS policy
- Allocates VACS funding

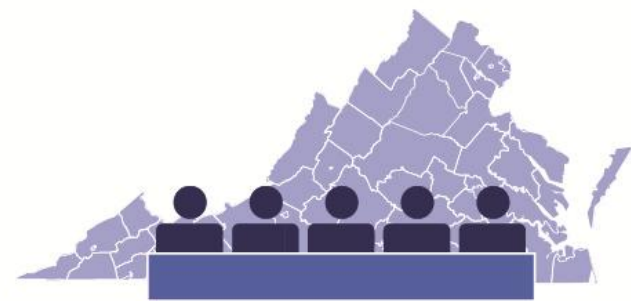


DEPARTMENT OF CONSERVATION AND RECREATION

- Implements VACS policy as set by board
- Oversees district implementation of VACS
- Estimates future VACS funding needs
- Administers/distributes VACS funds to districts



SOIL AND WATER CONSERVATION DISTRICTS (47)



BOARD OF DIRECTORS

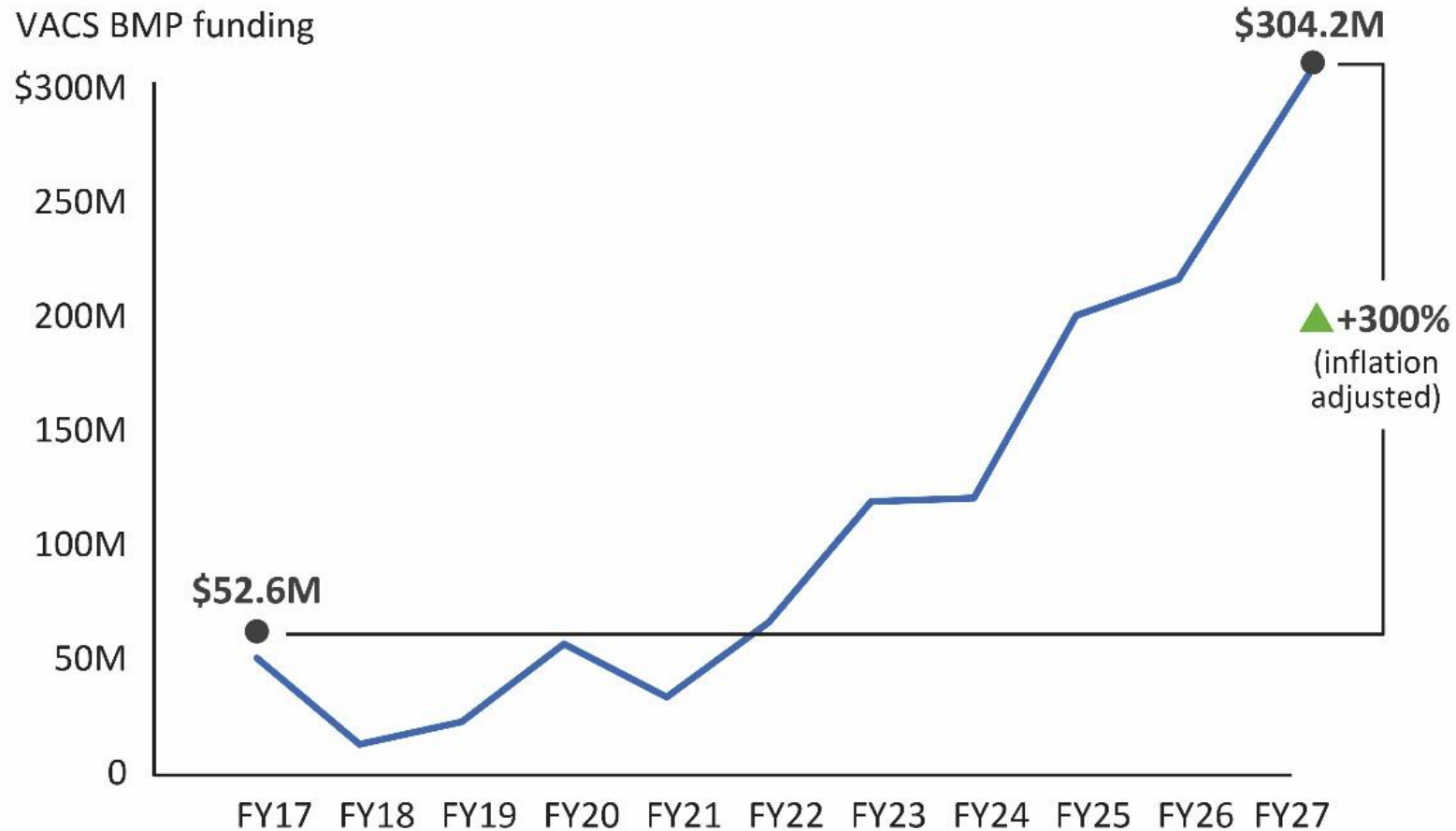
- Set local priorities
- Approve local cost policies
- Make VACS award decisions



DISTRICT STAFF

- Identify and assist eligible VACS recipients
- Provide technical assistance
- Ensure appropriate VACS project implementation

General Assembly has substantially increased VACS funding in recent years



Source: VACS cost-share policy documents.

Note: VACS allocation amounts are for BMPs.

Section 2

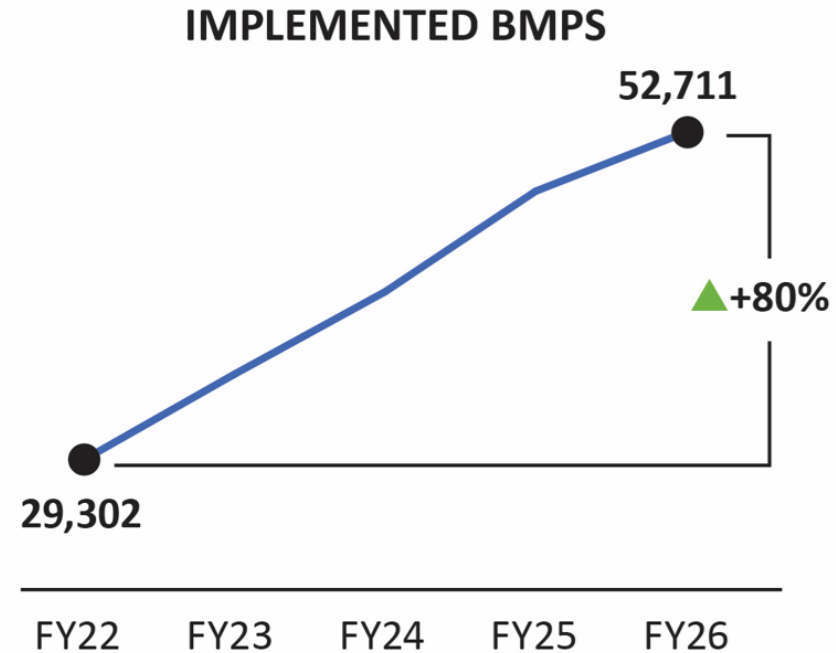
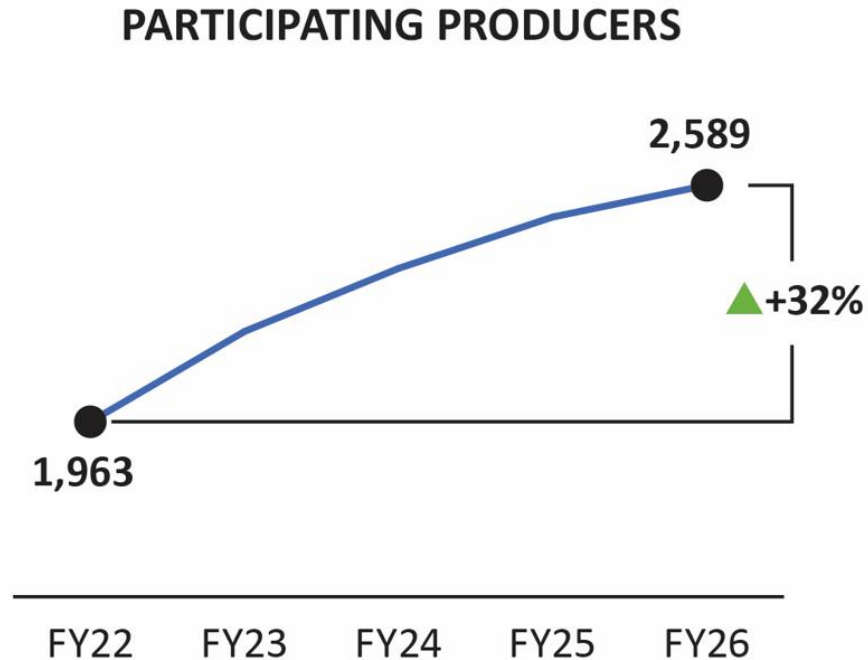
VACS effectiveness

Findings: Pollution reduction and cost effectiveness

VACS has helped fund an increasing number of BMPs, which are shown to reduce pollution when implemented properly.

Prioritizing cost-effective BMPs for VACS awards will become increasingly important if VACS funding declines.

Over the last five years, VACS funding increases have led to more program participation and more BMP implementation



Source: JLARC analysis of VACS BMP implementation data from DCR.

Scientific research has validated nearly all BMPs as effective at reducing agricultural pollution

- 62 of the 64 BMPs approved by VACS are credited in the federal government's Chesapeake Bay Program model as reducing nitrogen, phosphorus, and/or sediment*
- To receive pollution reduction credit in the model, government agencies and experts review scientific research confirming that the BMP reduces pollution when implemented according to specifications

*The two BMPs approved by VACS that do not receive credit in the Chesapeake Bay model are rarely implemented through VACS (sinkhole protection and resource plan).

Though data exists on BMPs' *pollution reduction effectiveness*, it is unclear which BMPs are most *cost-effective*

- High VACS funding levels in recent years have allowed many districts to fund *all* or *nearly all* eligible projects, reducing importance of prioritization
- If VACS funding declines, districts need information about the relative cost-effectiveness of BMPs to help them decide among projects
- State has mechanisms to help encourage cost-effective use of VACS funds (e.g., CEF scores* and funding allocations based on pollution risk)
- State does not currently have a ranked list of the cost effectiveness of VACS BMPs, though JLARC worked with DCR on a preliminary analysis**

*CEF scores help identify which applications are going to reduce pollution most effectively on a given property.

**Maintenance of existing BMPs, continuous low-till, and roof runoff management for livestock facilities appear highly cost-effective.

Cost-effectiveness will become increasingly important if VACS funding declines, which could happen in the next few years

- Future VACS funding may change over time
- VACS funding needs depend on the state's pollution reduction goals and progress made toward achieving them
 - Funding may *decrease* if Virginia achieves Phase III Chesapeake Bay goals and transitions from implementing new BMPs to maintaining or replacing existing BMPs
 - Funding may *increase* if Virginia sets new Phase IV Chesapeake Bay goals that require implementation of many new BMPs
- Revenue available for VACS funding is largely dependent on general fund surplus revenue (less than \$10 million annually is dedicated recordation tax revenue)

Recommendation #1

Secretary of Natural and Historic Resources should require DCR and DEQ to develop a ranked list of the cost-effectiveness of each VACS BMP, then provide it to districts to help inform award decisions.

Section 3

VACS program needs & funding

State uses two assessments to estimate VACS program funding needed and allocate it among the 47 districts

- Agricultural needs assessment
 - Estimates state funding needed to implement remaining BMPs to meet Phase III Chesapeake Bay goals (set in 2017)
 - Results in estimated total funding for VACS program
- Nonpoint source pollution assessment
 - Uses rigorous analysis* to assign a pollution risk level (high, medium, or low) across districts (by “hydrologic unit”)
 - Results inform allocation of funds across districts
- Total funds allocated
 - 70% to Chesapeake Bay Watershed, 30% rest of the state
 - Then 50% to high-, 30% to medium-, and 20% to low-risk areas

*Nonpoint source pollution assessment relies on the Generalized Watershed Loading Function model, developed by Cornell University and adapted to Virginia with assistance from Virginia Tech.

Findings – Program needs and funding

Assessments appropriately use data and relevant information and prioritize higher risk areas.

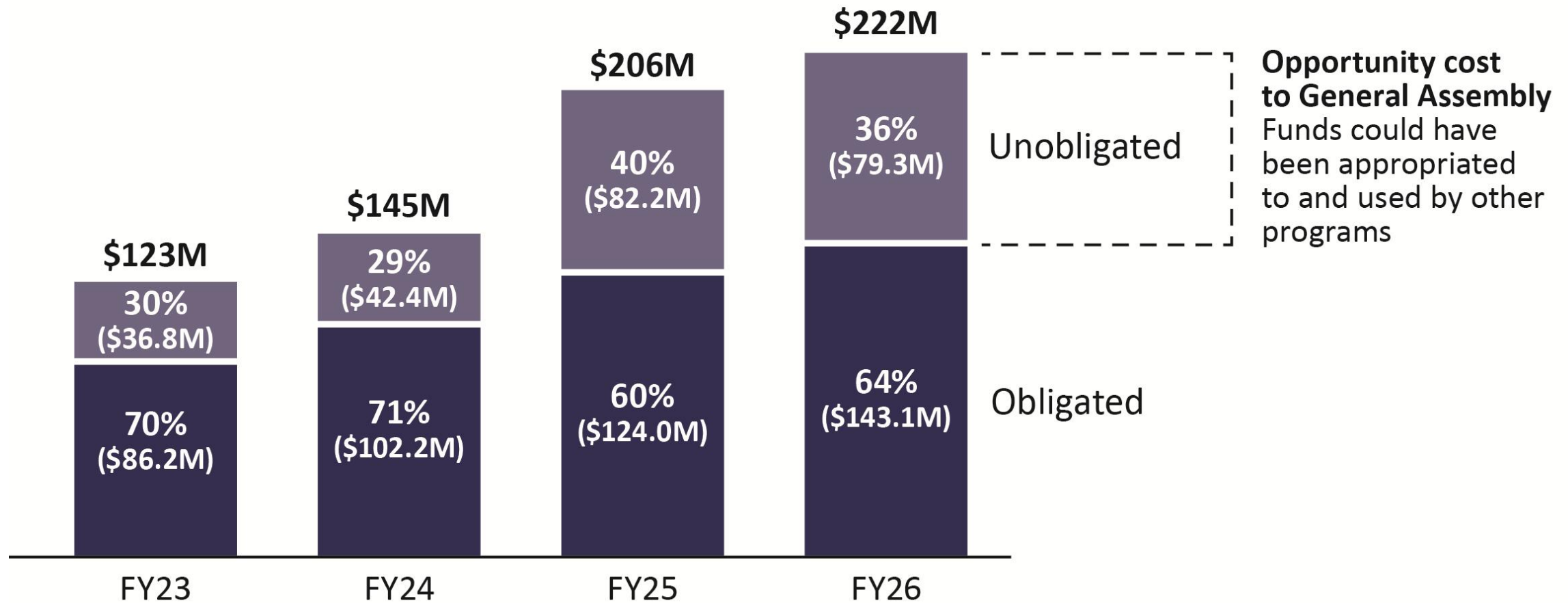
Agricultural needs assessment, however, uses optimistic BMP implementation assumptions, resulting in unobligated funds.

Agricultural needs assessment is based on relevant data but assumes all needed BMPs will be implemented

- Agricultural needs assessment is based on
 - How many BMPs still need to be implemented to meet state deadline
 - Estimated cost to implement these BMPs (adjusted for inflation)
 - Other available funds, including appropriated but unobligated* funds
- Though considering remaining BMPs to be implemented is reasonable and aligns with state policy, the assessment assumes districts can find enough producers to *actually* implement the needed BMPs

*Obligated VACS funds have (1) a producer who has agreed to implement the BMP(s), (2) district board of directors' approval, and (3) a signed contract where the producer committed to proper implementation.

Assuming all needed BMPs will be implemented has proven optimistic, leading to appropriated but unobligated funds



*Obligated VACS funds are “rolled over” into subsequent fiscal years to still be available for the program.

VACS appropriations could more closely reflect demonstrated BMP implementation in recent years

	Actual VACS funding amount	More realistic VACS funding amount*	Hypothetical amount made available to fund other budgetary needs
FY25	\$206.2 M	\$154.2 M	\$52.0 M
FY26	\$222.4 M	\$173.2 M	\$49.2 M

*Scenario shown adjusts appropriation amount downward by half the difference between the appropriation amount and obligated amount in the prior year.

Policy option #1

The General Assembly could adjust VACS appropriations to account for recent differences between calculated needs and actual obligations.

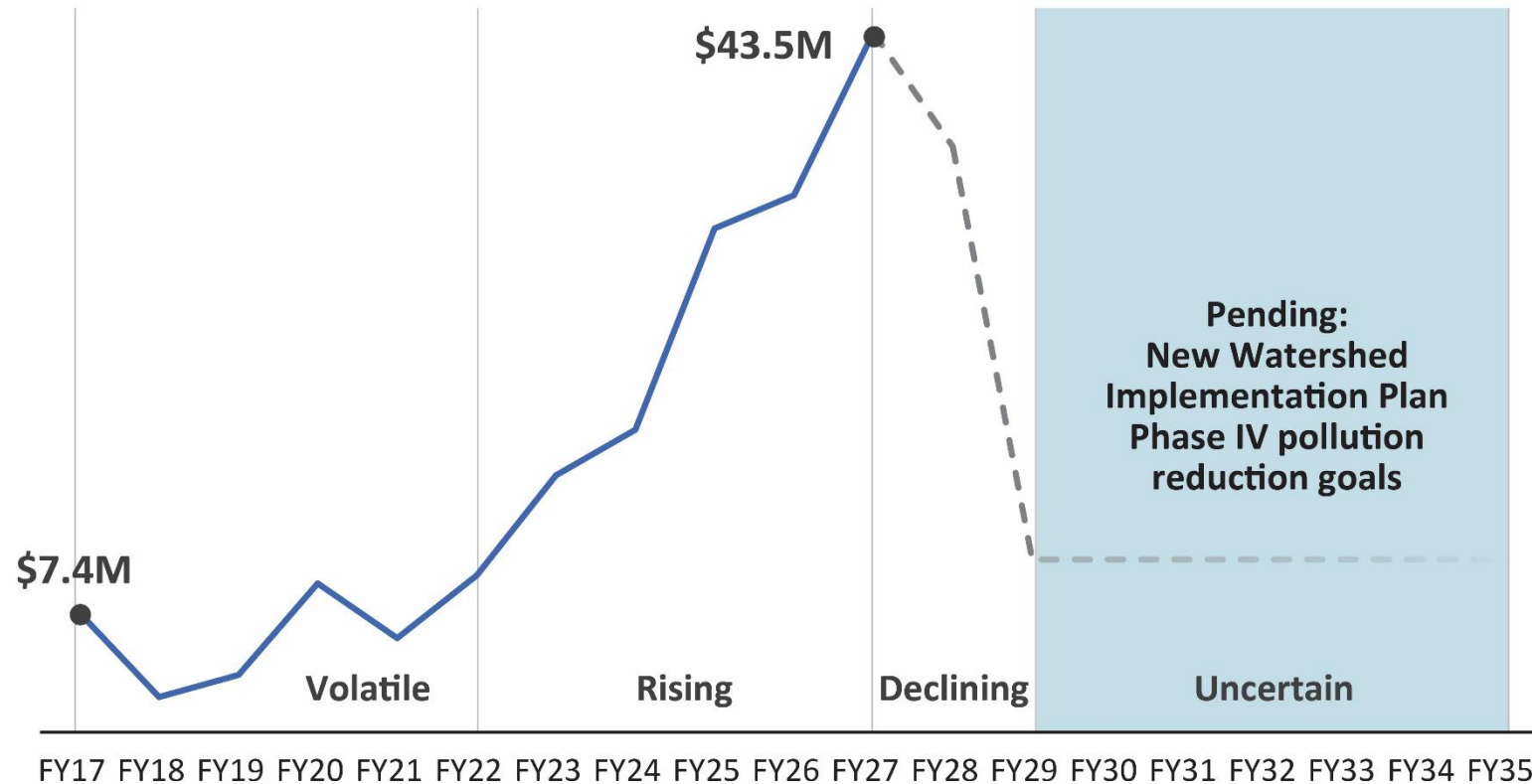
Finding – VACS technical assistance funding

The technical assistance (TA) funding districts receive to administer VACS fluctuates, which has negatively affected the predictability of funding and some districts' ability to hire staff.

Current TA funding amounts appear sufficient for many districts

- Districts receive TA funding to administer VACS
- Recent VACS funding increases have helped ensure districts receive adequate VACS funding
 - 62 percent of district staff said they received “enough” or even “too much” TA funding in JLARC survey
- Some district staff reported staffing capacity challenges, likely because of recent staff turnover (rather than funding limitations)
 - Challenges are not widespread, but DCR could consider ways to further support districts experiencing challenges

TA funding has fluctuated over time and is uncertain moving forward



Source: JLARC analysis of VACS cost-share policy documents and 2026 agricultural needs assessment.

Changes to improve TA funding predictability could be considered and may be addressed by current state workgroup

- Nature of the VACS program makes providing stable and predictable funding difficult because state's pollution reduction goals change over time
- TA funding changes could be “smoothed” using a rolling, multi-year average, but this could cause TA funding to increase more slowly than BMP funding
- State workgroup currently reviewing Virginia's Water Quality Improvement Fund will likely recommend changes related to TA funding
 - Findings and recommendations expected in fall 2026

Section 4

Producer outreach

Outreach is key to raising producer awareness and participation in VACS

- Districts use a wide range of outreach (e.g., district or community-hosted events, social media, phone calls & text messages, farm visits)
- Producers appear to have at least some degree of awareness about VACS, according to JLARC surveys
 - 80% of responding producers indicated at least some awareness of VACS
 - Only 15% of district staff thought lack of producer awareness was why producers may not be participating

Finding – District outreach & producer participation

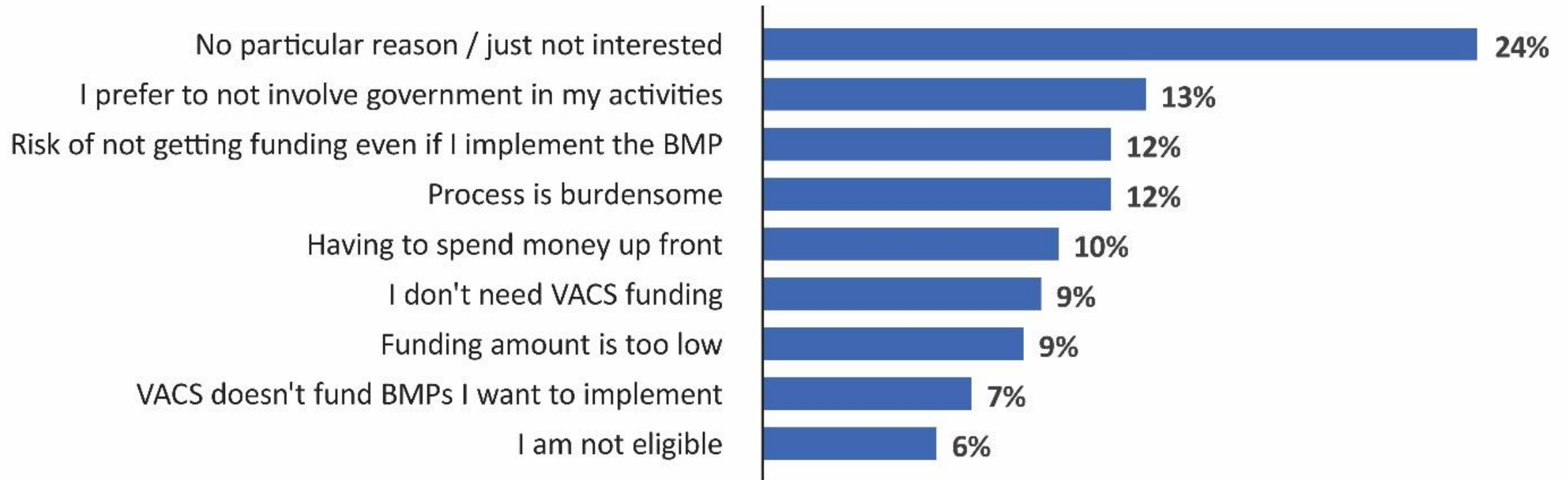
Districts and DCR conduct a wide range of outreach, but few districts have used available local and state data to systematically identify potential new participants.

Many more producers are likely eligible for VACS, but how many would participate is unclear

- Up to 35,000 Virginia farms could potentially be VACS-eligible, according to USDA* census data
- About 5,400 producers participated (or contracted) with VACS in the last five years
- Though a substantial number of additional producers likely *could* participate, it is unclear how many *would* participate
 - Some district staff believe most interested producers already participate

* U.S. Department of Agriculture

Producers cited a wide range of reasons why they have not yet participated in VACS



Source: JLARC survey of Virginia agricultural producers (summer 2026).

Note: Respondents could pick as many reasons as applicable. About one-fifth of respondents also answered “other;” review of these reasons did not yield additional themes.

Local and state data sources could help identify non-participating producers

- One district has reported using local tax records to identify new producers to contact
- Coordinated analysis of state and local data could help districts more systematically identify non-participants, then conduct targeted outreach
 - “Overlay” and integrate information from tax and land use databases with GIS data on environmental risks, farmland, and bodies of water
- Analysis could be conducted by DCR and refined based on local expertise
- May be challenging for multi-jurisdictional districts to access local data

Recommendation #2

The Virginia Soil and Water Conservation Board should implement a pilot program where selected districts and DCR work together to:

- analyze local and state data to identify potentially eligible producers not participating in VACS
- facilitate districts' use of results to maximize recruitment of eligible non-participants

Section 5

Program design & awards

Finding – VACS program design

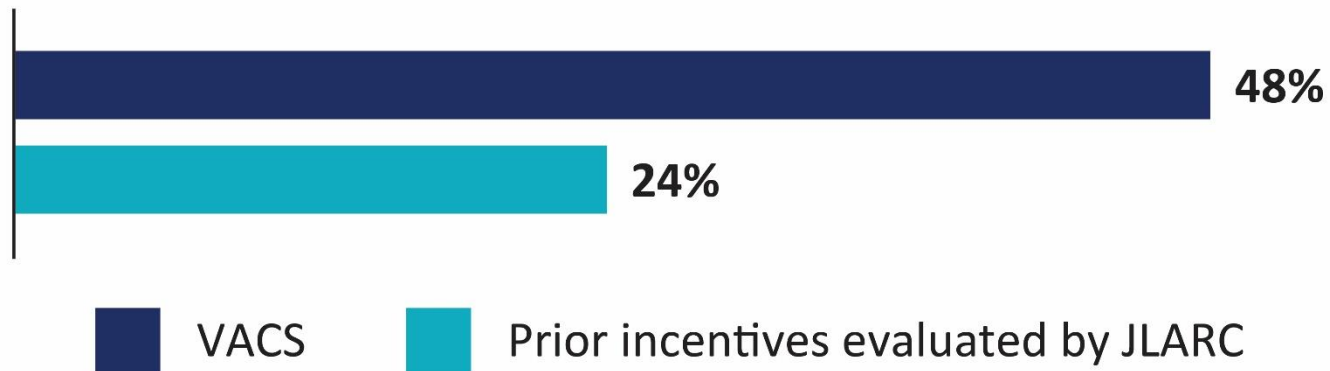
VACS appears to effectively incentivize producers to participate, but the most cost-effective BMPs could be further incentivized.*

*After a ranked list of BMP cost-effectiveness is developed (Recommendation 1).

VACS appears to effectively incentivize producers when compared to other state incentives evaluated by JLARC

If funding had not been available, I probably would...

Have NOT proceeded with the project



Source: JLARC survey of Virginia agricultural producers (summer 2026) and summary of prior surveys conducted for reviews of Business Location and Expansion Incentives (2023), Custom Incentives (2024), and Workforce and Industry Incentives (2025).

BMP cost-share rates appear adequate, and offering higher rates seems to encourage use of more effective practices

- Inadequate cost-share rates were not among producers' top reasons for not participating in VACS
- Most district staff (75%) and district board members (86%) indicated cost-share rates were adequate to incentivize participation
- Certain types of BMPs use a scaled cost-share rate structure to incentivize a more effective BMP version (i.e., wider buffer, longer lifespan)
 - Producers implement the more effective version of the BMP more frequently than the less effective version

Recommendation #4

Virginia Soil and Water Conservation Board should direct DCR to conduct a pilot program to temporarily increase cost-share rates for the most cost-effective BMPs.

Finding – Prioritizing eligible VACS projects

Two-thirds of districts have not recently had to prioritize the projects selected for VACS awards, but identifying and selecting the most cost-effective projects will be more important if available funding declines.

Many districts have not recently prioritized projects, including some districts that used their full funding allocation

- 32 of the 47 districts reported they did not use a prioritization process to determine VACS awards in FY26
- Some districts used their full funding allocation but did not prioritize among projects
 - Only 7 of the 17 districts with funding requests that exceeded their allocations reported prioritizing applications
- Overall, lack of prioritization is not problematic with current funding levels but will become more important if VACS funds decline

State and local policies do not result in cohesive process that ensures prioritization of most cost-effective BMPs

- State policies are currently too broad to effectively prioritize awards
 - Nearly all eligible VACS applications qualify as priorities
 - 22 BMPs do not have to meet state priorities
- District-specific priorities are the main determinant of VACS awards but vary across districts
 - Districts' local water quality priorities are important, but some districts prioritize projects that may not be the most cost-effective
 - Districts do not consistently use CEF scores* to determine awards

*CEF scores are automatically generated by DCR's data system and help identify which applications are going to reduce the most pollution in a cost-effective manner on a given property.

Recommendation #5

The General Assembly may wish to consider directing DCR to revise the process that districts use to select the applicants who receive VACS funding to better ensure the most cost-effective BMPs are consistently prioritized.

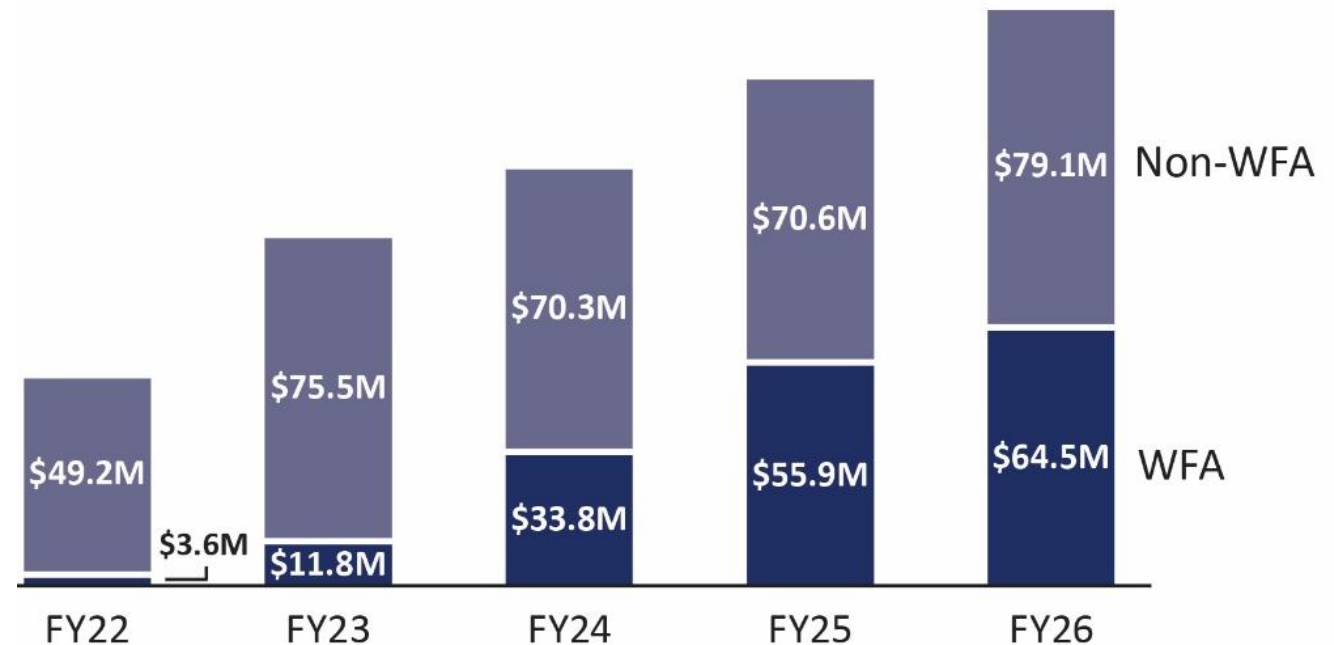
Finding – Whole Farm Approach and reliance on annual BMPs

Relatively new Whole Farm Approach (a subprogram of VACS) has helped implement more BMPs, but separate funding may prioritize Whole Farm BMPs when they are not the most cost-effective practices.

Large portion of VACS funding is used on annual BMPs—in part because of the Whole Farm Approach—which has future fiscal implications.

Whole Farm Approach (WFA) has helped implement more BMPs in recent years

- Encourages producers to implement cover crops & nutrient management
- Streamlines process and grants additional flexibility for producers
- WFA has grown to represent a substantial portion of total VACS funding



Source: JLARC analysis of VACS BMP implementation data from DCR.

Separate funding allocation prioritizes WFA over other BMPs

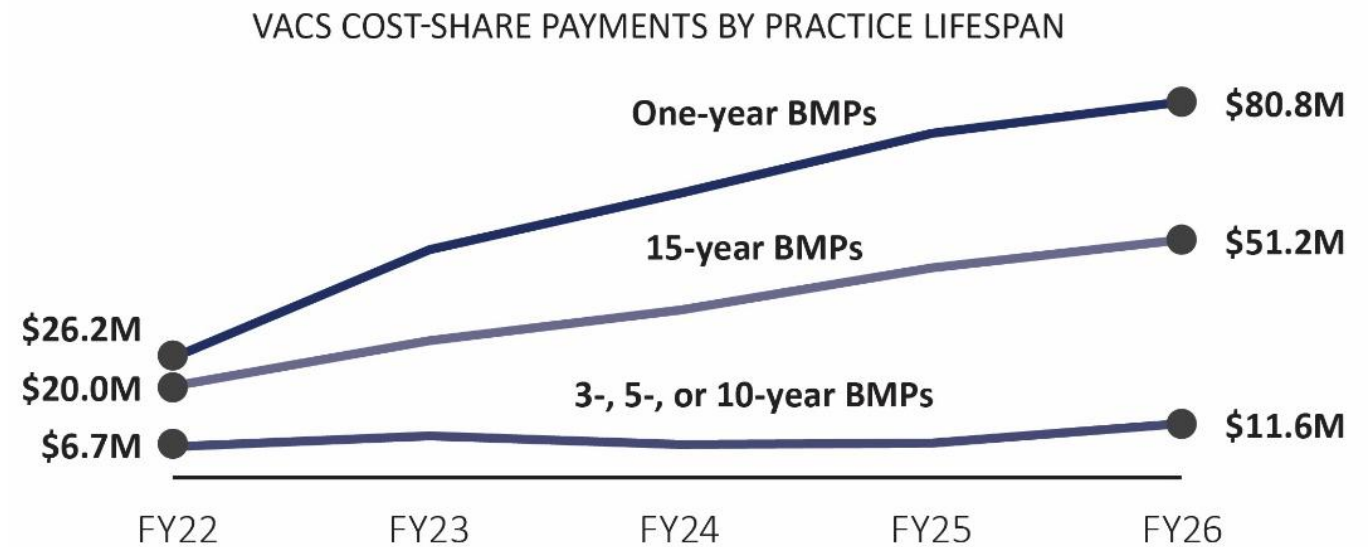
- WFA is funded through a separate allocation from all other VACS BMPs
 - \$50 million of \$207 million in total VACS funding (FY25)
- Separate allocation has been helpful for Southern Rivers districts that spent all their non-WFA VACS funding
- Separate allocation, though, results in WFA BMPs not being assessed against other BMPs to determine most cost-effective BMP(s) to reduce pollution

Policy option #2

The General Assembly could consider directing the Virginia Soil and Water Conservation Board to consolidate funding for the Whole Farm Approach with funding used for other BMPs in the VACS Program.

Reliance on “annual” BMPs will require around \$81 million each year to maintain reductions already achieved

- Much of the recent growth in BMPs has come from “annual” or one-year BMPs, especially cover crops
- Virginia receives one year of pollution reduction credit for an annual BMP
- Same BMPs will need to be continued—or replaced with multi-year practices—to maintain pollution reductions



Source: JLARC analysis of VACS BMP implementation data from DCR.

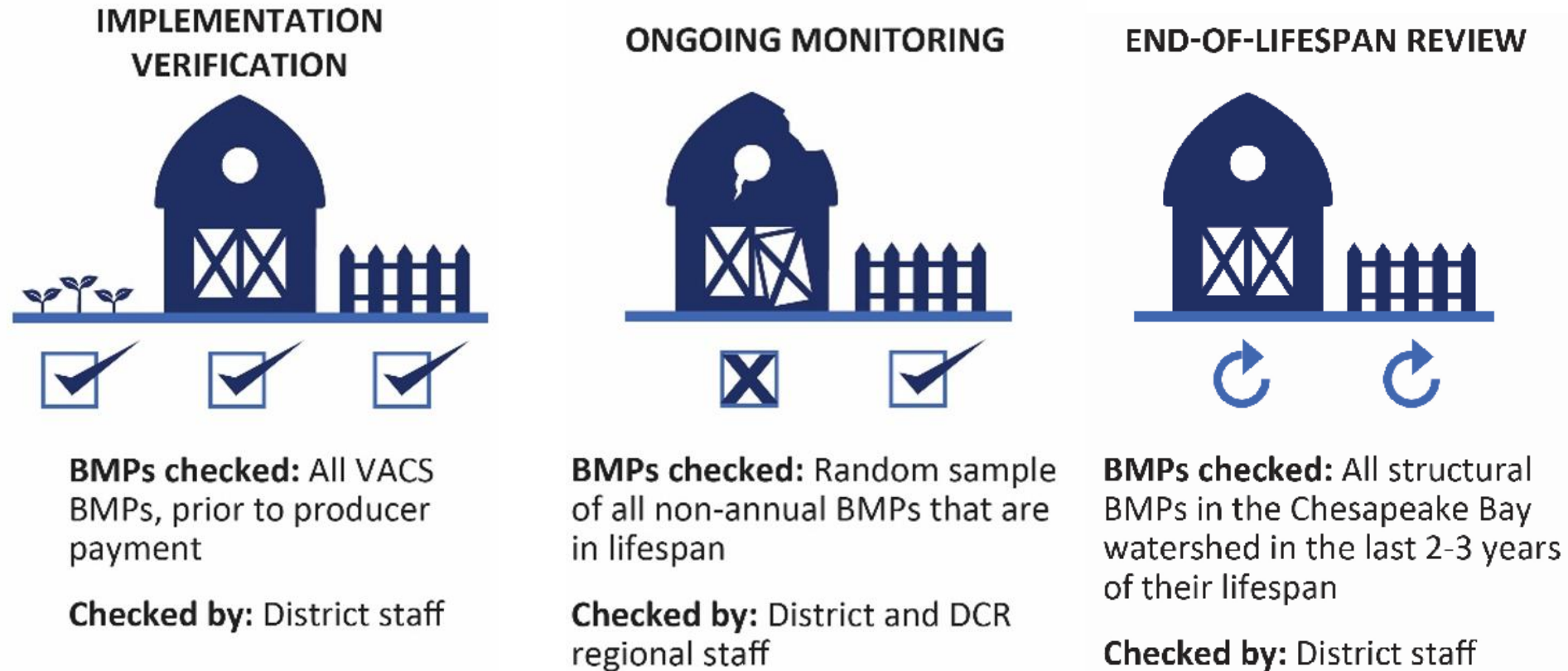
Policy option #3

The General Assembly could direct DCR to develop a plan to reduce the state's reliance on annual BMPs, while still maintaining progress toward the state's pollution reduction goals.

Section 6

VACS implementation verification & oversight

District and DCR staff check on producer compliance at several points, depending on BMP type



Source: JLARC analysis of VACS manual and interviews with stakeholders.

Finding – Verification of cover crop implementation

Inconsistencies in cover crop verifications across districts make it difficult to confirm extent of actual pollution reduction.

Cover crops play a substantial role in achieving pollution reductions through VACS

- In FY26, more than 860,000 acres of cover crop BMPs were funded through VACS
- Nearly 40% of all VACS BMPs were cover crops
- Cover crops should be subject to multiple checks to ensure proper implementation, leading to expected pollution reduction

Cover crop soil coverage likely not being consistently verified, overestimating impact and creating producer inequities

- VACS manual requires at least 60% of the soil to be covered, otherwise a producer should not receive payment
- Several indicators suggest inconsistency across districts
 - Districts report using different methods to verify crop coverage
 - Neighboring districts in the same region pay a widely varying proportion of producers for cover crops (68% to 100%)
- Inconsistencies create risks that
 - Pollution reduction impact estimated from cover crops is likely too high
 - Producers are not being treated the same across the state

Recommendations #6 & #7

The Virginia Soil and Water Conservation Board should establish standardized methods and guidance for district staff to verify cover crop soil coverage.

DCR should provide training to district staff on acceptable methods for verifying cover crop soil coverage.

Finding – State oversight of districts' VACS administration

DCR regularly audits and reviews districts' VACS files and use of funds, but audit frequency and scope should be reviewed and potentially increased.

DCR regularly reviews districts' VACS project files and finances

- DCR conducts two types of biennial audits:
 - Administrative audit of 2 BMP project files per district staff member
 - Financial audit of each district's use of VACS funds*
- DCR also conducts various other VACS-related checks (e.g., data quality reviews, observations of district board meetings, etc.)
- Despite current strengths, DCR audits could be improved by ensuring the frequency, number of files audited, and methodology for file selection is sufficient

*Financial audits conducted by third-party accountants.

Recommendation #9

The Virginia Soil and Water Conservation Board should direct DCR to evaluate and strengthen administrative audits of districts' VACS files.

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