Environmental Protection Agency Chesapeake Bay Program

2019 Federal Agency Progress Evaluation

December 16, 2020

Presentation

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4 Federal Planning Goals

5 Effort to Reach 2025

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1 Background

Eight federal agencies are assigned land in the Chesapeake Assessment Scenario Tool (CAST).

- United States Department of Agriculture Agricultural Research Service (ARS)
- Department of Defense (DoD)
- General Services Administration (GSA)
- National Aeronautics & Space Administration (NASA)
- National Park Service (NPS)
- Smithsonian Institution
- US Fish and Wildlife Service (US FWS)
- US Forest Service (USFS)

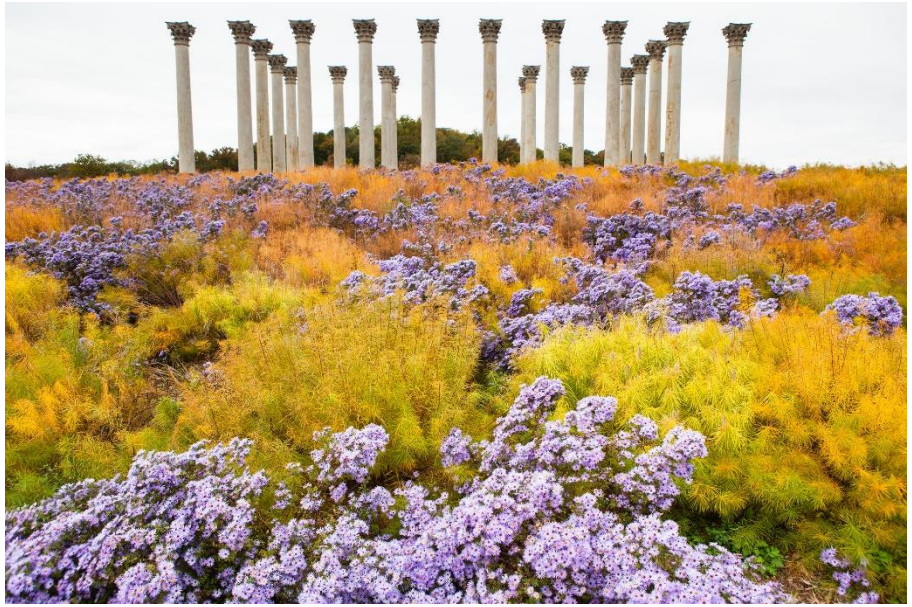


Photo by Will Parson/Chesapeake Bay Program (CBP)

A view of the National Arboretum in Washington, D.C.

Other federal agencies, like NOAA, USGS, USPS, and others are captured as Other Federal Land.

1 Federal Acres in the Chesapeake Bay

Agency	Maryland	New York	Pennsylvania	Virginia	Washington, D.C.	West Virginia
ARS	6,317				420	
DoD	72,392	2,812	84,517	205,463	1,655	10,006
GSA	1,787	0.6	4	188	509	7
NASA	1,229			516		
NPS	44,836		14,446	287,100	8,152	3,763
Smithsonian	789			2,901	147	
US FWS	28,399		164	24,971		626
USFS				1,195,138		267,280
TOTAL Acres	155,749	2,813	99,131	1,716,277	10,883	281,682

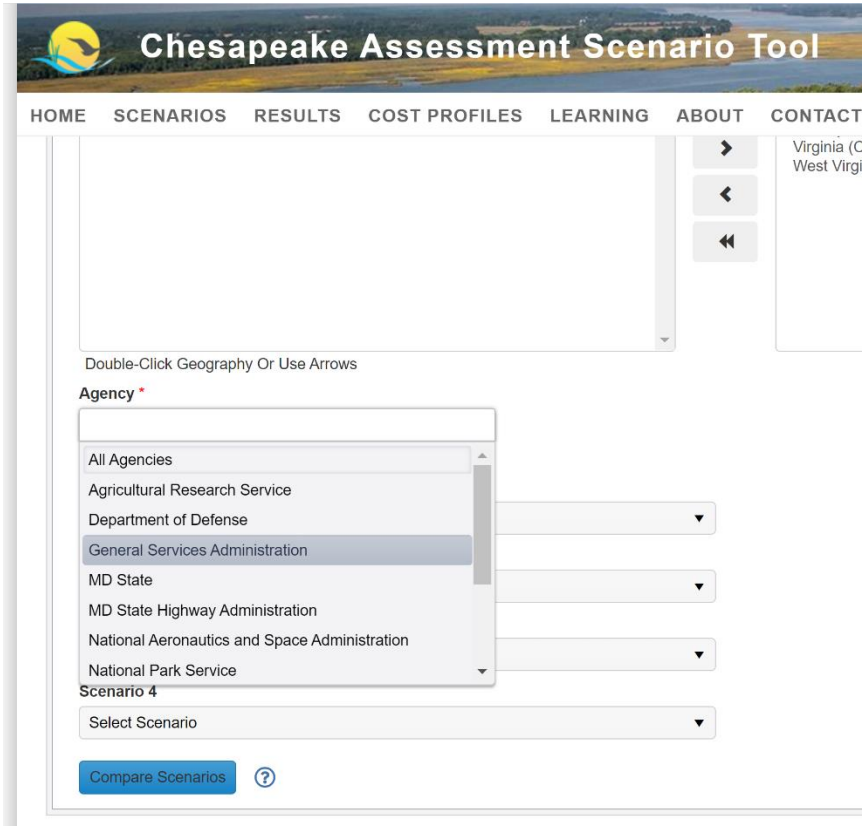
1 Federal Developed Acres

Agency	Maryland	New York	Pennsylvania	Virginia	Washington, D.C.	West Virginia
ARS	1,526				125	
DoD	22,004	355	13,189	34,533	1,338	989
GSA	1,037	0.6	4	188	509	7
NASA	387			327		
NPS	3,755		1,307	7,717	3,217	480
Smithsonian	142			159	108	
US FWS	1,302		23	600		153
USFS				4,313		4,525
TOTAL Acres	30,152	355	14,523	47,838	5,297	6,153

2 | 2019 Progress Scenario Review

Purpose

- Determine how many federal BMPs are identified in the 2019 Progress scenario
- Compare the 2019 Progress scenario to the federal agency BMP record
- Assess the confidence in the 2019 Progress BMP data



Screen capture of the CAST Compare Scenario window with an expanded Agency dropdown.

2 Presence/Absence of BMPs in the 2019 Progress Scenario

Table includes the number of credited BMPs by agency and jurisdiction. Gray cells indicate the agency does not have land.

Agency	Maryland	New York	Pennsylvania	Virginia	District	West Virginia
ARS	0				0	
DoD	1,406	1	302	50	125	0
GSA	15	0	0	0	68	0
NASA	29			3		
NPS	0		0	0	26	0
Smithsonian	0			0	22	
US FWS	21		5	1		0
USFS				0		0

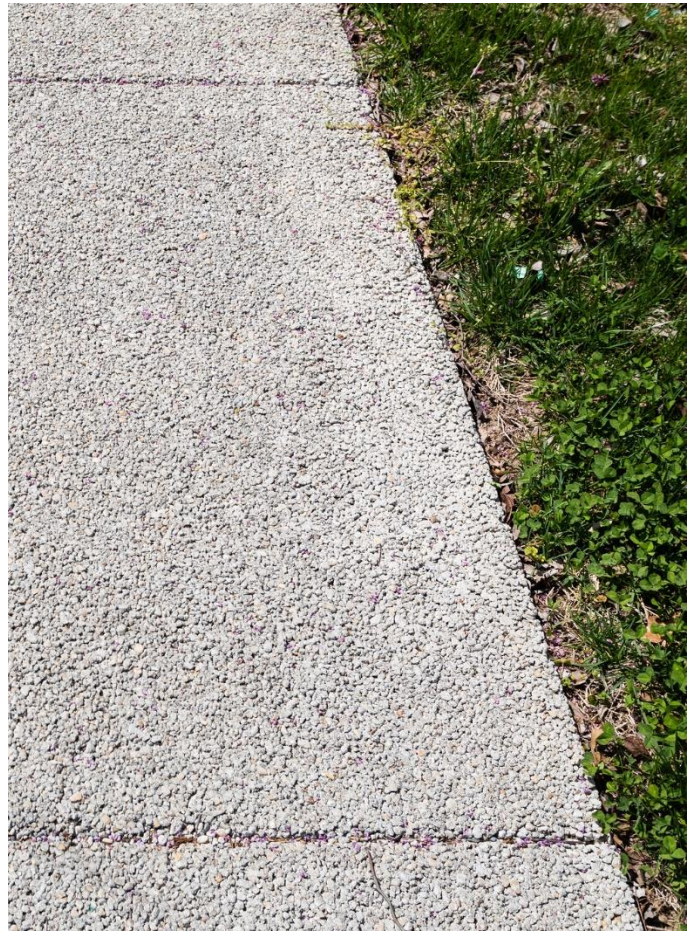
No BMPs in 2019 Progress BMPs in 2019 Progress No Land in Jurisdiction

2 | 2019 Progress Scenario Review

The following federal agencies provided a BMP record for comparison:

- DoD
- GSA (MD only)
- NASA
- NPS
- US FWS
- USFS (VA only)

BC evaluated the federal agency BMP records to estimate the number of BMPs that may have received credit in the 2019 Progress scenario.

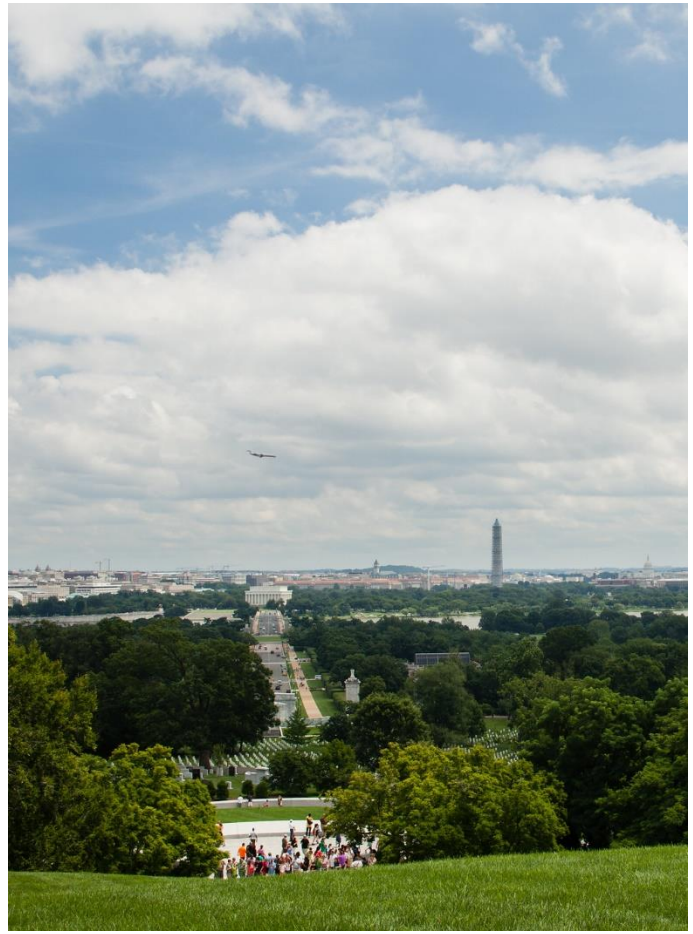


Permeable pavement is a credited BMP in CAST. Photo by Will Parson/CBP.

DoD

BMP Input Comparison

Jurisdiction	Acres	BMPs in the 2019 Progress Scenario	Estimate of Eligible BMPs	Data Rating
Maryland	72,392	1,406	1,664	Medium
New York	2,812	1	1	High
Pennsylvania	84,517	302	288	High
Virginia	205,463	50	1,374	Low
Washington, D.C.	1,655	125	71	Low
West Virginia	10,006	0	7	Low



A view of Washington, D.C. from Arlington National Cemetery. Photo by Olivier Giron/CBP.

GSA

BMP Input Comparison

Jurisdiction	Acres	BMPs in the 2019 Progress Scenario	Estimate of Eligible BMPs	Data Rating
Maryland	1,787	15	61	Not provided
New York	0.6	0	Unknown	Unknown
Pennsylvania	4.4	0	Unknown	Unknown
Virginia	300	0	Unknown	Unknown
Washington, D.C.	518	68	Unknown	Unknown
West Virginia	6.9	0	Unknown	Unknown

The GSA Building in Washington, D.C. Photo by GSA.

NASA

BMP Input Comparison

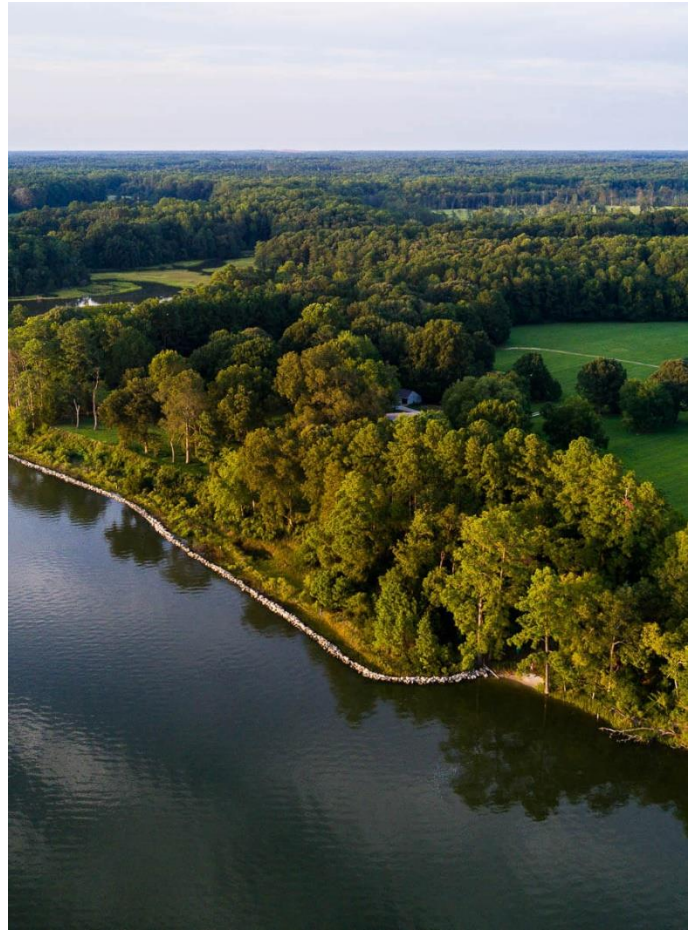
Jurisdiction	Acres	BMPs in the 2019 Progress Scenario	Estimate of Eligible BMPs	Data Rating
Maryland	1,229	29	29	Medium
Virginia	516	3	29	Low

NASA Langley Research Center in Virginia.

NPS

BMP Input Comparison

Jurisdiction	Acres	BMPs in the 2019 Progress Scenario	Estimate of Eligible BMPs	Data Rating
Maryland	44,836	0	0	Low
Pennsylvania	14,446	0	0	Low
Virginia	287,100	0	5	Low
Washington, D.C.	8,152	26	52	Low
West Virginia	3,763	0	0	Low



The site of the Powhatan village of Werowocomoco in Virginia. Photo by Matt Rath/NPS.

US FWS

BMP Input Comparison

Jurisdiction	Acres	BMPs in the 2019 Progress Scenario	Estimate of Eligible BMPs	Data Rating
Maryland	28,339	21	22	Medium
Pennsylvania	164	5	2	Medium
Virginia	24,971	1	10	Medium
West Virginia	626	0	1	Medium

Common tern adult with banded chicks. Photo by USFWS.

USFS

BMP Input Comparison

Jurisdiction	Acres	BMPs in the 2019 Progress Scenario	Estimate of Eligible BMPs	Data Rating
Virginia	1,195,138	0	0	Not provided
West Virginia	267,280	0	Unknown	Not provided

George Washington & Jefferson National Forests. Photo by USFS.

2 | 2019 Progress Scenario Review

Table shows the ratio of the number of credited BMPs to the number of eligible BMPs. Color indicates data rating.
Green = High; Gold = Medium; Red = Low Data Confidence

Agency	Maryland	New York	Pennsylvania	Virginia	District	West Virginia
ARS	0 / Unknown				0 / Unknown	
DoD	1,406 / 1,664	1 / 1	302 / 288	50 / 1,374	125 / 71	0 / 7
GSA	15 / 61	0 / Unknown	0 / Unknown	0 / Unknown	68 / Unknown	0 / Unknown
NASA	29 / 29			3 / 29		
NPS	0 / 28		0 / 0	0 / 5	26 / 52	0 / 6
Smithsonian	0 / Unknown			0 / Unknown	22 / Unknown	
US FWS	21 / 22		5 / 2	1 / 10		0 / 1
USFS				0 / 0		0 / Unknown

2 Data Review Conclusions

- Federal agencies have generally **low** or **medium** confidence in the accuracy and completeness of the 2019 BMP inputs.
- Jurisdictions have acknowledged issues with reporting of federal BMPs in MD, VA, and WV for 2019 Progress.
- Data management contributes to underreporting and lack of credit.
  - BMP records lack information required to receive credit.
  - Some federal agencies cannot provide a full record of implemented BMPs.

The evaluation of remaining effort to reach any 2025 goal must account for the need to improve reporting/crediting of federal BMPs.

3 Reporting Recommendations

For federal agencies:

- Annually update and report the full record of BMP information
- Evaluate internal data management practices
- Where resources permit, consider efforts to collect additional data for existing BMPs

For jurisdictions:

- Ensure BMPs are reported under the proper agency code
- Work with federal agencies during annual progress reporting

4 Federal Planning Goals

EPA Default Method

- Calculation method used to set federal facility targets in 2015; updated for this effort

Phase III WIPs

- The Phase III Watershed Implementation Plans (WIP) document jurisdiction expectations for federal contribution to the TMDL through 2025

WIP 3 Final Scenario

- CAST scenario used to assess if the jurisdictions' Phase III WIP strategies met their assigned planning targets

4 Federal Planning Goals: EPA Default Method

EPA Default Method

- The 2015 *Protocol for Setting Targets, Planning BMPs and Reporting Progress for Federal Facilities and Lands* (Protocol) gave jurisdictions the option to set federal facility targets using the EPA Default Method

2015 Method

Targets expressed as: Change in pollutant loading rate (lb/acre/year) for 2017 and 2025 by facility

Data sources: Federal loads in the 2009 Progress and 2025 WIP scenario in Phase 5 version of CAST results at the state-basin scale

4 Federal Planning Goals: EPA Default Method

EPA Default Method

Revised Method (2020)

Targets expressed as: Percent reduction from 2019 Progress loads by agency

Data sources: Non-federal loads in the 2019 Progress (CAST-2019) and the WIP 3 Final (CAST-2017d) scenarios at the state-basin scale

The percent reduction for federal land **is equal to** the percent reduction for non-federal land, *only including urban and natural source sectors.*

4 Federal Planning Goals: Phase III WIPs

Phase III WIPs

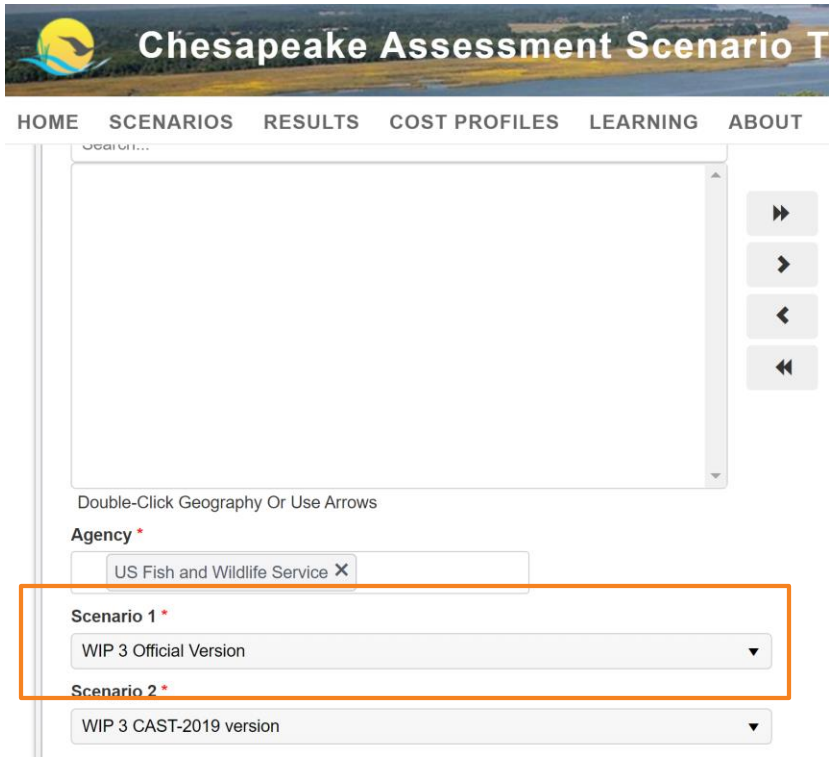
Jurisdiction	Is the FPG Defined Quantitatively?	FPG Unit/Expression	Is the FPG Considered Equitable?	Reason
Maryland	No	N/A	Unclear	Lack of documented expectations
New York	No	N/A	Unclear	Use of Protocol, which uses outdated Model
Pennsylvania	Yes	Reduction & target load	No	Infeasible load reductions
Virginia	Partial	Reduction	Yes	N/A
Washington, D.C.	Yes	Reduction & target load	No	Stormwater fee payment
West Virginia	No	N/A	Yes	N/A

4 Federal Planning Goals: WIP 3 Final Scenario

WIP 3 Final Scenario

Jurisdictions submitted scenarios with BMP & policy implementation to demonstrate if their Phase III WIP would achieve the 2025 state-basin planning targets.

The official version of the WIP 3 scenario uses the results of the CAST-2017d model version.



Screen capture of the CAST Compare Scenario window with the WIP 3 Official Version scenario.

4 Federal Planning Goals: WIP 3 Final Scenario

WIP 3 Final Scenario

Table indicates if WIP 3 Final scenario includes BMPs assigned to the agency. Gray indicates the agency does not have land.

Agency	Maryland	New York	Pennsylvania	Virginia	District	West Virginia
ARS	✗				✓	
DoD	✓	✗	✓	✓	✓	✗
GSA	✓	✗	✓	✗	✓	✗
NASA	✓			✓		
NPS	✓		✗	✓	✓	✗
Smithsonian	✗			✗	✓	
US FWS	✓		✗	✓		✗
USFS				✗		✗

5 Effort to Reach 2025

Factors to consider when evaluating the effort remaining to achieve the FPGs:

Confidence in current BMP data

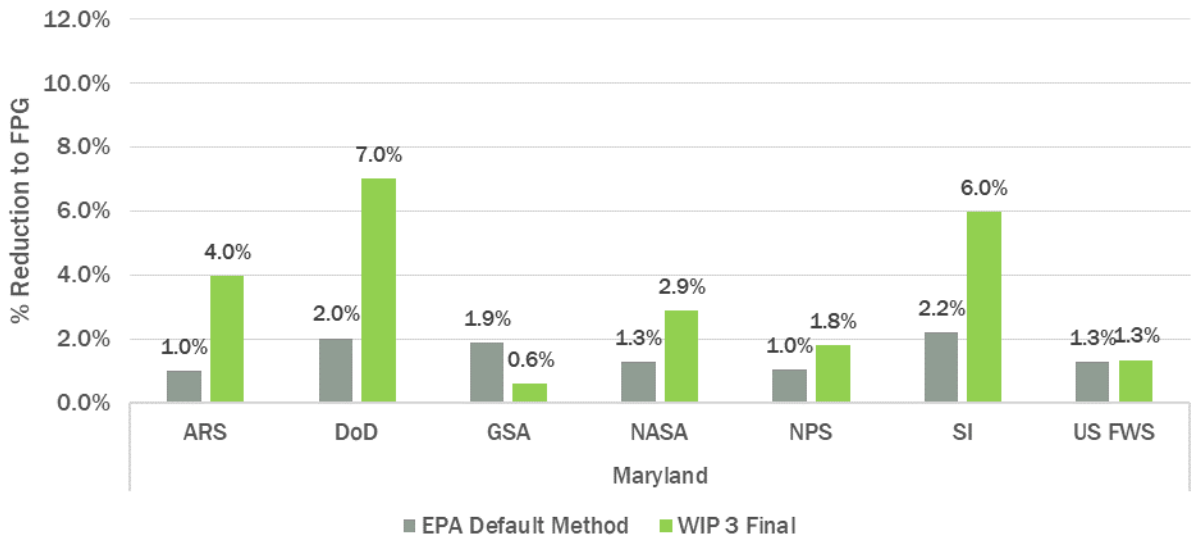
Equity with non-federal partners

CAST model used to produce scenario results

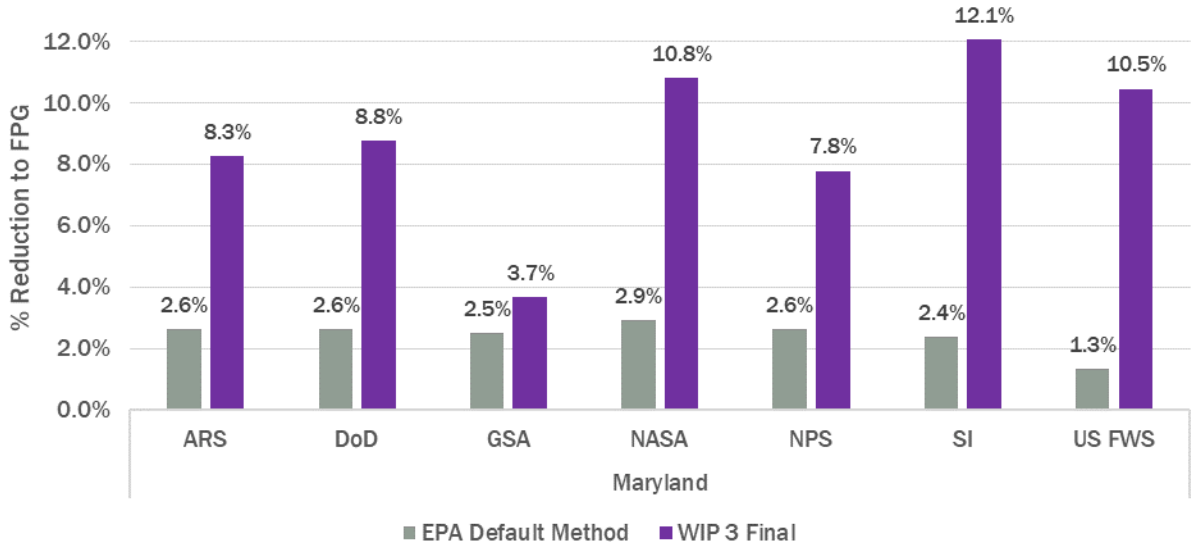
Feasibility

5 Effort to Reach 2025 - Maryland

Total Nitrogen (TN)



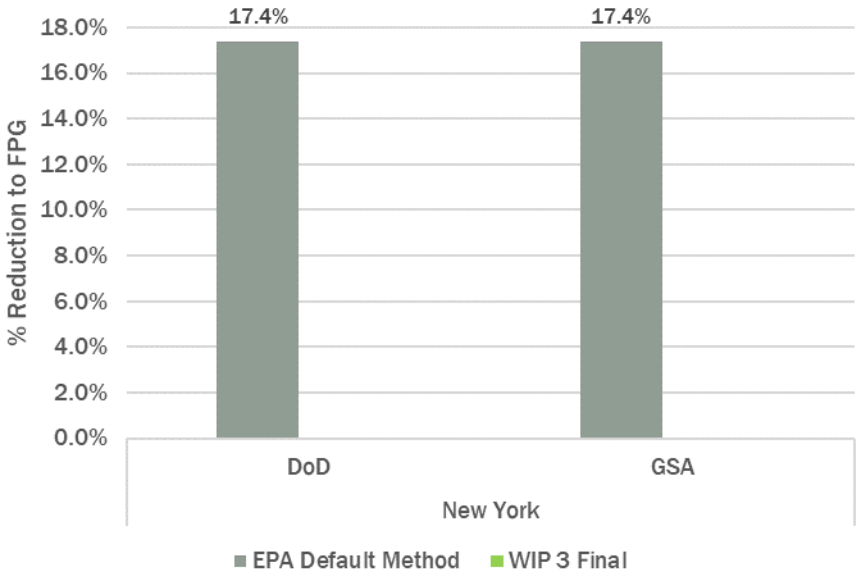
Total Phosphorus (TP)



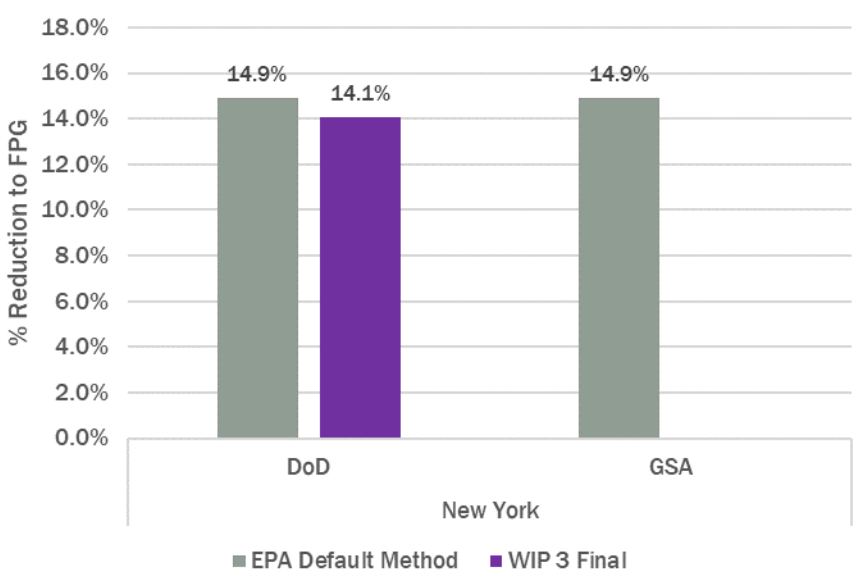
Percent reductions are calculated from 2019 Progress loads, which does not include all federal BMPs. Level of effort is subject to change pending improvements to the federal BMP record.

5 Effort to Reach 2025 – New York

Total Nitrogen (TN)



Total Phosphorus (TP)



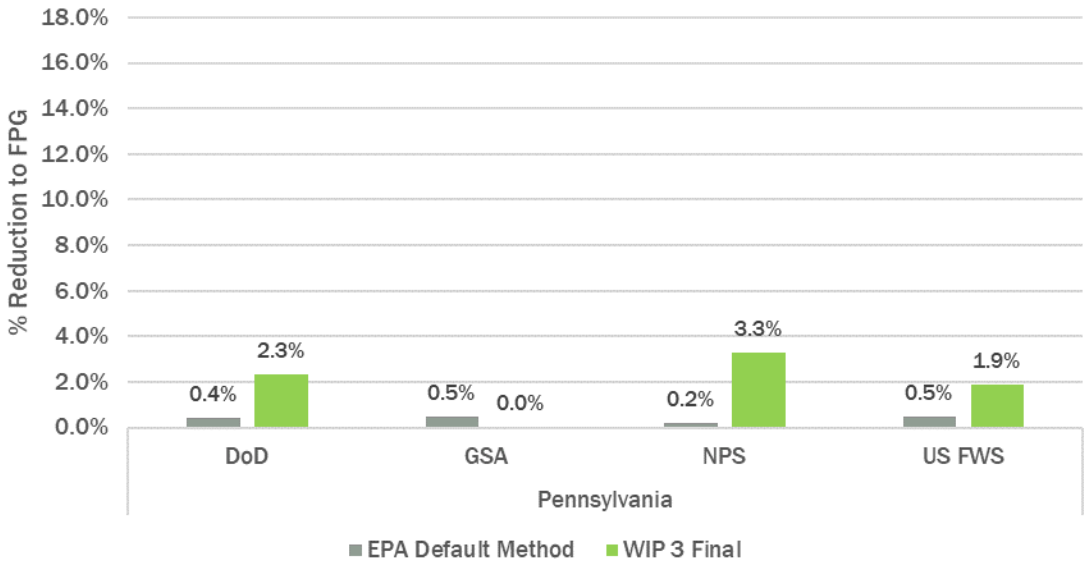
Notes:

1. The WIP 3 Final scenario does not call for additional reductions of TN for DoD or TN & TP for GSA.

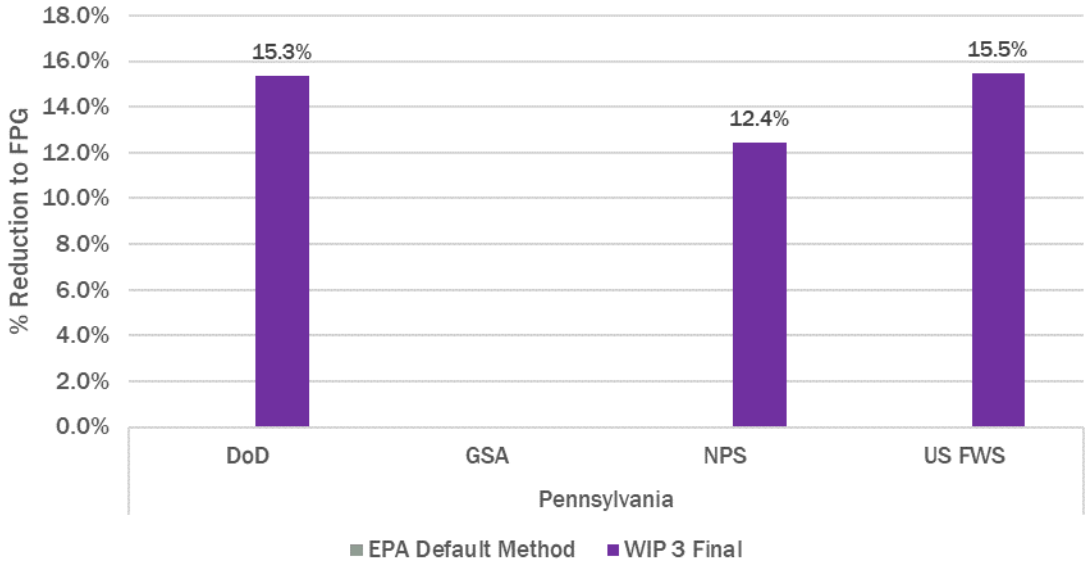
Percent reductions are calculated from 2019 Progress loads, which does not include all federal BMPs. Level of effort is subject to change pending improvements to the federal BMP record.

5 Effort to Reach 2025 – Pennsylvania

Total Nitrogen (TN)



Total Phosphorus (TP)



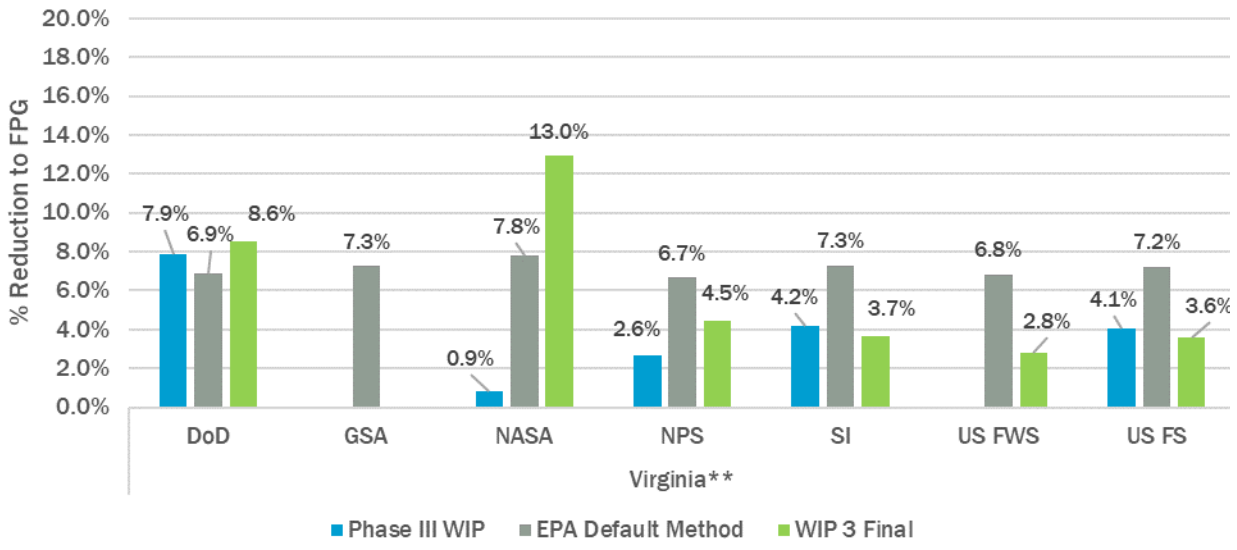
Notes:

1. Phase III WIP FPGs are considered interim and are therefore not included.
2. Based on the revised EPA Default Method, federal agencies have met the 2025 load goal.

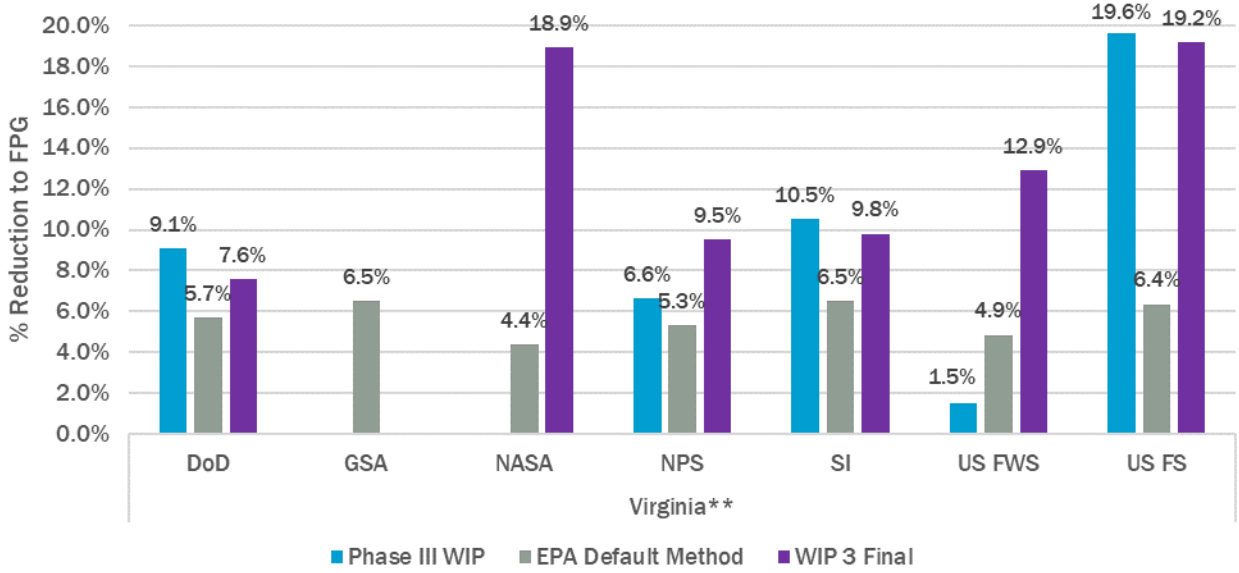
Percent reductions are calculated from 2019 Progress loads, which does not include all federal BMPs. Level of effort is subject to change pending improvements to the federal BMP record.

5 Effort to Reach 2025 – Virginia

Total Nitrogen (TN)



Total Phosphorus (TP)



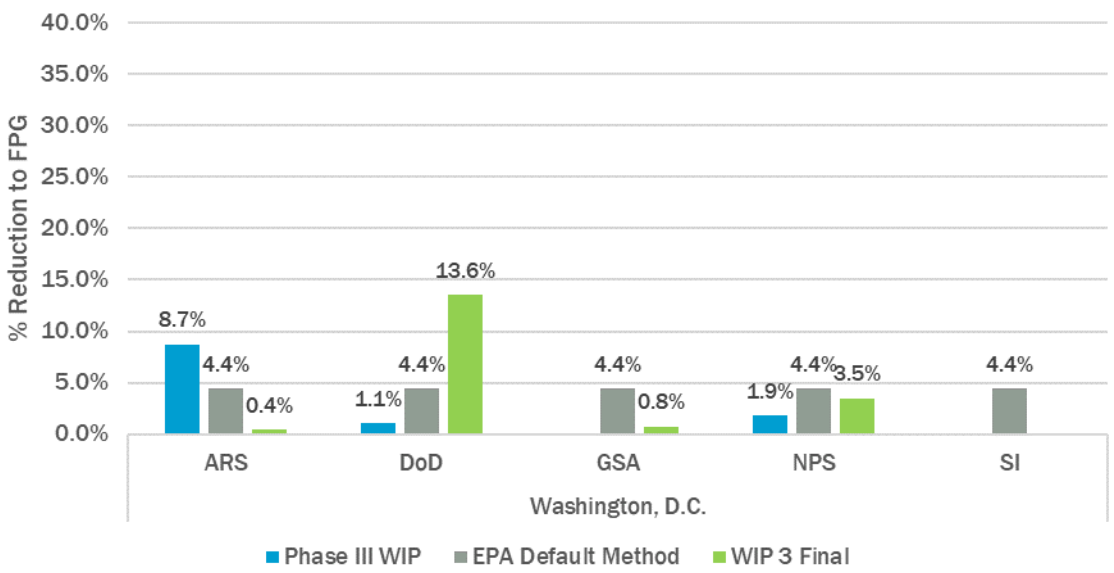
Notes:

1. Phase III WIP FPG only includes load reductions from non-regulated land and therefore does not include MS4 permit requirements and other conditions listed in the Phase III WIP.

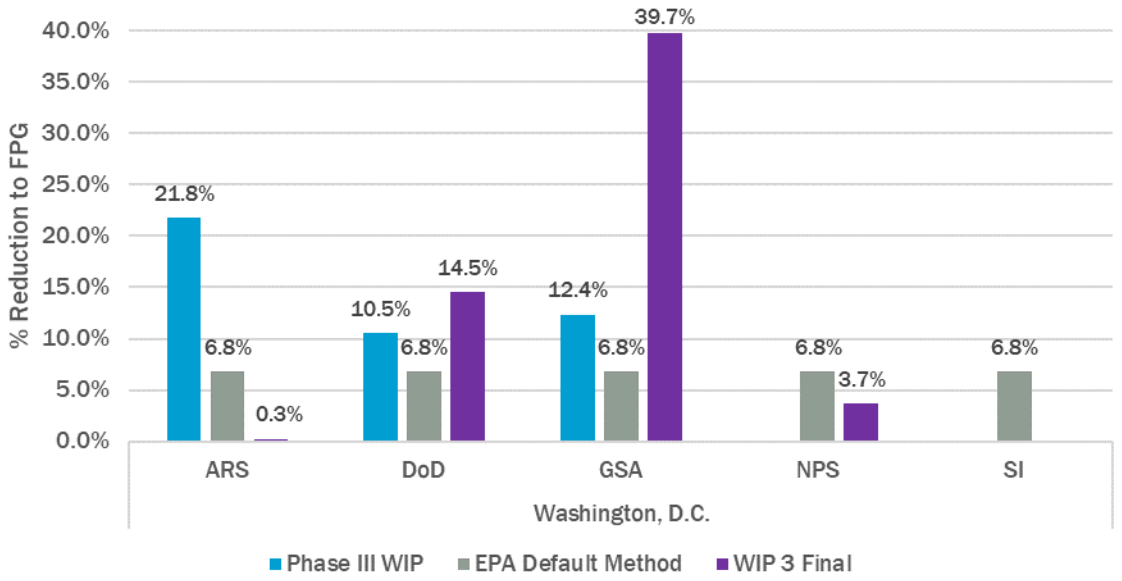
Percent reductions are calculated from 2019 Progress loads, which does not include all federal BMPs. Level of effort is subject to change pending improvements to the federal BMP record.

5 | Effort to Reach 2025 – Washington, D.C.

Total Nitrogen (TN)



Total Phosphorus (TP)



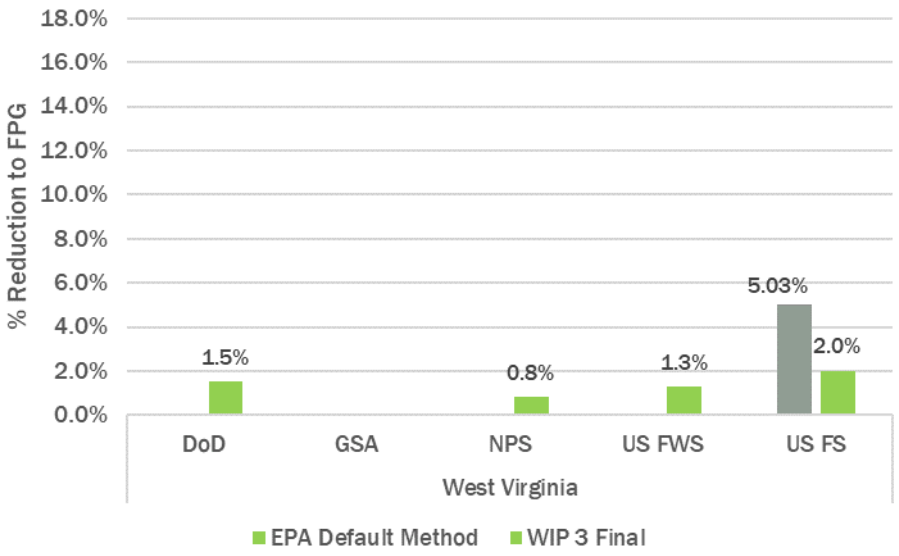
Notes:

WIP 3 Final scenario loads based on BMP input scenarios provided by federal agencies. DOEE will only hold federal agencies to the load reductions documented in the Phase III WIP.

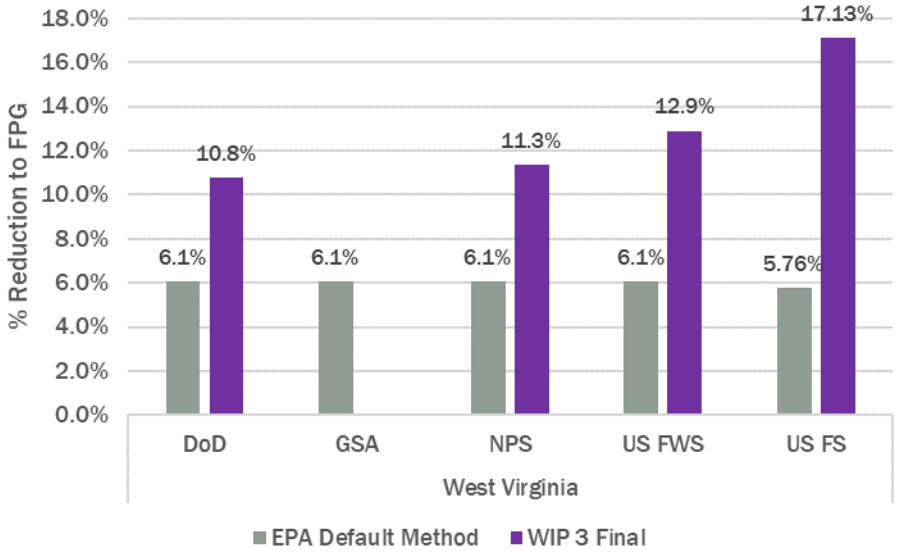
Percent reductions are calculated from 2019 Progress loads, which does not include all federal BMPs. Level of effort is subject to change pending improvements to the federal BMP record.

5 Effort to Reach 2025 – West Virginia

Total Nitrogen (TN)



Total Phosphorus (TP)



Notes:
WV Department of Environmental Protection did not set FPGs for federal agencies.

Percent reductions are calculated from 2019 Progress loads, which does not include all federal BMPs. Level of effort is subject to change pending improvements to the federal BMP record.

5 FPG Conclusions

EPA Default Method

Advantages:
- Equitable method
- Facility managers can calculate their facility's contribution

Disadvantages:
- Not clear what impact this would have to jurisdiction ability to meet planning targets
- Has not been approved by the Federal Facilities Workgroup

Phase III WIPs

Advantages:
- EPA-approved documents developed through jurisdiction-wide coordination

Disadvantages:
- Equity concerns
- Not all Phase III WIPs provided numeric expectations

WIP 3 Final Scenario

Advantages:
- Reflects BMP implementation that will achieve jurisdiction planning targets

Disadvantages:
- Inconsistent input from federal agencies
- May exceed required effort from federal agencies
- Affected by model limitations of CAST-2017d

6 FPG Recommendations

There is a lack of consensus around the 2025 endpoint for federal agencies. Therefore, the recommended next steps are:

For federal agencies and jurisdictions: Address reporting recommendations to improve the federal BMP record.

For jurisdictions: Participate in ongoing discussions about the appropriate FPGs.

For EPA and the Federal Facilities Workgroup: Coordinate a discussion around the FPG sources to develop consensus and set a clear expectation for federal agencies regarding the 2025 endpoint.

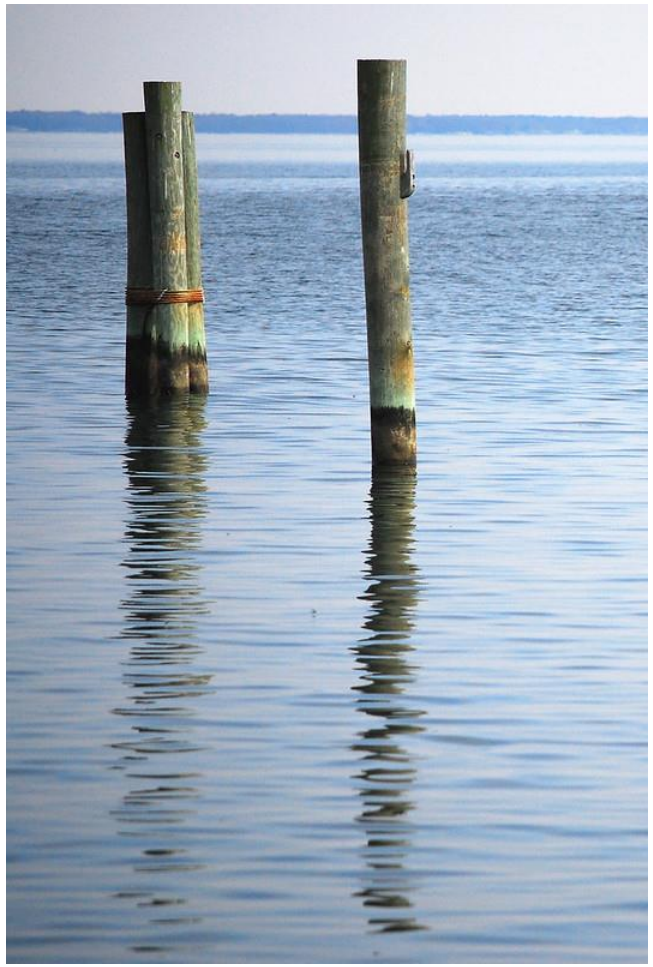
A 2018 meeting of the Healthy Watersheds GIT. Photo by Will Parson/CBP.

6 FPG Recommendations

For EPA and the Federal Facilities Workgroup: Evaluate the value of subsequent analyses to further assist federal agencies and the jurisdictions to act on the results of this effort.

Examples:

- BMP Crediting Reports for federal agencies
- Future iterations of this analysis (progress evaluation) after an FPG is selected



Next Steps

What can you do now?

- Provide comments on Federal Agency Progress Evaluation Report through **January 8**
- Sustain ongoing discussions between federal agency and jurisdiction staff to understand FPGs and reach consensus around an agreed-upon and equitable endpoint/FPG.
- Assess your BMP record and create a plan for improvement for 2021 Progress reporting—**it is never too early to start**.

Questions?

Photo by Will Parson/Chesapeake Bay Program (CBP)