

Federal Agency Progress Evaluation

Prepared for
Environmental Protection Agency,
Chesapeake Bay Program Office
March 19, 2021

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List of Abbreviations

ARS	Agricultural Research Service
BayFAST	Bay Facility Assessment Scenario Tool
BC	AH/BC Navy JV, LLC
BMP	best management practice
CAST	Chesapeake Assessment Scenario Tool
DoD	Department of Defense
DEP	Department of Environmental Protection
DEQ	Department of Environmental Quality
DOEE	Department of Energy and the Environment
EPA	Environmental Protection Agency
FFTAT	Federal Facilities Target Action Team
FPG	federal planning goal
GSA	General Services Administration
MD	Maryland
MDE	Maryland Department of the Environment
MS4	municipal separate storm sewer system
NASA	National Aeronautics and Space Administration
NCR	National Capital Region
NEIEN	National Environmental Information Exchange Network
NPS	National Park Service
NY	New York
PA	Pennsylvania
Report	<i>Federal Agency Progress Evaluation</i>
TMDL	total maximum daily load
TN	total nitrogen
TP	total phosphorus
TSS	total suspended solids
US	United States
USFS	United States Forest Service
US FWS	United States Fish and Wildlife Service
VA	Virginia
WIP	Watershed Implementation Plan
WV	West Virginia



Section 1

Introduction

Federal agencies own or maintain almost 2.3 million acres in the Chesapeake Bay watershed, including 112,000 acres of developed land. Cumulatively, federally owned land is equal to 5.7 percent of the watershed land area, which makes the federal community an important stakeholder to the Chesapeake Bay total maximum daily load (TMDL). Executive Order 13508, which was signed in 2010, calls for federal agencies to lead by example in implementing actions to protect and restore the Chesapeake Bay watershed. As a result, since 2010, federal agencies have been partners in the restoration of the Chesapeake Bay through the implementation of two-year milestones, the Federal Facilities Workgroup and Federal Office Directors, and the reporting of practices that support the Bay restoration. Like the Chesapeake Bay jurisdictions, federal agencies are expected to contribute equitably to the reduction of pollutant loads of total nitrogen (TN), total phosphorus (TP), and total suspended solids (TSS) to the Chesapeake Bay. The jurisdictions define the expected load reductions or final loads to be achieved by federal agencies with input from the Environmental Protection Agency (EPA), who is charged to oversee the Chesapeake Bay TMDL and restoration program, and the federal community.

The EPA Chesapeake Bay Program Office contracted AH/BC Navy JV, LLC (BC) to assess the progress of each federal agency toward their goals utilizing the results of the Chesapeake Assessment Scenario Tool (CAST) 2019 Progress scenario and comparing those loads to the federal planning goals (FPGs) defined for each jurisdiction. This effort includes a comparison of the best management practices (BMPs) currently credited to federal agencies in CAST and the agency's record of implemented BMPs to assess the accuracy and completeness of the federal BMP record reported by the jurisdictions. The purpose of this exercise is to define the baseline (2019) for federal BMP implementation as documented in CAST, evaluate FPGs defined by jurisdictions and EPA through 2025, assess the accuracy of federal BMP information reported from the jurisdictions to CAST, and provide recommendations and next steps to EPA and the Federal Facilities Workgroup.

1.1 Background

A number of federal agencies operate within the Chesapeake Bay watershed. Some, like the United States (US) Army Corps of Engineers, the United States Geological Survey, and the US Postal Service, own a limited land area. Others, like the Department of Defense (DoD) and the US Forest Service (USFS), control significant amounts of land. Recognizing the increased influence of the largest federal landholders to improve water quality in the Chesapeake Bay, CAST allows users to assess the progress of eight federal agencies: the Agricultural Research Service (ARS), DoD, General Services Administration (GSA), National Aeronautics and Space Administration (NASA), National Park Service (NPS), Smithsonian Institution, US Fish and Wildlife Service (US FWS), and USFS. These federal agencies own and operate facilities in six jurisdictions (Maryland, New York, Pennsylvania, Virginia, Washington, D.C., and West Virginia). There is no federal presence in Delaware; therefore, it is excluded from this analysis. The other federal agencies in the watershed are consolidated in CAST as "Other Federal Land" and are not evaluated as a part of this effort. Table 1-1 includes a summary of the land assigned by jurisdiction to the eight named federal agencies in the 2019 Progress scenario from CAST-2019. It is important to note that federal land use data is processed and modified for use



in CAST. Therefore, the federal acres defined in CAST may not align with the land use information tracked by federal agencies or federal facility managers.

Although CAST calculates nutrient and sediment loads from six source sectors (Agriculture, Atmosphere, Developed, Natural, Septic, and Wastewater), federal agencies are only assigned loads in the Developed and Natural source sectors. In practice, federal agencies may also impact other source sectors, such as Agriculture, Septic, and Wastewater, but due to limitations in available data and scale of implementation, the Chesapeake Bay Program elected not to assign these source sectors to federal agencies. Federal agencies also do not have loads assigned for the Construction and Harvested Forest load source groups in the Developed and Natural source sectors, respectively. For the Agriculture and Wastewater sectors and the Construction and Harvested Forest load source groups, BMP implementation and loads are tracked by the jurisdictions.

Table 1-1. Federal Agency Land in the Chesapeake Bay Watershed (Acres)

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	155,749	2,813	99,131	1,716,277	10,883	281,682

1.2 Report Organization

This 2019 Federal Agency Progress Evaluation (Report) includes four sections.

- Following this introduction (Section 1), Section 2 reviews the federal agency data and results from the 2019 Progress scenario, including the scenario's BMP input deck, resulting loads, and a comparison with BMP data provided by the federal agencies.
- Section 3 will review potential FPGs for federal agencies from the EPA Default Method, the Phase III Watershed Implementation Plans (WIPs), and the CAST scenario of BMP inputs for 2025 (WIP 3 Final scenario) and compare the equity and level of effort associated with each source.
- Section 4 will include conclusions and next steps for federal agencies, jurisdictions, and EPA.

Section 2

2019 Progress Evaluation

The 2019 Progress scenario in CAST-2019 was used to assess the progress of federal agencies through June 30, 2019. The Loads report within CAST was used to determine the TN, TP, and TSS loads assigned to each of the eight federal landholders with a defined agency code by Chesapeake Bay jurisdiction, and the BMP Input report was used to determine the number of BMPs assigned to each agency code by jurisdiction. In addition, the BMPs Submitted versus Credited report was utilized to determine the credited implementation of BMPs by BMP type. In the summer of 2020, each federal agency was asked to provide a copy of their full historical record or the most recent annual progress submission for comparison with the 2019 Progress scenario BMP information and to provide feedback on the BMP dataset currently assigned in CAST.

The results of this task are intended to inform the baseline for comparison with the FPGs (in Section 3) to determine the remaining effort required by federal agencies to achieve their 2025 targets. To assess the quality of the baseline, this section will also compare the 2019 Progress scenario inputs against the historical BMP record provided by the federal agencies. The purpose of this assessment is only to compare the number of BMPs in each dataset, not to determine the crediting status of individual BMPs tracked by the federal agencies.

2.1 CAST BMP Input Overview

The Chesapeake Bay jurisdictions are a key intermediary between federal facilities and CAST. BMPs implemented for water quality improvement are reported by the federal community to the jurisdictions, who then report the information to the National Environmental Information Exchange Network (NEIEN). Data from NEIEN is used to track annual progress in CAST, which models the nutrient and sediment loads across the watershed and those that reach the Bay. While this approach creates a standardized structure for tracking progress by jurisdiction, each transfer of data from one repository to the next introduces the possibility of changes. The jurisdictions and federal agencies have dual responsibilities: to ensure that the reported data includes sufficient information to be successfully credited and to ensure the reported data is accurately transferred to the next node. This section will review the reporting and crediting of federal BMPs from the federal agency through CAST.

The number of BMPs assigned to each federal agency in the 2019 Progress scenario, as pulled in July 2020, is summarized by jurisdiction in Table 2-1. Red-filled cells indicate that the agency has land in the jurisdiction but no BMPs that were credited in state year 2019. Cross-hatched cells indicate that the agency does not have land in the jurisdiction, based on federal land use data in CAST.



Table 2-1. BMP Count in 2019 Progress Scenario by Agency & Jurisdiction						
Agency/State	MD	NY	PA	VA	DC	WV
ARS						
DoD	1406	1	302	50	125	
GSA	15				68	
NASA	29			3		
NPS					26	
Smithsonian					22	
US FWS	21		5	1		
USFS						

A detailed discussion of the results for each agency is included in the subsequent sub-sections.

2.2 2019 Progress Evaluation Process

The progress assessment is limited to the results of the 2019 Progress scenario in CAST-2019 and the BMP information provided by the federal agencies. This evaluation does not include a detailed review of datasets from NEIEN or the jurisdictions to determine the cause or reason BMPs tracked by the federal agencies are not credited in CAST. Additionally, because AH/BC does not have access to the original submissions from federal agencies to jurisdictions during the 2019 reporting period, the number of BMPs estimated to be eligible for credit in the 2019 Progress scenario are based on the available information in the datasets provided by the federal agencies and AH/BC's experience with NEIEN and CAST.

This evaluation of the number of BMPs eligible for inclusion in CAST has been conducted by excluding BMPs that have a known reason why the BMP would be uncredited. Known reasons include expired annual BMPs, ineligible BMP types, BMPs without a recent inspection, BMPs with a failed inspection and no corrective maintenance, or BMPs without required information like a drainage area or extent. This list is based on BC's experience with jurisdiction reporting requirements and the NEIEN error reports. The number of BMPs eligible for credit is an estimate only; for more information, federal agency or facility staff should coordinate directly with the appropriate jurisdiction contact or review the NEIEN error reports to determine whether BMPs are credited.

Ineligible BMP types. Some types of BMPs are credited by the jurisdiction but are not credited to federal agencies in CAST. For example, erosion and sediment control BMPs are applied to the Construction load source group. Because federal agencies do not have construction land in CAST, they will not receive credit for this type of BMP. Federal agencies also will not receive credit for agricultural BMPs, septic BMPs, and forest harvesting practices, among others. Additionally, CAST does not credit unapproved BMP types, such as proprietary BMPs, even if the jurisdiction recognizes these BMPs.

Inspection Date. Each BMP type has an assigned credit duration in NEIEN and CAST, which defines the amount of time a BMP will receive credit before an inspection must be conducted to verify the BMP is still functioning as designed. If an inspection with a passing result is not reported before the BMP reaches its credit duration, it will not be credited. For most structural BMPs, the credit duration is 10 years.



Maintenance Date. If a BMP fails an inspection, a maintenance date must be reported in addition to the failed inspection date and status to indicate that corrective action was taken to address the issues leading to the failed inspection. If a BMP has a failed inspection status and does not have an associated maintenance date, it will not receive credit.

Missing Information. In general, a BMP must have a date installed and a reported extent (e.g., area treated, length restored, etc.) If this required information is missing, the BMP will not be credited in CAST.

Expired Annual BMPs. Some BMPs, such as street sweeping, urban nutrient management plans, and catch basin cleaning, have a credit duration of one year. Unlike other BMPs, which can maintain credit by reporting the latest inspection date with the original record, annual BMPs must be reported every year with a date “installed” (i.e., complete or reported) within the current progress year. If an annual BMP is reported with a date installed from a previous progress year, it will not be credited.

2.3 ARS

ARS is assigned 6,317 acres in Maryland and 420 acres in Washington, D.C. Of that area, 1,526 acres and 156 acres are developed in Maryland and Washington, D.C., respectively. Therefore, most of the land owned by ARS is part of the Natural source sector.

2.3.1 BMP Implementation

The 2019 Progress scenario does not include BMPs from ARS. Recent changes in staff at ARS have led to some loss of institutional knowledge. Following the release of the draft report for comment, Bill Howl with the United States Department of Agriculture (USDA) indicated that there are 56 BMPs at the Beltsville Agricultural Research Center in Maryland and 12 BMPs at the National Arboretum in Washington, D.C. In 2021, EPA will work with ARS to assist with their BMP reporting. Given the agency’s focus on agriculture, it is possible that some of the BMPs are agricultural practices that cannot be credited to the federal agency in CAST.

DOEE has indicated that the agency included 16 BMPs from ARS facilities in the 2019 Progress scenario. Because the BMPs were associated with the USDA, they were incorrectly assigned the Nonfederal agency code.

2.3.2 Pollutant Loads

Table 2-2 summarizes the 2019 Progress loads of TN, and TP, and TSS for ARS by state basin. These loads do not include load reductions from BMPs that may be located at ARS facilities.

Jurisdiction	Edge of Stream (EOS)			Edge of Tide (EOT)		
	TN	TP	TSS	TN	TP	TSS
DC Potomac River Basin	1,408	120	181,357	1,328	106	101,191
MD Patuxent River Basin	260	35	37,515	109	25	14,695
MD Potomac River Basin	24,180	3,656	5,986,377	19,762	3,754	5,064,072



2.4 DoD

DoD is assigned 72,392 acres in Maryland, 2,812 acres in New York, 84,517 acres in Pennsylvania, 205,463 acres in Virginia, 1,655 acres in Washington, D.C., and 10,006 acres in West Virginia in CAST. Of the almost 377,000 acres assigned to DoD across the Chesapeake Bay watershed, 72,341 acres are developed. Therefore, DoD controls the most developed land among the federal agencies in the Chesapeake Bay watershed. The DoD as a federal agency is inclusive of the U.S. Army, Navy, Air Force, Marine Corps, Defense Logistics Agency, and Washington Headquarters Service.

2.4.1 BMP Implementation

2.4.1.1 BMP Inputs

The DoD agency code is assigned to 1,884 BMPs in the 2019 Progress scenario BMP input deck. However, the DoD maintains a database of over 3,858 BMPs that were reported to the jurisdictions for the 2019 progress year. Of those, about 3,400 were expected to be credited, meaning that there is no known reason the BMP record would be excluded from the 2019 Progress scenario.

Jurisdiction	BMPs in 2019 Progress	Estimate of BMPs Eligible for Credit	Data Rating ^a
Maryland	1,406	1,664	Medium
New York	1	1	N/A
Pennsylvania	302	288	High
Virginia	50	1,374	Low
Washington, D.C.	125	71	Low
West Virginia	0	7	N/A

a. Data ratings for Maryland, Pennsylvania, Washington, D.C., and Virginia are provided by the agency. The agency did not rate the data in New York or West Virginia.

Table 2-3 summarizes the number of BMPs credited in the 2019 Progress scenario, the number of BMPs estimated to be eligible for credit, and the agency's data quality rating. The following observations note potential concerns about the BMP record in CAST compared to the agency's BMP record:

Maryland. The Maryland Department of the Environment (MDE) omitted some records, including federal BMPs, in the 2019 Progress reporting due to an error in their data management system. According to the DoD BMP Crediting Report for Maryland, this impacted at least 300 DoD BMPs. For this reason, DoD indicated that the data record in Maryland has Medium completeness and accuracy.

Virginia. DoD reported over 1,300 BMPs to the Department of Environmental Quality (DEQ) BMP Warehouse. However, only 50 BMPs are credited in the 2019 Progress scenario. Many DoD BMPs, which have a State Unique ID starting with "DOD-", "USN-", or "NAVFAC-", are included in the 2019 Progress scenario but are credited as "Nonfederal." For this reason, DoD indicated that the data record in Virginia has Low completeness and accuracy.

Washington, D.C. DoD annually reports all implemented BMPs in Washington, D.C. to the District Department of Energy and the Environment (DOEE). However, DOEE reports to CAST from its own



internal record system built from approved plan sets submitted by individual facilities, which are required to comply with local stormwater regulations, and voluntary BMPs submitted by federal agencies through the annual progress reporting process. DoD and DOEE have not successfully reconciled the two datasets to confirm the status of individual BMPs. For this reason, the agency rates the quality of the data in Washington, D.C. as Low.

DOEE has indicated that the DoD BMP record in CAST includes 77 BMPs from DoD, 5 BMPs from the U.S. Army Corps of Engineers, and 43 BMPs from the U.S. Navy. U.S. Navy BMPs are reported through the DoD Chesapeake Bay Program (CBP) and are therefore correctly credited under the DoD agency code. The DoD CBP does not report BMPs from the U.S. Army Corps of Engineers; these should be labeled as Other Federal.

West Virginia. DoD BMPs have not been credited in West Virginia. Based on discussion with the West Virginia Department of Environmental Protection (WV DEP), federal BMPs may not be assigned to federal agencies in CAST.

2.4.1.2 Credited BMPs

Table 2-4 includes a summary of the BMP types that were credited for only a portion of the amount submitted. In most cases, a lack of credit for BMP implementation is due to excess, meaning that the submitted BMP amount exceeds the amount of available land to apply the BMP type at the scale it was reported in CAST. In the case of the Forest Harvesting Practices BMP reported in Pennsylvania, the BMP is not credited because federal agencies are not assigned land under the Harvested Forest load source group.



Table 2-4. DoD BMPs Submitted versus Credited Summary

Jurisdiction	Unit	BMP	Total Amount Submitted	Total Amount Credited	Percent Credited (%) ^a
Maryland	Acres Treated	Stormwater Performance Standard-Stormwater Treatment	2,445.90	2,416.2	98.8
New York	Acres Treated	Bioretention/raingardens - A/B soils, underdrain	2.0	0.9	46.7
New York	Acres Treated	Infiltration Practices w/ Sand, Veg. - A/B soils, no underdrain	16.2	7.6	46.7
Pennsylvania	Acres	Forest Harvesting Practices	700.0	0	0
Pennsylvania	Acres Treated	Infiltration Practices w/ Sand, Veg. - A/B soils, no underdrain	831.7	33.3	4.0
Pennsylvania	Acres Treated	Wet Ponds and Wetlands	23,911.10	2,922.4	12.2
Pennsylvania	Acres Treated	Filtering Practices	1.0	0.3	31.2
Pennsylvania	Acres Treated	Stormwater Performance Standard-Stormwater Treatment	319	129.8	40.7
Pennsylvania	Acres Treated	Stormwater Performance Standard-Runoff Reduction	354.8	297.3	83.8
Pennsylvania	Acres Treated	Bioretention/raingardens - C/D soils, underdrain	0.3	0.3	87.6
Pennsylvania	Acres Treated	Vegetated Open Channels - A/B soils, no underdrain	1.8	1.6	87.7
Pennsylvania	Acres Treated	Dry Extended Detention Ponds	47.0	41.3	88.0
Pennsylvania	Acres Treated	Bioretention/raingardens - A/B soils, underdrain	6.7	6.1	90.8
Pennsylvania	Acres Treated	Dry Detention Ponds and Hydrodynamic Structures	1,946.2	1,803.3	92.7
Virginia	Acres	Nutrient Management Plan	1,138.0	691.3	60.7
Virginia	Acres Treated	Permeable Pavement w/ Sand, Veg. - A/B soils, no underdrain	0.1	0.1	92.9
Virginia	Acres Treated	Bioretention/raingardens - A/B soils, underdrain	10.8	10.3	95.9

a. This table includes only BMPs that were not fully credited (i.e., Percent Credited is less than 100%) in the 2019 Progress scenario BMPs Submitted versus Credited Report.

2.4.2 Pollutant Loads

Table 2-5 summarizes the 2019 Progress loads of TN, TP, and TSS for DoD by state basin. As a result of uncredited BMPs excluded from the 2019 Progress scenario in Maryland, Virginia, and West Virginia, the loads in these jurisdictions are higher than if those BMPs were properly credited and attributed to DoD. With the unresolved issues between the DoD and DOEE BMP records in Washington, D.C., and the agency code issue with DoD BMPs in CAST, it is not clear if the actual DoD load is higher or lower than that in the 2019 Progress scenario.



Table 2-5. DoD 2019 Progress Loads (lbs/year)

Jurisdiction	EOS		EOT			
	TN	TP	TSS	TN	TP	TSS
DC Potomac River Basin	12,183	964	1,793,313	11,662	1,052	1,986,229
MD Eastern Shore of Chesapeake Bay	10,572	710	48,817	19,225	6,851	30,030,580
MD Patuxent River Basin	80,045	7,914	10,377,115	77,807	15,261	45,796,378
MD Potomac River Basin	117,583	12,227	27,966,624	125,769	32,244	128,785,173
MD Susquehanna River Basin	1,044	56	178,199	982	43	61,513
MD Western Shore of Chesapeake Bay	138,515	19,696	25,559,392	171,888	55,031	209,851,307
NY Susquehanna River Basin	17,229	2,142	3,501,038	7,651	819	853,797
PA Potomac River Basin	43,839	5,263	11,384,829	38,169	3,490	5,948,541
PA Susquehanna River Basin	402,429	32,568	56,308,266	267,523	10,855	9,626,087
VA Eastern Shore of Chesapeake Bay	87	10	11,124	78	7	1,494
VA James River Basin	204,246	21,392	18,264,383	195,151	32,975	86,327,296
VA Potomac River Basin	233,446	43,462	83,101,680	171,662	34,770	65,866,057
VA Rappahannock River Basin	116,246	15,187	30,712,816	83,935	7,691	2,891,342
VA York River Basin	148,729	17,289	27,974,837	87,285	13,117	33,070,925

2.5 GSA

GSA is assigned land located in Maryland (1,787 acres, 58 percent developed), Washington, D.C. (518 acres, 98 percent developed), and Virginia (300 acres, 73 percent developed). A small amount of land is in West Virginia (6.9 acres, 99 percent developed), Pennsylvania (4.4 acres, 99.7 percent developed), and New York (0.6 acres, 99.9 percent developed).

2.5.1 BMP Implementation

2.5.1.1 BMP Inputs

Only 83 BMPs are assigned to GSA in the 2019 Progress scenario with 15 reported BMPs in Maryland and 68 reported BMPs in Washington, D.C. The GSA National Capital Region (NCR), which includes GSA facilities in the Washington, D.C. metropolitan area, provided BMP records from the Suitland and White Oak facilities in Maryland. GSA Region 3 did not provide BMP information for GSA facilities in parts of Maryland, Pennsylvania, Virginia, and West Virginia to assess the completeness of the BMP record in those states. Table 2-6 includes the number of BMPs credited to GSA in the 2019 Progress scenario and the estimated number of BMPs that were eligible for credit. The agency did not provide a rating of the overall data quality.

Table 2-6. Number of GSA BMPs Credited in 2019 Progress vs. GSA BMP Records			
Jurisdiction	BMPs in 2019 Progress	Estimate of BMPs Eligible for Credit	Data Rating
Maryland	15	61	N/A
New York	0	Unknown	Unknown
Pennsylvania	0	Unknown	Unknown
Virginia	0	Unknown	Unknown
Washington, D.C.	68	Unknown	Unknown
West Virginia	0	Unknown	Unknown

Maryland. GSA NCR reported 70 BMPs to MDE for 2019 Progress. A review of BMP data provided by GSA NCR indicated that 53 BMPs at the White Oak laboratory were reported in 2019, and 17 BMPs were reported at the Suitland facility in 2019. Of those BMPs, four BMPs do not have drainage area information, and five BMPs reported in 2019 include a failed inspection with no corrective maintenance. Based on correspondence between EPA and GSA staff, BMP implementation and maintenance is an ongoing concern, and some BMPs that have failed inspections need to be removed. Despite this concern, the 2019 Progress scenario appears to significantly undercount the number of BMPs at GSA facilities in Maryland.

In addition, GSA recognizes that its reported historical record does not represent all BMPs located at its facilities. GSA NCR indicates that BMP maintenance and repair is complete or scheduled for 200 BMPs at the region's main campuses and 100 BMPs at smaller facilities. In FY2021, GSA plans to conduct a technical study at the Saint Elizabeth facility to locate BMPs on the site. Other assessments are also planned through the end of FY2021 to report BMPs identified through the technical studies.

Washington, D.C. Because no BMP record was provided by GSA in Washington, D.C., the accuracy and completeness of the dataset compared to the agency's internal records cannot be assessed.

2.5.1.2 Credited BMPs

All BMPs that are included in the CAST 2019 Progress scenario for GSA are fully credited.

2.5.2 Pollutant Loads

Table 2-7 summarizes the 2019 Progress loads of TN, and TP, and TSS for GSA by state basin. Based on the results in Table 2-6, the loads in Maryland do not reflect GSA's eligible BMPs; therefore, the 2019 Progress loads overestimate the pollutant loads from the agency's land.

Table 2-7. GSA 2019 Progress Loads (lbs/year)

Jurisdiction	EOS			EOT		
	TN	TP	TSS	TN	TP	TSS
DC Potomac River Basin	1,946	130	207,580	1,908	124	162,451
MD Eastern Shore of Chesapeake Bay	11	0.3	174	10	0.3	53
MD Patuxent River Basin	101	7	8,791	85	5	3,021
MD Potomac River Basin	5,500	574	1,283,539	4,641	528	1,140,794
MD Western Shore of Chesapeake Bay	8,161	531	781,796	6,525	380	322,155
NY Susquehanna River Basin	9	0.4	2,021	5	0.1	427
PA Potomac River Basin	0.5	0.03	41	0.5	0.02	21
PA Susquehanna River Basin	35	1.5	7,356	23	0.5	1,502
VA James River Basin	121	11	15,009	105	9	9,646
VA Potomac River Basin	1,526	146	225,337	1,143	98	63,623

2.6 NASA

NASA is assigned 1,229 acres in Maryland and 516 acres in Virginia in CAST. In Maryland, 386 acres (31 percent) are assigned to the Developed source sector, and in Virginia, 327 acres (63 percent) are in the Developed sector.

2.6.1 BMP Implementation

2.6.1.1 BMP Inputs

The Virginia BMP record from the NASA Langley Research Center in Virginia includes 33 BMPs. Of the 33 BMPs, four are expired annual practices (e.g., storm drain cleaning, street cleaning) or practices not credited to federal agencies (e.g., erosion and sediment control). Annual BMPs, such as street cleaning and storm drain cleaning, have a credit duration of one year and are, therefore, only credited when reported for the current progress year. Annual BMPs from previous progress years will not be included in CAST. Because federal agencies are not assigned land in the Construction load source group, erosion and sediment control BMPs will also not be included in CAST for federal agencies.

Therefore, it is expected that 29 BMPs would be eligible for credit in the 2019 Progress scenario. However, only three impervious surface reduction BMPs are credited to NASA in Virginia in the 2019 Progress scenario. Table 2-8 includes the number of BMPs credited in the 2019 Progress scenario, the estimated number of BMPs that were eligible for credit, and the data quality rating provided by the agency.

Table 2-8. Number of NASA BMPs Credited in 2019 Progress vs. NASA BMP Records

Jurisdiction	BMPs in 2019 Progress	Estimate of BMPs Eligible for Credit	Data Rating
Maryland	29	29	Medium
Virginia	3	29	Low



Maryland. NASA has reported 30 BMPs at the Goddard Space Flight Center in Maryland. One BMP does not have drainage area information and is marked for removal, so only 29 practices would be expected to be credited in Maryland. However, NASA staff indicated that the drainage area information of some BMPs in CAST does not match what was reported to MDE. For this reason, the data quality is rated by the agency as Medium.

Virginia. The spreadsheet provided by NASA for 2019 BMP reporting included 27 BMPs on the NASA Historical Record sheet and 6 BMPs on the NASA 2019 Progress sheet for a total of 33 BMPs. The historical record includes two expired annual BMPs (storm drain and street cleaning) and one erosion and sediment control practices that would not be credited in the 2019 Progress scenario. The progress record also includes an erosion and sediment control BMP that would not be credited to the agency in CAST. Therefore, excluding those four BMPs from the total of 33, 29 BMPs would be expected to have received credit, assuming that the data was entered in the appropriate template and reported to DEQ. However, only three BMPs are credited to NASA in the 2019 Progress scenario; therefore, the data quality for NASA in Virginia is rated by the agency as Low.

2.6.1.2 Credited BMPs

Table 2-9 includes a summary of the BMP types that were credited for only a portion of the amount submitted. In most cases, a lack of credit for BMP implementation is due to excess, meaning that the submitted BMP amount exceeds the amount of available land for the BMP at the scale it was reported in CAST.

Jurisdiction	Unit	BMP	Total Amount Submitted	Total Amount Credited	Percent Credited (%)
Maryland	Acres Treated	Dry Detention Ponds and Hydrodynamic Structures	10.3	5.2	50
Maryland	Acres Treated	Wet Ponds and Wetlands	513.2	277.1	54
Maryland	Acres Treated	Stormwater Performance Standard-Stormwater Treatment	75.6	61.7	82

2.6.2 Pollutant Loads

Table 2-10 summarizes the 2019 Progress loads of TN, TP, and TSS for NASA by state basin. Based on the results in Table 2-8, the modeled loads in Maryland generally capture the implementation of NASA BMPs, though not all BMPs included in the 2019 Progress scenario are fully credited (Table 2-9). In Virginia, the implementation of only three NASA BMPs is captured in the 2019 Progress scenario loads; therefore, loads in the VA York River Basin are biased higher.

Jurisdiction	EOS			EOT		
	TN	TP	TSS	TN	TP	TSS
MD Patuxent River Basin	1,144	88	89,012	461	62	35,007
MD Potomac River Basin	3,391	337	617,728	2,771	348	523,830
VA York River Basin	5,034	483	447,950	4,096	376	347,197



2.7 NPS

NPS is assigned over 358,000 acres across the Chesapeake Bay watershed in CAST, including 44,836 acres in Maryland, 14,446 acres in Pennsylvania, 287,100 acres in Virginia, 8,152 acres in Washington, D.C., and 3,763 acres in West Virginia. Of that land, only 16,475 acres are Developed, meaning that the majority of NPS land is part of the Natural source sector. NPS controls only 3,755 acres of developed land in Maryland (8 percent), 1,307 acres in Pennsylvania (9 percent), 7,717 acres in Virginia (3 percent), 3,217 acres in Washington, D.C. (40 percent), and 472 acres in West Virginia (13 percent).

2.7.1 BMP Implementation

2.7.1.1 Credited BMPs

The 2019 Progress scenario included 26 NPS BMPs in Washington, D.C. Table 2-11 includes the number of BMPs credited in the 2019 Progress scenario, the estimated number of NPS BMPs that were eligible for credit, and the data quality rating assigned by the federal agency.

Jurisdiction	BMPs in 2019 Progress	Estimate of BMPs Eligible for Credit	Data Rating
Maryland	0	0	Low
Pennsylvania	0	0	Low
Virginia	0	3	Low
Washington, D.C.	26	34	Low
West Virginia	0	0	Low

The NPS provided a current spreadsheet with BMPs installed in Washington, D.C., Maryland, Virginia, and West Virginia through 2020 with which to assess the 2019 Progress scenario inputs. The agency rated the BMP data in the 2019 Progress scenario across all jurisdictions as Low.

Maryland. The NPS tracks 28 BMPs in Maryland, including agricultural and septic BMPs, which would not be credited to federal agencies. The other BMPs in the record are missing required information; the most common omissions are the installation date of the BMP, the BMP drainage area or extent, and the latitude and longitude coordinates. Therefore, these practices are not expected to have been credited in the 2019 Progress scenario.

Virginia. The BMP record provided by NPS includes 34 BMPs in Virginia. The list includes some ineligible BMP types (stream fencing, land retirement, and septic system pumping), and many of the remaining practices are missing required information, such as the BMP installation date. Three BMPs appear to include sufficient information to have been successfully reported in the 2019 progress year, but the spreadsheet indicates that they have not been reported to DEQ. Therefore, these practices are not expected to be included in the 2019 Progress scenario.

Washington, D.C. NPS tracks 62 BMPs in Washington, D.C., including 26 records with “DC Data” marked as the Data Source. (Other records are labeled as “DC GIS”, “NPS Plan”, and “Questionnaire”.) The data is formatted similar to the DOEE reporting template, and most BMPs appear to include the required information. Of the 62 records, 38 have a listed installation date prior to the end of the 2019 progress year (June 30, 2019). However, it is not clear if those records were



submitted as a part of 2019 progress reporting. Additionally, four of those BMPs include a comment that they are located in the combined sewer system area and therefore not reported. Therefore, a maximum of 34 BMPs may have been credited from NPS as a part of the 2019 Progress scenario. Only 26 BMPs are included in the 2019 Progress scenario.

NPS noted that from their review of the BMP inputs to the 2019 Progress scenario showed two BMP (an open channel and permeable pavement, DC ID #5139) near the C&O Canal that are not on the agency's list of BMPs. The 2019 Progress scenario also includes some BMPs in Oxon Run Park (DC ID #3077), which is not an NPS site.

West Virginia. There are six BMPs listed in West Virginia. One BMP is a Stormwater Pollution Prevention and Groundwater Protection Plan, which is not an eligible BMP type. The remaining BMPs are missing required data, including the date installed and the drainage area information for the BMP. Therefore, these practices are not expected to be included in the 2019 Progress scenario.

2.7.2 Pollutant Loads

Table 2-12 summarizes the 2019 Progress loads of TN, TP, and TSS for NPS by state basin. Because it appears that some NPS BMPs are not credited in Virginia and Washington, D.C., the loads in those jurisdictions are higher than if the BMPs were included. In Maryland, Pennsylvania, and West Virginia, the loads in Table 2-12 reflect the BMPs expected to be credited but not the number of BMPs actually implemented at NPS facilities in those jurisdictions.

Jurisdiction	EOS			EOT		
	TN	TP	TSS	TN	TP	TSS
DC Potomac River Basin	37,733	4,405	9,814,949	35,843	4,676	10,374,039
MD Patuxent River Basin	2,903	250	479,744	2,180	204	113,693
MD Potomac River Basin	121,367	13,855	27,205,073	116,981	19,666	66,313,459
MD Western Shore of Chesapeake Bay	971	73	94,709	704	134	422,133
PA Potomac River Basin	27,708	5,495	6,354,348	17,796	3,305	2,661,045
PA Susquehanna River Basin	22,572	1,565	3,127,523	14,129	592	510,621
VA James River Basin	108,239	15,558	37,974,540	54,901	8,199	17,889,952
VA Potomac River Basin	249,300	35,222	81,369,722	184,220	36,402	101,174,531
VA Rappahannock River Basin	126,018	17,820	38,514,656	72,876	13,232	29,474,712
VA York River Basin	53,314	11,385	16,465,862	27,212	6,475	10,282,049

2.8 Smithsonian Institution

The Smithsonian Institution is assigned 789 acres in Maryland, including 142 developed acres; 2,901 acres in Virginia, including 159 developed acres; and 147 acres in Washington, D.C., including 147 developed acres.

2.8.1 BMP Implementation

The 2019 Progress scenario includes 22 BMPs assigned to the Smithsonian Institution from regulated projects subject to local requirements in Washington, D.C. The Smithsonian Institution did not report any voluntary BMPs to DOEE as a part of 2019 or 2020 reporting. Despite attempts to



contact the agency, BC and EPA were not able to verify if the 2019 Progress scenario accurately reflects the number of BMPs that ought to be credited to the agency.

2.8.2 Pollutant Loads

Table 2-13 summarizes the 2019 Progress loads of TN, TP, and TSS for the Smithsonian Institution by state basin.

Jurisdiction	EOS			EOT		
	TN	TP	TSS	TN	TP	TSS
DC Potomac River Basin	344	87	171,004	282	59	70,749
MD Potomac River Basin	603	61	113,050	531	50	50,288
MD Western Shore of Chesapeake Bay	2,172	316	549,303	2,209	451	1,293,957
VA Potomac River Basin	5,435	716	1,871,243	4,908	524	1,164,672

2.9 US FWS

The US FWS is assigned land in Maryland (28,399 acres), Pennsylvania (164 acres), Virginia (24,971 acres), and West Virginia (626 acres). The acres of developed land by state are 1,302 acres in Maryland (5 percent), 23 acres in Pennsylvania (14 percent), 601 acres in Virginia (2 percent), and 153 acres in West Virginia (24 percent).

2.9.1 BMP Implementation

2.9.1.1 Credited BMPs

The 2019 Progress scenario includes 27 US FWS BMPs with 21 BMPs in Maryland, 5 BMPs in Pennsylvania, and 1 BMP in Virginia. The US FWS provided two sources of BMP information: a master list of all practices implemented at US FWS facilities (the All USFWS BMP List) and the agency's 2020 progress submissions. Those spreadsheets indicate that the agency has BMPs in Maryland, Pennsylvania, Virginia, and West Virginia. Table 2-14 includes the number of BMPs credited in the 2019 Progress scenario, the estimated number of BMPs that were eligible for credit, and the data quality rating provided by the agency.

Jurisdiction	BMPs in 2019 Progress	Estimate of BMPs Eligible for Credit	Data Rating
Maryland	21	22	Medium
Pennsylvania	5	2	Medium
Virginia	1	10	Medium
West Virginia	0	1	Medium

The agency indicated that the 2019 Progress scenario is reasonably accurate for 2019 progress BMPs, but it does not include historical BMPs. For this reason, they rated the quality of the data in the 2019 Progress scenario as Medium.



Maryland. The agency's 2020 progress submission does not include BMPs installed before June 30, 2019. Of the practices and programs listed in the All USFWS BMP List, about 22 rows describe practices that correspond to eligible BMP types, include some metric for the BMP drainage area or quantity, and specify a date installed. However, because the All USFWS BMP List is not in the Maryland reporting template, a full assessment of the reportability of the data cannot be completed, and BC cannot confirm what data was submitted to MDE as a part of 2019 reporting.

Pennsylvania. The All USFWS BMP List includes 12 practices and programs in Pennsylvania. Most of the projects are related to water quality monitoring or wastewater improvements. There are two BMPs that appear to be eligible for credit: a vegetated treatment area or filter strip and an established riparian buffer. It is not clear if these entries correspond to individual BMPs or if multiple are consolidated in a single row.

Virginia. The All USFWS BMP List includes over 100 practices and programs at US FWS sites in Virginia. Of that total, about 10 practices may be eligible for credit with enough information to successfully report to DEQ.

West Virginia. Most of the 26 practices tracked in the All USFWS BMP List at West Virginia facilities are agricultural BMPs, water conservation measures, or related to wastewater treatment. Only one BMP appears to include sufficient information to be successfully reported.

2.9.1.2 BMP Crediting

All BMPs that are included in the CAST 2019 Progress scenario for US FWS are fully credited.

2.9.2 Pollutant Loads

Table 2-15 summarizes the 2019 Progress loads of TN, TP, and TSS for US FWS by state basin. At a minimum, the loads in Virginia and West Virginia do not reflect the reductions achieved from the implementation of BMPs in those jurisdictions. BMP inputs in Maryland and Pennsylvania appear to generally correspond to the federal agency's BMP record; therefore, the loads in these jurisdictions should reflect the BMP implementation.

Jurisdiction	EOS			EOT		
	TN	TP	TSS	TN	TP	TSS
MD Eastern Shore of Chesapeake Bay	128,102	15,674	19,544,589	142,143	26,643	74,694,037
MD Patuxent River Basin	34,731	5,260	10,469,988	26,155	4,349	2,420,298
MD Potomac River Basin	786	99	181,148	634	101	153,689
MD Susquehanna River Basin	420	19	14,008	2,052	1,189	5,728,633
PA Susquehanna River Basin	852	68	193,933	592	27	47,191
VA Eastern Shore of Chesapeake Bay	1,342	148	123,125	2,500	1,017	4,370,560
VA James River Basin	26,276	3,179	4,279,509	27,020	6,100	20,883,792
VA Potomac River Basin	4,874	865	1,628,221	9,560	4,401	18,977,749
VA Rappahannock River Basin	12,824	1,704	3,025,730	14,761	4,091	16,838,883
VA York River Basin	5,876	1,856	4,140,001	14,611	7,850	33,579,409



2.10 USFS

The USFS owns 1,195,138 acres in Virginia; of those, only 4,313 acres or 0.4 percent are part of the Developed source sector. In West Virginia, the agency owns 267,280 acres, of which 4,525 acres or 2 percent are developed.

2.10.1 BMP Implementation

The 2019 Progress scenario does not include any BMPs for the USFS. The USFS provided a copy of the 2020 progress submission in Virginia, which included five BMPs implemented before June 30, 2019. However, the reported BMP types are floodplain restoration on pasture, which is not a credited practice for federal agencies due to the lack of pasture acres for federal agencies in CAST.

USFS did not provide a BMP record for West Virginia, so BC and EPA were not able to verify if the 2019 Progress scenario accurately reflects the number of BMPs that ought to be credited to the agency in that state.

2.10.2 Pollutant Loads

Table 2-16 summarizes the 2019 Progress loads of TN, TP, and TSS for USFS by state basin.

Jurisdiction	EOS			EOT		
	TN	TP	TSS	TN	TP	TSS
VA James River Basin	1,741,403	226,366	474,146,240	622,336	90,644	131,824,525
VA Potomac River Basin	650,103	70,493	142,714,141	329,495	37,431	57,174,724

2.11 Conclusions

Table 2-17 summarizes the results of the BMP data comparison between the 2019 Progress scenario and the federal agency BMP data. The table includes a ratio of the number of BMPs credited to the agency to the number of BMPs estimated to be eligible for credit. The cells are color-coded based on the data quality rating, as assigned by the federal agency:

- Gray indicates that no data rating was assigned by the federal agency.
- Green represents a High data quality based on the number of BMPs credited versus the number of eligible BMPs.
- Gold represents a Medium data quality based on the number of BMPs credited versus the number of eligible BMPs or the accuracy of the data in the 2019 Progress scenario.
- Red represents a Low data quality based on a lack of BMP representation in the 2019 Progress scenario or low data accuracy.

Agency/State	MD	NY	PA	VA	DC	WV
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 / 3	26 / 34	0 / 6
Smithsonian	0 / Unknown			0 / Unknown	22 / Unknown	
US FWS	21 / 22		5 / 2	1 / 10		0 / 1
USFS				0 / 0		0 / Unknown

a. Table shows the ratio of the number of credited BMPs to the number of eligible BMPs. The color indicates the data rating assigned by the federal agency.

Based on the results in Table 2-17, the following observations should inform the assessment of remaining effort for federal agencies and next steps for both federal agencies and the jurisdictions:

- **Federal agencies generally have low or medium confidence in the accuracy and completeness of the 2019 Progress BMP inputs.** Intentional coordination between federal agencies and the jurisdictions could lead to credit for existing BMPs in future progress years. Therefore, the evaluation of the additional effort required by federal agencies from the 2019 Progress loads may be reduced by improved reporting.
- **The greatest confidence exists for BMPs reported in Pennsylvania.** The load results for federal agencies in the 2019 Progress scenario are most likely to accurately reflect the actual progress achieved.
- **There is not enough information to assess the data record in Washington, D.C. due to a lack of response from three of five agencies in the District.** However, both NPS and DoD ranked the data quality as low. Discussions between DoD and DOEE are ongoing to address concerns about the DoD and the DOEE BMP records. NPS and DOEE are encouraged to collaborate to address questions and concerns regarding that agency's dataset. DOEE is also working to address the reporting of BMPs that are part of a treatment train, which may be reported with a contributing drainage area of 0 acres and excluded from CAST.
- **In Maryland, federal agencies noted missing records and incorrect information associated with some BMPs.** MDE has experienced issues with its data reporting system, which should be resolved. In March 2021, MDE indicated the issues with the system had been corrected.
- **The least confidence exists for BMP records reported in Virginia.** There are low BMP counts for federal agencies in Virginia in the 2019 Progress scenario, despite the considerable amount of federal agency land in the state (over 1.7 million acres). DEQ has had difficulties assigning federal agency codes to BMPs reported by the federal community in past progress years. At a minimum, a number of DoD BMPs were labeled as non-federal in the final 2019 Progress scenario. DEQ has indicated that this issue will be resolved in the 2020 Progress scenario.
- **BMPs are not credited in West Virginia.** Despite the presence of five agencies, there are no BMPs credited to federal landholders. Based on correspondence with the jurisdiction, it is possible that federal BMPs may not be assigned to the correct agency.
- **Data management contributes to underreporting and lack of credit.** Some agencies did not respond to the request for BMP information. Others indicated that it would require an unduly



large effort to compile the agency's full record of implemented BMPs. This indicates that some facilities or agencies are not maintaining a record of BMPs on site and may not be providing annual reporting to jurisdictions. Furthermore, many of the provided datasets were not in the jurisdiction reporting template. While this is not inherently a problem, it can lead to the omission of fields required by jurisdictions, especially for agencies with facilities in multiple jurisdictions.

- **Federal agencies have limited staff and resources for BMP data management and reporting.** Federal agencies are limited by the funding and staff allocated to stormwater programs. This reality supports the need for the use of simple but intentional data management practices.



Section 3

Federal Planning Goals

This section will assess the sources of FPGs for federal agencies, the calculation methodologies, and a comparison of the level of effort needed to each FPG source.

3.1 Background

The jurisdiction Phase II WIPs, which were finalized in 2012, did not consistently include federal facility targets, in part due to concerns about the availability of data and the analytical capabilities of CAST at that time (VA DEQ 2012, 11 & 39) (PA DEP 2012, 38-39). In its review of the 2012-2013 two-year milestones, EPA identified needed improvements to federal agencies' reporting of BMPs. This led to the formation of the Federal Facilities Targets Action Team (FFTAT) which was charged with developing a target setting protocol for federal agencies. The resulting document, the *Protocol for Setting Targets, Planning BMPs and Reporting Progress for Federal Facilities and Lands* (Protocol), described federal facilities subject to target loads, the required data from federal facilities, the methodology for the target calculations, as well as expectations for implementation, reporting, and two-year water quality milestones (Chesapeake Bay Program 2015, 2).

The Protocol defined 2017 and 2025 targets for individual federal facilities. Jurisdictions were given the option to use their own method or to utilize the EPA Default Method developed for the Protocol. Washington, D.C., New York, and Pennsylvania elected to use the default method. Maryland and Virginia used state-specific methods, and West Virginia used the default method only for facilities not covered under a permit with numeric pollutant reduction requirements. The default method calculated the pollutant loading rate per acre by state basin and then determined the required annual reduction in the loading rate (expressed in pounds per acre per year) between 2009 and 2025. Individual facility managers were expected to determine the baseline pollutant load for their facility using Chesapeake Bay Facility Assessment Scenario Tool (BayFAST) to translate the pollutant load rates to actual loads (Chesapeake Bay Program 2015, 2-4).

In 2017, at the midpoint of the Chesapeake Bay TMDL implementation period, EPA made significant changes to the Chesapeake Bay Watershed Model, including the removal of BayFAST from the suite of modeling tools. Development of the jurisdiction Phase III WIPs occurred concurrently. The Local Planning Goals Task Force recommendations, which were approved by the Chesapeake Bay Principal Staff Committee in December 2016 and incorporated into EPA's *Expectations for the Phase III WIPs*, gave jurisdictions the option to define local area planning goals for federal facilities (Local Planning Goals Task Force 2016, 4). In 2018 and 2019, the Federal Facilities Workgroup meetings included discussions about the ongoing development of local area planning goals for federal facilities. Prior to the release of the draft Phase III WIPs, Virginia, Pennsylvania, and Washington, D.C. provided an opportunity for federal agencies to comment on the proposed federal planning goals. Virginia indicated that changes were made to the FPG narrative following this comment period. There is no record of any agreements, votes, or other consensus regarding the FPG development by the Federal Facilities Workgroup (Federal Facilities Workgroup 2018).

Ultimately, the Phase III WIP FPG methodologies varied by jurisdiction.

- Maryland does not address or identify FPGs for federal agencies in its Phase III WIP document, though permitted facilities would be subject to permit requirements.



- New York incorporated the 2015 Protocol reduction goals by reference.
- Pennsylvania and Washington, D.C. utilized an approach similar to the EPA Default Method.
- Virginia set FPGs for reductions from unregulated land and documented that all regulated lands will be subject to the reductions specified in the municipal separate storm sewer system (MS4) permit.
- West Virginia states it did not define FPGs for federal agencies.

During the development of the Phase III WIPs and since their approval in December 2019, federal agencies have raised concerns about the clarity and equity of some FPGs. Furthermore, some Phase III WIPs (Maryland, New York, and West Virginia) do not include numeric targets for federal agencies to quantitatively assess their progress. For these reasons, EPA updated the Protocol's default method calculations for this task, incorporating the latest land use data and scenarios from CAST. The results of these updated calculations are discussed and included later in this section.

In each instance where the jurisdictions have provided a method for calculating FPGs, EPA is facilitating a process to affirm that all parties (i.e., jurisdictions, EPA, and the federal community) agree that the FPGs are fair and equitable. For cases where the jurisdiction has not defined an FPG, EPA recommends the use of the updated EPA Default Method FPGs until consensus is reached around an appropriate FPG.

3.2 Potential Sources of FPGs

This section will compare the methodology used to develop three potential sources of FPGs for federal agencies: the updated EPA Default Method, the Phase III WIP documents, and the WIP 3 Final CAST scenario developed based upon the jurisdictions' Phase III WIP strategies reported to EPA.

3.2.1 EPA Default Method

The Protocol default method defined federal facility targets as an annual change in the pollutant loading rate (in lbs/acre/year) from the Developed source sector by state basin between 2009 and 2025. The 2009 and 2025 loads were assessed using the 2009 Progress scenario and the 2025 WIP scenario, which was based on the inputs provided by the jurisdictions for the Phase II WIPs (Chesapeake Bay Program 2015, 9). The federal facility targets were presented to federal agencies as the expected change in the pollutant loading rate (in lbs/acre/year) between 2009 and 2017 and the expected change in the pollutant loading rate between 2017 and 2025. The 2025 target is also expressed as a percent reduction from 2017. For example, Defense Depot Susquehanna in York County, Pennsylvania, was expected to reduce the pollutant loading rate by 0.339 lbs/acre/year between 2009 and 2017 and by an additional 0.226 lbs/acre/year between 2017 and 2025. The change in the pollutant loading rate between 2017 and 2025 represents a 21 percent change.

The Protocol documents stipulates that targets, "developed prior to the 2017 Midpoint Assessment and modeling calibration should be considered interim as they may change with future model revisions" (Chesapeake Bay Program 2015, 1) Therefore, EPA acknowledged that the 2025 targets in the Protocol might change during the development of the Phase III WIPs, due to the development of the Phase 6 Chesapeake Bay Watershed Model (CAST), and other aspects of the Midpoint Assessment.

The updated EPA Default Method builds on the Protocol approach. The FPGs are defined as a percent reduction from the 2019 Progress loads, as defined in CAST-2019. The percent reduction is calculated from the percent difference between the 2019 Progress and the WIP 3 Final scenario (as run in CAST-2017d, see Section 3.2.4) loads for the Developed and Natural source sectors on non-



federal land by state basin. The percent reduction only includes these source sectors because the Developed and Natural source sectors are the only sources assigned to federal agencies in CAST. This modification avoids penalizing federal agencies for not having assigned loads for, or the potential to create reductions from, other source sectors, such as Agriculture or Wastewater. Furthermore, because the percent reductions are based on the prescribed level of effort for non-federal partners, it provides greater assurance of equity between federal and non-federal land.

3.2.2 Phase III WIP Documents

This section will briefly describe the methods used by the jurisdictions to set FPGs for federal agencies in the Phase III WIP documents.

3.2.2.1 Maryland

Maryland coordinated closely with stakeholders to develop local area planning goals based on proposed BMP implementation identified by the local partners (MDE 2019, C-1-C-49). However, Maryland did not assign local area planning goals to federal facilities and does not specifically address expectations for federal agencies in the Phase III WIP document. Federal sites covered under the MS4 General Permit for State and Federal Agencies are subject to nutrient and sediment reduction requirements (MDE 2019, 28), which call for the additional treatment of 20 percent of existing impervious developed land. However, the expected load reductions from the MS4 permits are not quantified in the Phase III WIP document. The 20 percent treatment requirement is consistent with the interim approach documented by Maryland in the Protocol, but those interim target loads and reductions are now out of date (Chesapeake Bay Program 2015, 10-13). The ambiguity in the Phase III WIP is not equitable compared to the process followed for local areas and creates the potential for confusion regarding the state's expectations for federal agencies through 2025.

3.2.2.2 New York

New York developed local area planning goals based the available land for BMP implementation and the difference in loads between the 2018 Progress and the jurisdiction's 2025 implementation scenario. However, the State Department of Environmental Conservation (NYSDEC) did not define federal planning goals. Instead, the Phase III WIP document referenced the reduction requirements developed in the Protocol (NYSDEC 2019, 134). As mentioned previously, the Protocol utilized modeling tools that have since been updated and was intended to provide only interim goals.

3.2.2.3 Pennsylvania

In the Pennsylvania Phase III WIP, federal and non-federal entities are expected to reduce an equivalent percentage (73.92 percent) of the controllable load, which is defined as the difference between the 2010 No Action and the 2010 E3 scenarios (PA DEP 2019, 26). This is a mathematically equal, but not equitable, level of effort for federal partners. Non-federal partners, like local counties, can apply BMPs and policies to reduce loads from the Agriculture and Wastewater source sectors, among others, to achieve the local area planning goals. To date, significant reductions have been achieved by reducing pollutant loads from wastewater treatment plants, and large reductions are anticipated from agricultural lands through 2025. Because only Developed and Natural acres are assigned to federal agencies, they are limited to a smaller suite of BMPs to reduce pollutant loads. When DoD attempted to develop a scenario to meet the FPG documented in the Phase III WIP, it could not create an implementation scenario that achieved the specified reductions.

This concern was documented in the Phase III WIP, and discussions between EPA, Pennsylvania Department of Environmental Protection (PA DEP), and the federal community are ongoing about

revisions to the FPGs. Due to the ongoing conversation about the feasibility of the original FPGs and the pending changes to the Pennsylvania Phase III WIP, these FPGs are considered interim and will not be included in the level of effort evaluation in Section 3.3.

3.2.2.4 Virginia

Virginia quantified FPGs as reductions from unregulated land in the Developed and Natural source sector. The FPGs were defined as the difference between the unregulated load in the 2017 Progress scenario and the unregulated load in the 2025 VA Specified WIP II scenario. This methodology is consistent with the approach used for local area planning goals for non-federal planning district commissions and soil and water conservation districts (VA DEQ 2019, 31-32). However, there are ongoing concerns about the proper attribution of federal BMPs to the correct agency code for BMPs reported by the federal community to the DEQ BMP Warehouse and those transformed into the Warehouse from the state's Stormwater Construction General Permit database. Though there are reporting errors in the 2017 Progress scenario that attribute federal BMPs to non-federal partners, once the issues are corrected, federal agencies will see additional reductions. Therefore, the FPG methodology is considered equitable, pending the needed improvements to the state's reporting system.

In addition to achieving the specified load reductions, federal facilities are also expected to:

- Meet all applicable regulatory requirements (MS4, Industrial Stormwater, Wastewater, Erosion and Sediment Control, Post-Construction Stormwater, and Chesapeake Bay Preservation Act).
- Reduce loads from all agency owned lands managed for agricultural use (45 percent TN reduction goal from 2017 levels).
- Reduce loads from all onsite systems (septic and alternative onsite systems) on federal agency owned lands (6 percent TN reduction goal from 2017 levels).
- Ensure that any forest harvesting is accompanied by implementation of the full suite of silviculture water quality practices.
- Account for and offset any load changes resulting from changes in land use through time.
- Account for and offset the federal agencies share of load changes resulting from climate change. This will be quantified by the Chesapeake Bay Program in 2021. Virginia estimated the additional reduction is 1.72 million pounds of nitrogen and 0.19 million pounds of phosphorus across the entire state (VA DEQ 2019, 132-133).

These narrative expectations were included in the draft FPGs and draft Phase III WIP developed by the jurisdiction. Some of these expectations do not have associated regulatory drivers to help enforce implementation, such as septic system modifications, implementation of BMPs on agricultural land, and the use of forest harvesting practices. In addition, federal agencies do not have mechanisms to report reductions from agricultural, silviculture, and septic sources. Together, these create challenges for federal agencies to implement the additional expectations listed above.

3.2.2.5 Washington, D.C.

In Washington, D.C., DOEE defined FPGs for "major" federal agencies, which include Department of Agriculture (including ARS), DoD, GSA, NPS, and the Smithsonian Institution. The Phase III WIP also specifies a local area planning goal for non-federal land. The distinction of major and other federal agencies was made based on DOEE's assessment of the agencies' ability to track land use, pollutant load, and BMP information (DOEE 2019, 54). DoD disagreed with the designation of FPGs to federal agencies because federal agencies pay a stormwater utility fee to DOEE to implement the MS4 permit, including the Chesapeake Bay TMDL nutrient and sediment reductions. In addition, DOEE



stipulates conditions under which the credit for projects on federal land is claimed by DOEE or divided with the federal agency.

The same calculation methodology was applied for both federal and non-federal goals. DOEE determined the controllable load, which is the difference between the 2010 No Action and the 2010 E3 scenario loads, with the wastewater sector load removed. Then, DOEE applied a percent reduction to the controllable load, which is the required reduction for the federal agency. The percent reduction was higher in the tidal portions of the Anacostia and Potomac River basins. The non-federal local area planning goal includes an additional load reduction of 6,000 pounds TN and 1,028 pounds TP to offset the anticipated effects of climate change. No effort was added to the FPGs for climate impacts (DOEE, 2019, 54-57).

Both federal and non-federal entities in the District pay a stormwater utility fee that is utilized to implement the District's general MS4 permit requirements. DOEE also implements BMPs with the revenue from the stormwater utility fee to reduce pollutant loads. For non-federal entities, projects funded through the stormwater utility fee and projects implemented to comply with stormwater regulations are expected to achieve a general "Nonfederal" reduction goal. The named federal agencies in CAST are also subject to local stormwater regulations and pay the stormwater utility fee. They are also expected to implement water quality improvement projects to achieve FPGs specified for their agency in the Phase III WIP document, which is consistent with EPA's documented expectations for the jurisdiction Phase III WIPs. During the development of the Phase III WIP, DoD expressed concerns about the equity of assigning an FPG while also collecting the stormwater utility fee. DOEE has noted that if federal agencies cannot meet their FPGs through existing and planned BMPs, the agency can discuss opportunities to calculate pollutant reductions for the federal agency from their stormwater fee payment. While this assistance may provide relief if federal agencies cannot meet the specified load reductions, it may merit additional discussion whether this remedy addresses the underlying equity concern noted by DoD. DoD and DOEE should coordinate directly to ensure that any outstanding equity concerns are fully resolved.

3.2.2.6 West Virginia

The West Virginia Phase III WIP did not define FPGs for federal agencies. The WIP notes that federal landowners are subject to the requirements of the Construction Stormwater General Permit and Section 438 of the Energy Independence and Security Act, which addresses stormwater runoff requirements for federal projects. WV DEP will continue to track and report BMPs reported by federal agencies, but no additional implementation is required by the Phase III WIP (WV DEP 2019, 68-69).

3.2.3 Phase III WIP FPG Summary

Table 3-1 includes a summary of the FPGs in the jurisdictions' Phase III WIP documents. The key questions that would inform a discussion about the suitability of the FPGs are:

- Is the FPG defined numerically? Or is a clear method described that the federal agencies could replicate to determine the final load they are expected to achieve?
- Is the FPG considered equitable based on feedback from EPA, the jurisdictions, and federal agencies? If not, why?
- If the equitability of the FPG cannot be assessed, what is the reason?

Table 3-1. Assessment of Phase III WIP FPGs

Jurisdiction	Is the FPG Defined Quantitatively?	Units	Is the FPG Considered Equitable?	Reason
Maryland	No	N/A	Unclear	Lack of documented expectations
New York	No	N/A	Unclear	Outdated modeling tools
Pennsylvania	Yes	Reduction & target load	No	Infeasible load reductions
Virginia	Partial	Reduction	Yes	
Washington, D.C.	Yes	Reduction & target load	No ^a	Use of stormwater fee payment
West Virginia	No	N/A	Yes	

a. This may be resolved through consensus between DOEE, EPA, and the FFWG

3.2.4 WIP 3 Final Scenario

The WIP 3 Final scenario is comprised of BMP implementation data provided by the jurisdictions to demonstrate the load reductions achieved by the strategies described in the Phase III WIPs. The WIP 3 Final scenario was developed in CAST-2017d and used by EPA to evaluate whether the Phase III WIPs would achieve the state planning targets. For this reason, the Chesapeake Bay Program agreed that the results of the scenario in CAST-2017d would remain the official version for future evaluations. Therefore, all references to the WIP 3 Final scenario in this Report refer to the CAST-2017d version, which is labeled as the WIP 3 Official Version scenario in CAST-2019.

Because the scenario was run in CAST-2017d, loads in the Natural source sector are calculated regionally. As a result, federal Natural loads will be impacted by the implementation of BMPs on non-federal land. This will impact the calculated level of effort to reach the WIP 3 Final scenario loads and should be considered when loads from CAST-2019 are compared to this scenario.

Because scenario was constructed by the jurisdictions, the source of the implementation data in the scenario inputs varies. Table 3-2 summarizes if the WIP 3 Final scenario includes BMPs from federal agencies by jurisdiction.

Table 3-2. Presence (Green) & Absence (Red) in the WIP 3 Final Scenario by Agency & Jurisdiction

Agency/State	MD	NY	PA	VA	DC	WV
ARS	✗	✗	✗	✗	✓*	✗
DoD	✓	✗**	✓	✓	✓	✗
GSA	✓	✗	✓*	✗	✓	✗
NASA	✓	✗	✗	✓	✗	✗
NPS	✓*	✗	✗	✓*	✓	✗
Smithsonian	✗	✗	✗	✗	✓	✗
US FWS	✓	✗	✗**	✓	✗	✗
USFS	✗	✗	✗	✗	✗	✗

*Agency did not have BMPs in the 2019 Progress scenario but has BMPs in the WIP 3 Final scenario

**Agency has BMPs in the 2019 Progress scenario but does not have BMPs in the WIP 3 Final scenario



Maryland. The Maryland inputs to its Phase III WIP CAST scenario for local areas were provided by the local stakeholders. It is not clear how the BMP inputs from federal agencies were developed. For example, NPS does not have credited BMPs in the 2019 Progress scenario (see Table 2-1) but is assigned BMPs in the WIP 3 Final scenario for Maryland.

New York. New York developed its 2025 Program Goal scenario with a focus on runoff reduction and stormwater treatment BMPs, erosion and sediment control measures, urban forestry, and urban nutrient management (NYSDEC 2019, 104-105). New York did not include federal facilities in its local planning goal process, which may explain their omission from the 2025 Program Goal scenario. However, the scenario also excludes existing implementation of BMPs at federal facilities (DoD).

Pennsylvania. The Pennsylvania WIP includes statewide implementation, anticipated reductions from Countywide Action Plans, and input from federal agencies. The DoD and US FWS submitted plans to PA DEP to demonstrate how they will meet the federal planning goals (PA DEP 2019, 10). However, only DoD and GSA are included in the jurisdiction's portion of the WIP 3 Final scenario. The WIP 3 Final scenario also does not include current implementation of BMPs by US FWS.

Virginia. During the development of the Phase III WIPs, VADEQ determined that the implementation scenario from the Phase II WIP would meet its current state planning targets. As a part of its outreach, federal agencies were asked to provide a scenario of BMPs to achieve the FPG. According to the Phase III WIP, input from DoD, US NASA, NPS, US FWS, and USFS was incorporated in Virginia's Final WIP III CAST scenario (VA DEQ 2019, 46). Those agencies, excluding USFS, have assigned BMP inputs in the WIP 3 Final scenario.

Washington, D.C. DOEE requested pollutant reduction scenarios in CAST from federal agencies during the development of its Phase III WIP. Though some agencies did not meet the DOEE deadline to submit scenarios, DOEE was committed to incorporating their input upon receipt (DOEE 2019, 62). All landholding federal agencies identified in CAST have assigned BMPs in the WIP 3 Final scenario. Federal agencies, excluding ARS, also have BMP implementation assigned to the correct agency in the 2019 Progress scenario. ARS BMPs are included in the 2019 Progress scenario but under an incorrect agency code. DOEE has clarified that federal agencies are not committed to implement the specific BMPs included in the WIP 3 Final scenario so long as the FPG load reductions are reached; if the FPGs defined in the Phase III WIP are achieved, DOEE's expectations for that federal agency are met.

West Virginia. The West Virginia Phase III WIP scenario (WV WIP3) did not prescribe implementation or retrofits on federal facilities. Given that no BMPs are credited to federal agencies in the 2019 Progress scenario, it is not clear if currently implemented BMPs at federal facilities are included in the WIP 3 Final scenario.

Across the jurisdictions, the WIP 3 Final scenario is inconsistent in the inclusion of existing federal BMPs and federal agency input regarding future implementation. However, because the scenario was a key element in the evaluation of the Phase III WIP, it is included in this comparison as one potential endpoint for federal agencies. It represents the jurisdiction's expectation for federal load reductions through 2025 to achieve state planning targets. The scenario results should be viewed with caution when compared to results from CAST-2019. Because it was run in CAST-2017d, the scenario results will include reductions from the regionalized Natural load source group, which are also influenced by changes in loads from other source sectors.

3.3 Level of Effort Comparison

The level of effort required by federal agencies to achieve the FPGs is presented as the percent reduction required from the 2019 Progress scenario to the Phase III WIP, updated EPA Default Method, and the WIP 3 Final scenario FPGs. All loads are calculated at edge of tide.

3.3.1 Effort by State Basin

Tables 3-3 to 3-10 will compare the percent reduction from the 2019 Progress scenario to the updated EPA Default Method load and the WIP 3 Final scenario by state basin. Because the Phase III WIP FPGs were not calculated at the state basin scale, they are not included in these tables. For each state basin and pollutant pair, the highest remaining reduction value is highlighted in red; the FPG source with the lower level of effort is highlighted in green.

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Patuxent River Basin	2.9%	1.1%	4.6%	5.4%
MD Potomac River Basin	1.0%	4.0%	2.6%	8.3%
DC Potomac River Basin	4.4%	0.4%	6.8%	0.3%

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Eastern Shore of Chesapeake Bay	1.0%	0.6%	0.7%	0.2%
MD Patuxent River Basin	2.9%	5.9%	4.6%	12.0%
MD Potomac River Basin	1.0%	6.5%	2.6%	8.9%
MD Susquehanna River Basin	1.3%	8.3%	3.2%	9.7%
MD Western Shore of Chesapeake Bay	2.5%	8.6%	2.3%	8.9%
NY Susquehanna River Basin	17.4%	0.0%	14.9%	14.1%
PA Potomac River Basin	0.0%	4.0%	0.0%	26.9%
PA Susquehanna River Basin	0.5%	2.1%	0.0%	11.6%
VA Eastern Shore of Chesapeake Bay	11.2%	18.1%	4.1%	31.2%
VA James River Basin	7.2%	15.5%	6.3%	11.4%
VA Potomac River Basin	7.3%	0.4%	6.5%	0.0%
VA Rappahannock River Basin	4.2%	7.8%	2.0%	48.5%
VA York River Basin	7.8%	9.7%	4.4%	10.9%
DC Potomac River Basin	4.4%	13.6%	6.8%	14.5%

Table 3-5. GSA Percent Reductions Required, 2019-2025 (%)

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Eastern Shore of Chesapeake Bay	1.0%	0.001%	0.7%	0.03%
MD Patuxent River Basin	2.9%	0.05%	4.6%	1.1%
MD Potomac River Basin	1.0%	1.2%	2.6%	4.5%
MD Western Shore of Chesapeake Bay	2.5%	0.2%	2.3%	2.5%
NY Susquehanna River Basin	17.4%	0.0%	14.9%	0.0%
PA Potomac River Basin	0.0%	0.1%	0.0%	0.0%
PA Susquehanna River Basin	0.5%	0.0%	0.0%	0.0%
VA James River Basin	7.2%	0.0%	6.3%	0.0%
VA Potomac River Basin	7.3%	0.0%	6.5%	0.0%
DC Potomac River Basin	4.4%	0.8%	6.8%	39.7%
WV Potomac River Basin	0.0%	0.0%	6.1%	0.0%

Table 3-6. NASA Percent Reductions Required, 2019-2025 (%)

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Patuxent River Basin	2.9%	0.06%	4.6%	1.16%
MD Potomac River Basin	1.0%	3.4%	2.6%	12.56%
VA York River Basin	7.8%	13.0%	4.4%	18.90%

Table 3-7. NPS Percent Reductions Required, 2019-2025 (%)

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Patuxent River Basin	2.9%	3.7%	4.6%	23.9%
MD Potomac River Basin	1.0%	1.8%	2.6%	7.7%
MD Western Shore of Chesapeake Bay	2.5%	0.1%	2.3%	0.7%
PA Potomac River Basin	0.0%	3.8%	0.0%	11.2%
PA Susquehanna River Basin	0.5%	2.7%	0.0%	19.4%
VA James River Basin	7.2%	7.0%	6.3%	17.0%
VA Potomac River Basin	7.3%	4.1%	6.5%	8.1%
VA Rappahannock River Basin	4.2%	2.6%	2.0%	7.6%
VA York River Basin	7.8%	7.1%	4.4%	12.2%
DC Potomac River Basin	4.4%	3.5%	6.8%	3.7%
WV Potomac River Basin	0.0%	0.8%	6.1%	11.3%



Table 3-8. Smithsonian Institution Percent Reductions Required, 2019-2025 (%)

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Potomac River Basin	1.0%	0.05%	2.6%	1.1%
MD Western Shore of Chesapeake Bay	2.5%	7.4%	2.3%	13.3%
VA Potomac River Basin	7.3%	3.7%	6.5%	9.8%
DC Potomac River Basin	4.4%	0.0%	6.8%	0.0%

Table 3-9. US FWS Percent Reductions Required, 2019-2025 (%)

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
MD Eastern Shore of Chesapeake Bay	1.0%	0.6%	0.7%	0.2%
MD Patuxent River Basin	2.9%	5.9%	4.6%	12.0%
MD Potomac River Basin	1.0%	6.5%	2.6%	8.9%
MD Susquehanna River Basin	1.3%	8.3%	3.2%	9.7%
PA Susquehanna River Basin	0.5%	1.9%	0.0%	15.5%
VA Eastern Shore of Chesapeake Bay	11.2%	8.9%	4.1%	11.8%
VA James River Basin	7.2%	0.0%	6.3%	16.7%
VA Potomac River Basin	7.3%	0.0%	6.5%	6.1%
VA Rappahannock River Basin	4.2%	9.7%	2.0%	13.2%
VA York River Basin	7.8%	5.9%	4.4%	13.7%
WV Potomac River Basin	0.0%	1.3%	6.1%	12.9%

Table 3-10. USFS Percent Reductions Required, 2019-2025 (%)

Jurisdiction	TN		TP	
	EPA Default Method	WIP 3 Final Scenario	EPA Default Method	WIP 3 Final Scenario
VA James River Basin	7.2%	3.3%	7.2%	18.3%
VA Potomac River Basin	7.3%	4.2%	7.3%	21.3%
WV James River Basin	1.1%	2.5%	1.1%	12.2%
WV Potomac River Basin	0.0%	2.0%	0.0%	17.4%

In general, the EPA Default Method requires a smaller percent reduction than the WIP 3 Final scenario for TP. In 44 out of 61 agency-state basin combinations in Tables 3-3 through 3-8, the EPA Default Method result is less than the WIP 3 Final Scenario for TP. For TN, 29 out of 61 agency-state basin results show the EPA Default Method with a lower TN percent reduction, meaning that the WIP 3 Final Scenario requires a lower level of effort at about the same rate across all federal agencies.



3.3.2 Effort by Jurisdiction

The following graphs (Figures 3-1 to 3-12) compare the percent reduction from the 2019 Progress scenario to the updated EPA Default Method loads, the WIP 3 Final loads, and Phase III WIP FPGs, when numeric goals are available, by jurisdiction. If a bar is not present for an FPG source included in the graph legend, the expected percent reduction is zero, meaning that no additional reductions are required, and the federal agency should maintain the existing load through 2025.

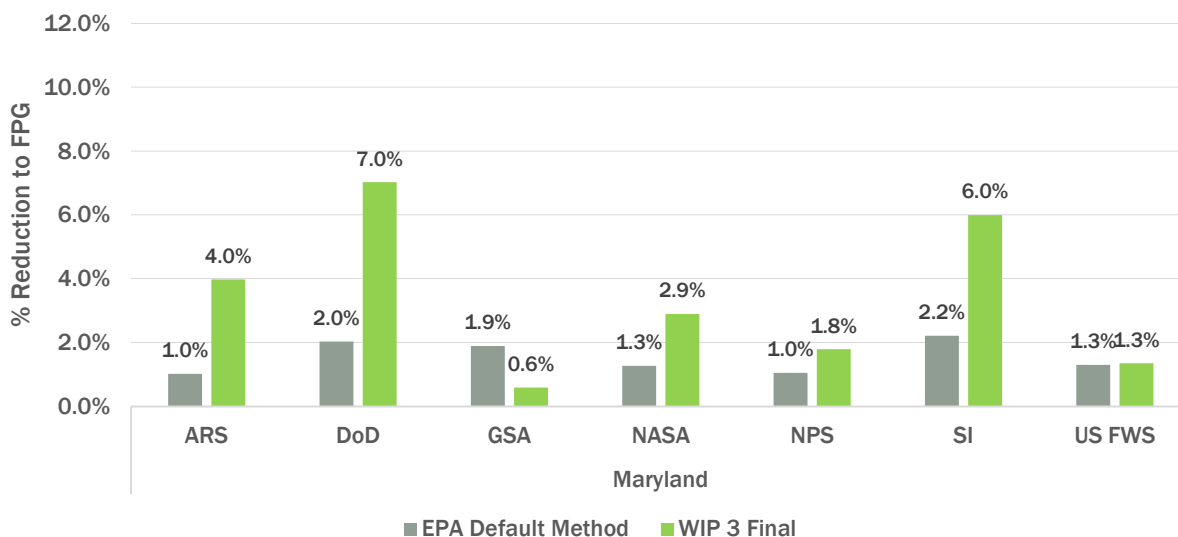


Figure 3-1. Percent reduction required from the 2019 Progress scenario to achieve potential TN FPGs in Maryland.

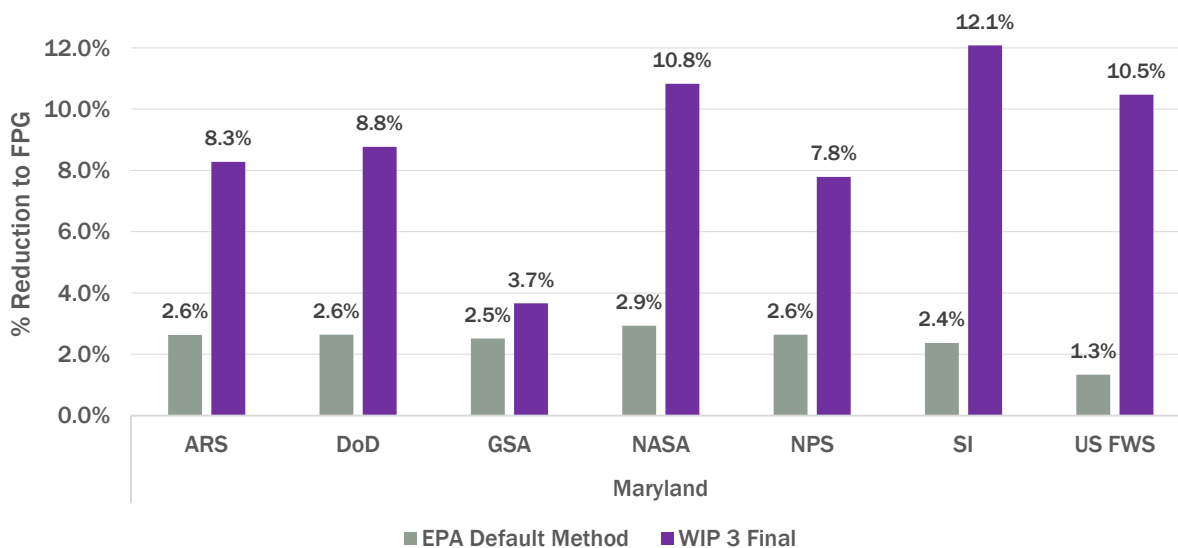


Figure 3-2. Percent reduction required from the 2019 Progress scenario to achieve potential TP FPGs in Maryland.



As stated previously, there are no quantified Phase III WIP goals for federal agencies in Maryland.

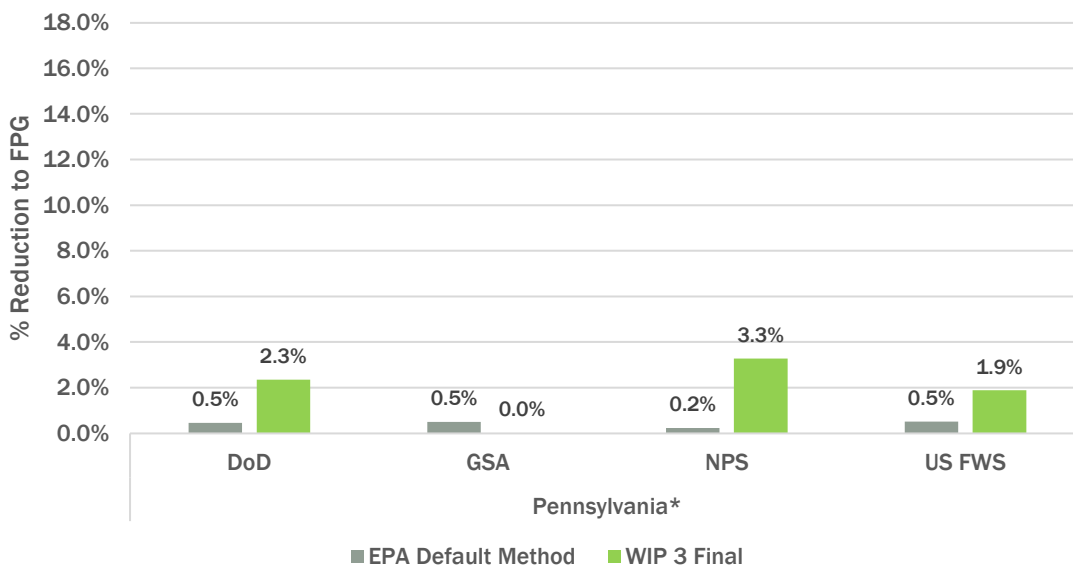


Figure 3-3. Percent reduction required from the 2019 Progress scenario to achieve potential TN FPGs in Pennsylvania.

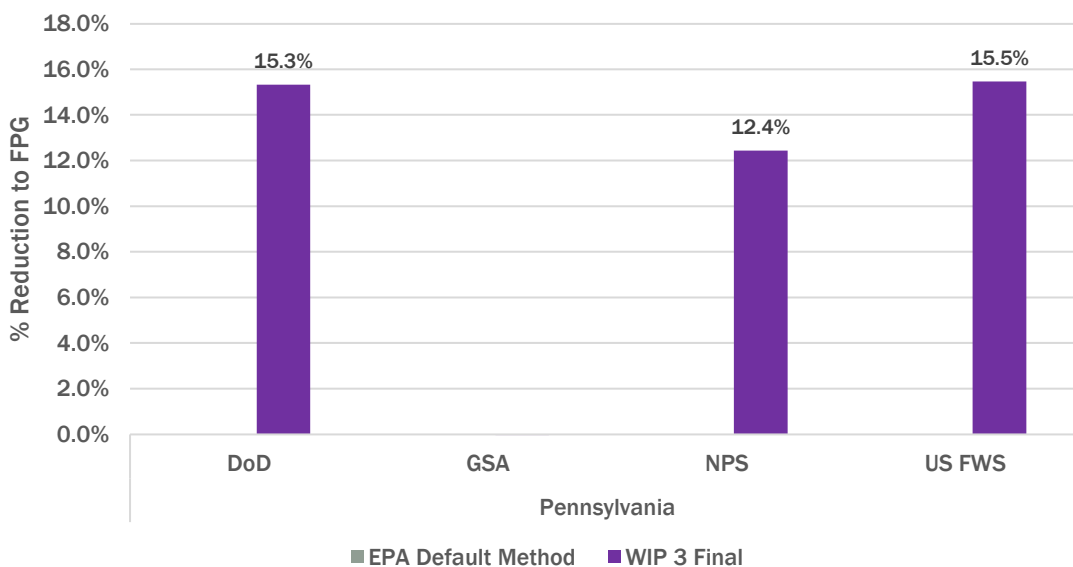


Figure 3-4. Percent reduction required from the 2019 Progress scenario to achieve potential TP FPGs in Pennsylvania. The percent reduction from the EPA Default Method is 0%.

Because the Phase III WIP FPGs in Pennsylvania are considered interim, they are not included in this comparison. Based on the revised EPA Default Method, federal agencies have met the 2025 TP load goal and need to only maintain the current 2019 Progress loads. For TN, some reductions are needed to meet the potential FPGs.



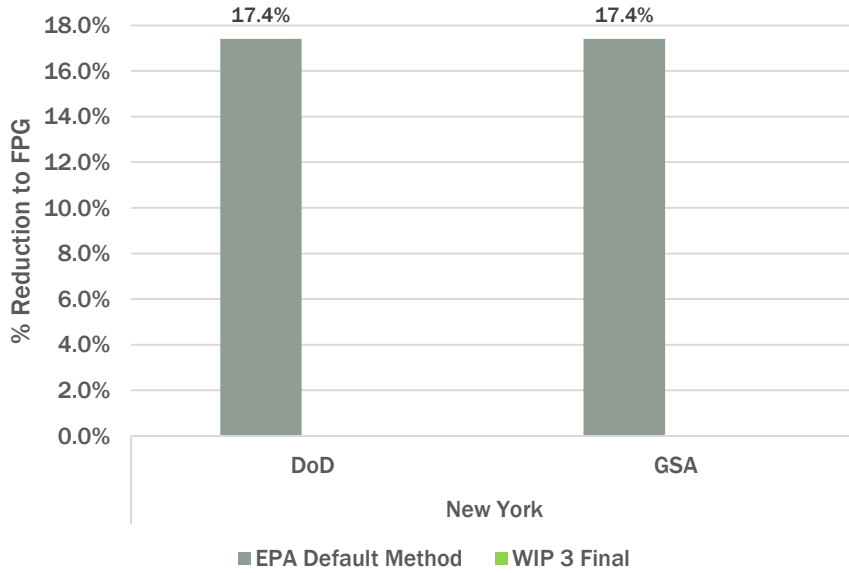


Figure 3-5. Percent reduction required from the 2019 Progress scenario to achieve potential TN FPGs in New York.

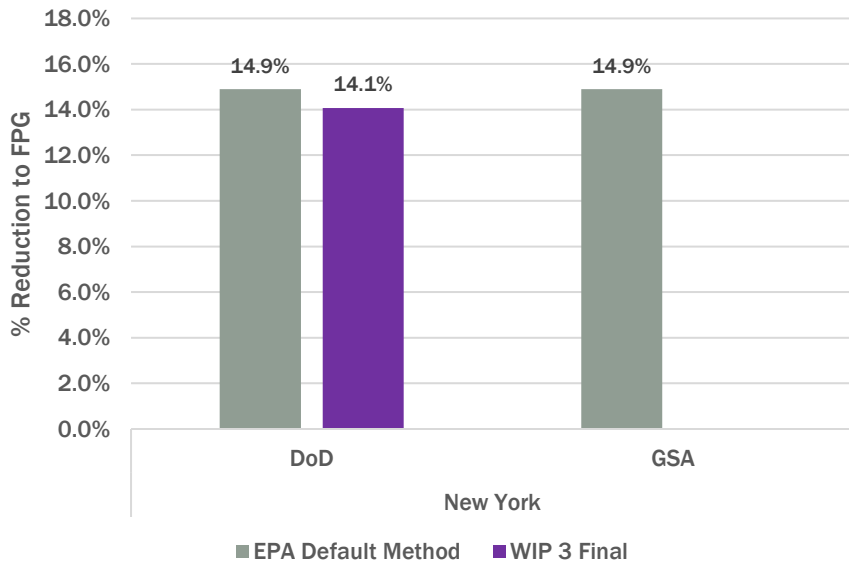


Figure 3-6. Percent reduction required from the 2019 Progress scenario to achieve potential TP FPGs in New York.

Like Maryland, there are no quantified Phase III WIP goals for federal agencies in New York. The WIP 3 Final scenario does not call for additional reductions of TN for DoD or TN and TP for GSA.



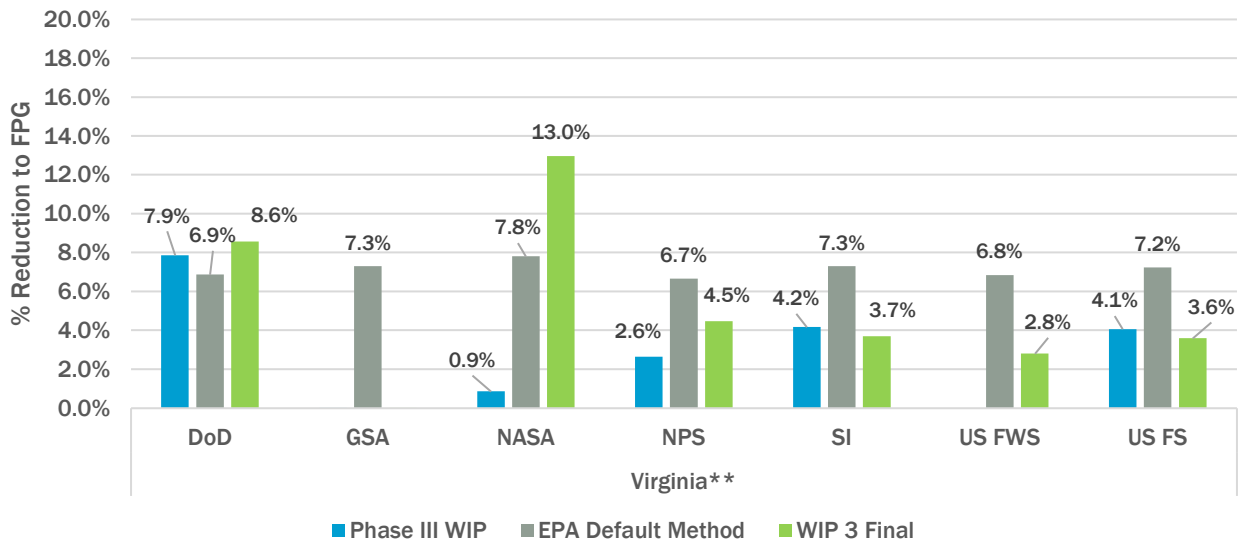


Figure 3-7. Percent reduction required from the 2019 Progress scenario to achieve potential TN FPGs in Virginia.

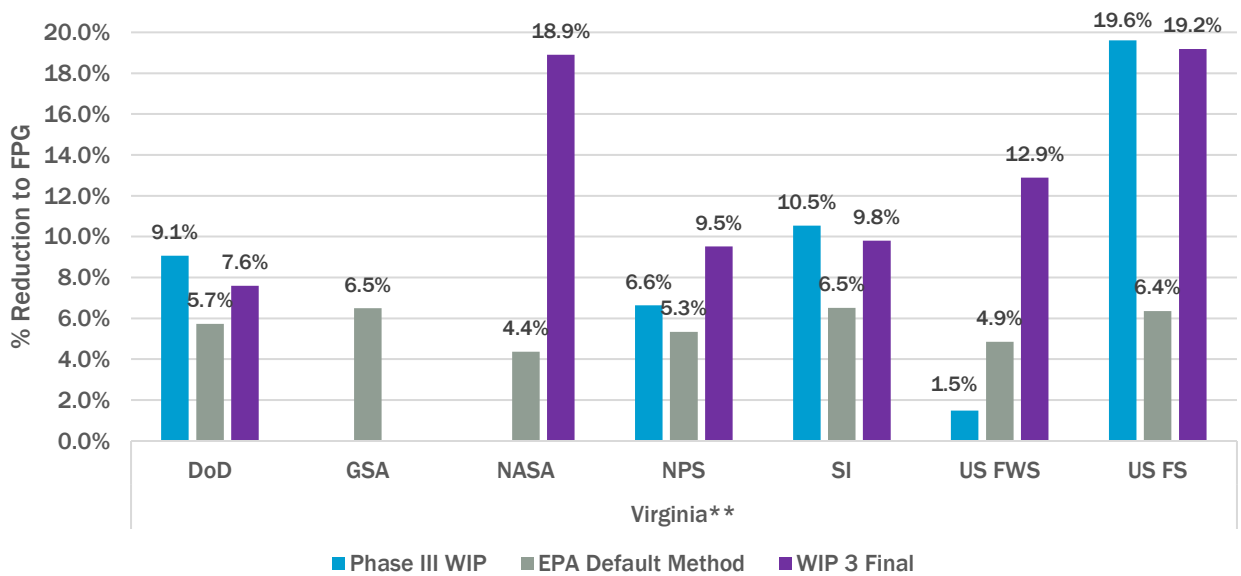


Figure 3-8. Percent reduction required from the 2019 Progress scenario to achieve potential TP FPGs in Virginia.

The Phase III WIP FPGs included in Figures 3-7 and 3-8 only represent the expected load reductions from non-regulated land. Therefore, the percent reductions for the Phase III WIP do not capture the required reductions associated with MS4 permits and the other conditions listed in the Virginia Phase III WIP.



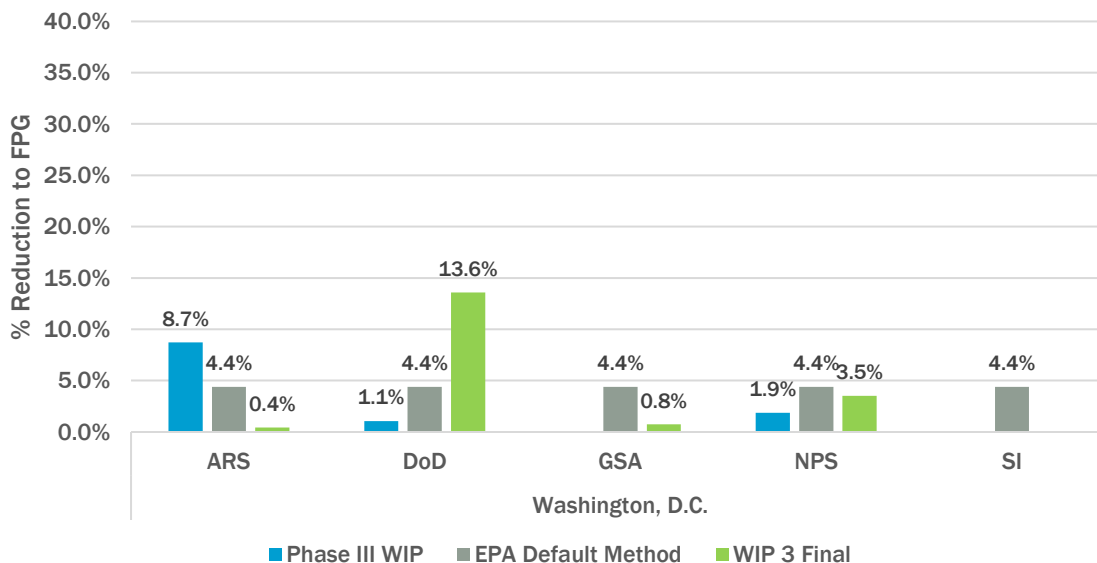


Figure 3-9. Percent reduction required from the 2019 Progress scenario to achieve potential TN FPGs in Washington, D.C.

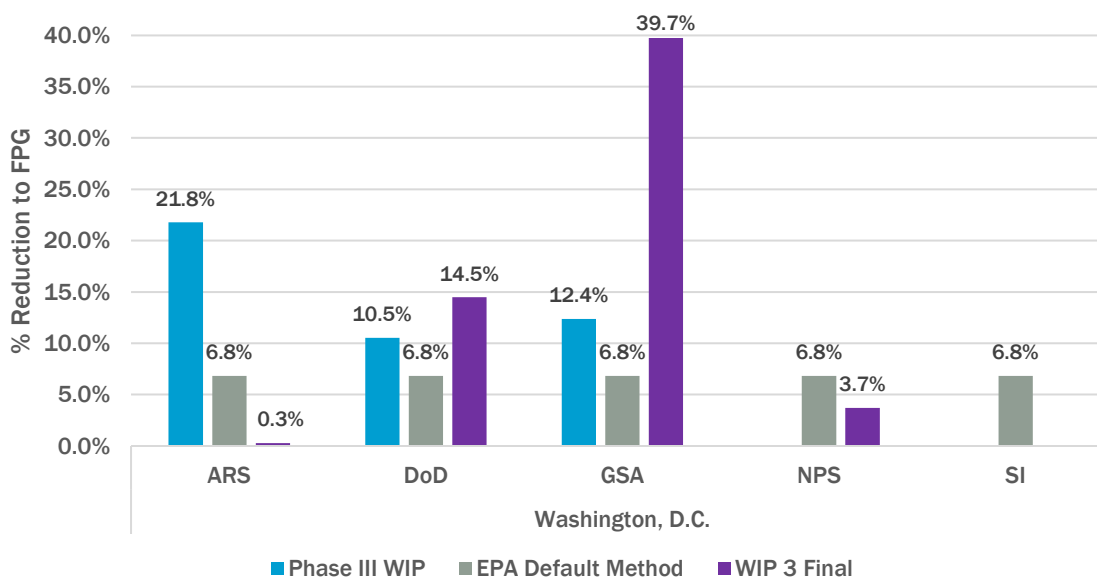


Figure 3-10. Percent reduction required from the 2019 Progress scenario to achieve potential TP FPGs in Washington, D.C.

In Washington, D.C., the WIP 3 Final scenario percent reductions are based on BMP input scenarios provided by federal agencies. DOEE expects federal agencies to achieve the load reductions documented in the Phase III WIPs, not the modeled loads in the WIP 3 Final scenario, and in almost every case, the Phase III WIP FPG requires a lower level of effort than the agency’s WIP 3 Final scenario inputs. As shown in Figures 3-9 and 3-10, some agencies (GSA, NPS, Smithsonian) have achieved some FPGs from the Phase III WIP and WIP 3 Final scenario. In those cases, the federal agency is still expected to offset increases in loads due to development or land use changes.



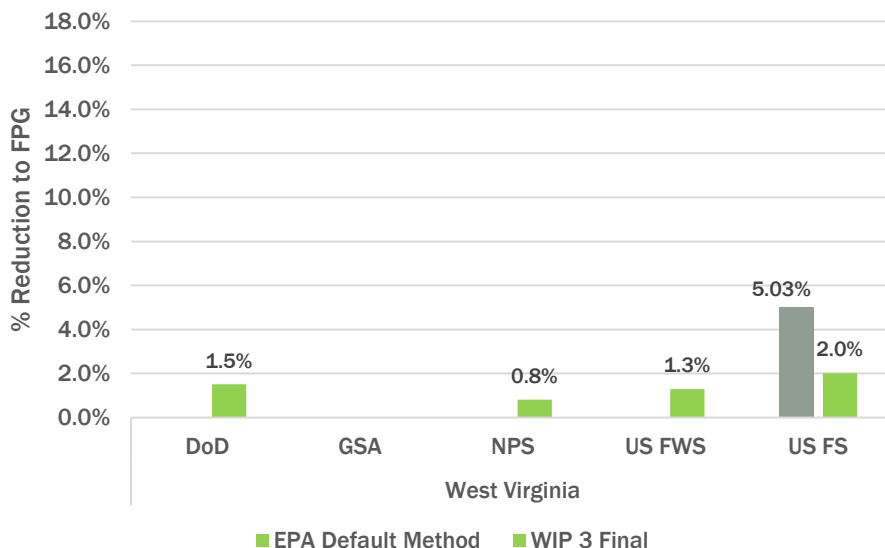


Figure 3-11. Percent reduction required from the 2019 Progress scenario to achieve potential TN FPGs in West Virginia.

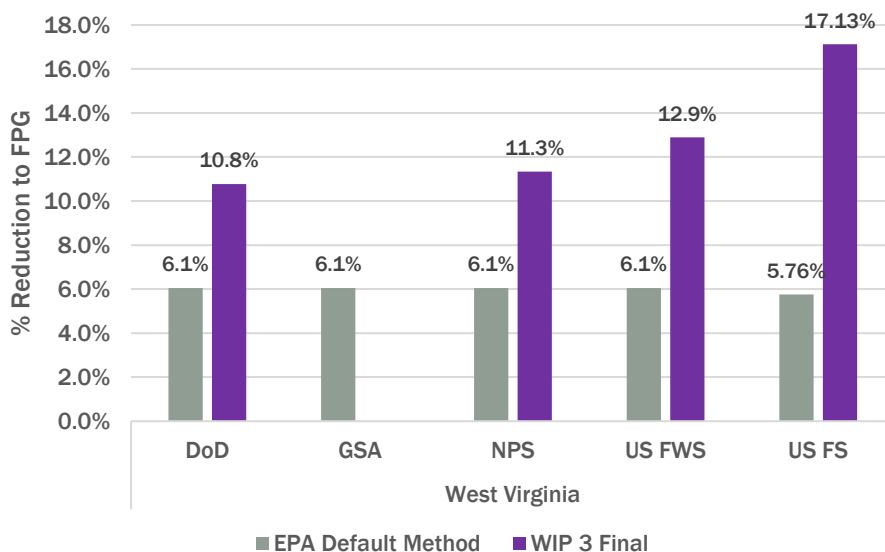


Figure 3-12. Percent reduction required from the 2019 Progress scenario to achieve potential TP FPGs in West Virginia.

WV DEP did not set FPGs for federal agencies in the jurisdiction’s Phase III WIP, so that source is not included in Figures 3-11 and 3-12.

3.3.3 Effort Summary with BMP Data Quality Ratings

Table 3-11 puts the results from Figures 3-1 to 3-12 in the context of the data quality ratings provided by the federal agencies for the 2019 Progress scenario, which were summarized in Table 2-17. The rows are shaded by data quality rating with red for low quality, yellow for medium quality, and green for high quality. In most cases, a low or medium data quality was the result of the



agency’s BMPs being underrepresented in the 2019 Progress scenario. When BMPs are undercounted, the estimated level of effort will appear higher than the value if eligible BMPs were credited. Therefore, for those rows shaded in gray, yellow, or red, there is a lower confidence that the calculated level of effort reflects the actual remaining effort. A more accurate estimate of the remaining effort should be evaluated after improvements are made to the reported BMP record.

Table 3-11. Level of Effort Summary with Shading Based on Data Quality							
State	Agency	TN (2019-2025 Percent Reduction)			TP (2019-2025 Percent Reduction)		
		Phase III WIP	EPA Default Method	WIP 3 Final	Phase III WIP	EPA Default Method	WIP 3 Final
Maryland	ARS	N/A	1.0%	4.0%	N/A	2.6%	8.3%
	DoD	N/A	2.0%	7.0%	N/A	2.6%	8.8%
	GSA	N/A	1.9%	0.6%	N/A	2.5%	3.7%
	NASA	N/A	1.3%	2.9%	N/A	2.9%	10.8%
	NPS	N/A	1.0%	1.8%	N/A	2.6%	7.8%
	SI	N/A	2.2%	6.0%	N/A	2.4%	12.1%
	US FWS	N/A	1.3%	1.3%	N/A	1.3%	10.5%
New York	DoD	N/A	17.4%	0.0%	N/A	14.9%	14.1%
	GSA	N/A	17.4%	0.0%	N/A	14.9%	0.0%
Pennsylvania	DoD	N/A	0.4%	2.3%	N/A	0.0%	15.3%
	GSA	N/A	0.5%	0.0%	N/A	0.0%	0.0%
	NPS	N/A	0.2%	3.3%	N/A	0.0%	12.4%
	US FWS	N/A	0.5%	1.9%	N/A	0.0%	15.5%
Virginia	DoD	7.9%	6.9%	8.6%	9.1%	5.7%	7.6%
	GSA	0.0%	7.3%	0.0%	0.0%	6.5%	0.0%
	NASA	0.9%	7.8%	13.0%	0.0%	4.4%	18.9%
	NPS	2.6%	6.7%	4.5%	6.6%	5.3%	9.5%
	SI	4.2%	7.3%	3.7%	10.5%	6.5%	9.8%
	US FWS	0.0%	6.8%	2.8%	1.5%	4.9%	12.9%
	US FS	4.1%	7.2%	3.6%	19.6%	6.4%	19.2%
Washington, D.C.	ARS	8.7%	4.4%	0.4%	21.8%	6.8%	0.3%
	DoD	1.1%	4.4%	13.6%	10.5%	6.8%	14.5%
	GSA	0.0%	4.4%	0.8%	12.4%	6.8%	39.7%
	NPS	1.9%	4.4%	3.5%	0.0%	6.8%	3.7%
	SI	0.0%	4.4%	0.0%	0.0%	6.8%	0.0%
West Virginia	DoD	N/A	0.0%	1.5%	N/A	6.1%	10.8%
	GSA	N/A	0.0%	0.0%	N/A	6.1%	0.0%
	NPS	N/A	0.0%	0.8%	N/A	6.1%	11.3%
	US FWS	N/A	0.0%	1.3%	N/A	6.1%	12.9%
	US FS	N/A	5.03%	2.0%	N/A	5.76%	17.1%

Data Quality Key	No Rating	Low	Medium	High
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3.4 Findings and Recommendations

The results in this section indicate additional effort remaining for federal agencies through the end of Chesapeake Bay TMDL in 2025. The following recommended steps will help federal agencies to close the gap:

- As documented in Section 2, there are improvements that could be undertaken to increase the accuracy of the federal BMP record in CAST, which would be expected to reduce loads through the reporting and crediting of existing BMPs in most cases. Improvements to the federal BMP record would lead to a more accurate reflection of federal agencies' progress to date. Federal agencies and the jurisdictions should work together to build stronger confidence in the data reported. Federal agencies should evaluate their internal processes to ensure the required annual reporting is completed. Where it is necessary, and when funding allows, agencies and facilities should undertake efforts to collect missing information for existing BMPs. This can be a cost-effective strategy to increase TMDL credit. Jurisdictions should prioritize resolving BMP reporting and tracking with federal agencies for records that originate in their data reporting system and continue to coordinate with federal agencies on BMP verification and reporting questions.
- To clearly identify a federal level of effort through the end of the TMDL, EPA, the jurisdictions, the Federal Facilities Workgroup, and other appropriate entities need to reach a consensus on the FPGs. This Report provides an initial assessment of the strengths and weaknesses of each potential source. EPA has provided the updated EPA Default Method to calculate FPGs for use if the jurisdiction did not provide a numeric calculation or if the specified FPGs are determined to be infeasible. Consensus building among all parties on all approaches is in progress.
 - Updated EPA Default Method: The revised load reductions calculated by EPA provide an equitable method to assign reductions to federal agencies. However, because these values were developed outside of the Phase III WIPs, it is not clear if jurisdictions can still meet their state planning targets with the potential for reduced effort from federal agencies. Also, the use of the state basin scale may create additional effort for facility managers attempting to calculate load reductions from facilities with land in multiple state basins.
 - Phase III WIPs: These are EPA-approved documents developed through coordination between EPA, the jurisdictions, and their partners. However, federal agencies and other parties have raised concerns about the equity about some FPGs, and other jurisdictions do not specify quantitative loads that federal agencies can use to track their progress.
 - WIP 3 Final: The inputs to the scenario reflect BMP implementation that will achieve the state planning targets. However, it appears that the information used to develop the scenario may not have included input from federal agencies. Furthermore, any loads evaluated from the official scenario in CAST-2017d will include the impacts of the Natural source sector and the regionalized loads associated with the Stream Bed and Bank.
- The assessment should be informed by more information from the jurisdictions on the expectations and intent of the effort documented in the Phase III WIPs. It should also consider the scale of the impact of federal load reductions on the overall achievement of the planning targets.

If these recommendations are implemented, some potential actions EPA and the Federal Facilities Workgroup may undertake includes:

- Consistent tracking and reporting of all federal BMPs.



- The development of BMP Crediting Reports for federal agencies. A BMP Crediting Report evaluates the status of each individual BMP in the state database, NEIEN, and CAST and then identifies why the BMP was not credited, if that is the case. The reports, which would evaluate the crediting status of the federal agencies' BMPs, would help provide accountability for both federal agencies and jurisdictions and identify action needed to improve future reporting.
- After the FPG source is selected, a second effort should quantify the actual remaining effort. The calculated percent reduction by state basin could then be used by facility managers to determine the load reductions expected from them at their individual facility.
 - If the updated EPA Default Method is selected, the Federal Facility Workgroup should consider updating the Protocol to reflect the new methodology and load results.



Section 4

Conclusions

Based on the results of this Report, BC has identified a series of conclusions from the existing data and developed recommendations for consideration by the Federal Facilities Workgroup for future efforts.

4.1 Conclusions

The Chesapeake Bay Program's ability to assess the contribution and resulting progress of federal agencies has improved since the release of the Phase 6 version of CAST. However, the quality of the model's results is dependent on the quality of the data entered into the model. The responsibility for the quality of federal data belongs to the federal agencies who report data to the jurisdictions and to the jurisdictions who submit the data to NEIEN. Regarding the data inputs to the CAST 2019 Progress scenario, this Report has two conclusions:

- Most federal agencies rate the accuracy and completeness of the data in 2019 Progress scenario as low or medium compared to the data reported to the jurisdictions.
- The data maintained by federal agencies may be incomplete or contain other issues that may prevent the BMPs from being accepted by the jurisdiction or NEIEN. In some cases, federal agencies do not submit data to the jurisdictions, despite the presence of facilities and BMPs in the state. In some cases, the jurisdictions cannot verify that BMPs are being maintained, leading to loss of credit.

Therefore, any strategy to reach a 2025 goal should include improvements to reporting through coordination between federal agencies and jurisdictions to ensure that the CAST results accurately reflect the actual implementation of BMPs on federal land.

A goal of this Report was to quantify the remaining reduction required by federal agencies to achieve FPGs. Reviewing the Phase III WIPs, however, BC found that several jurisdictions did not provide a clear numeric goal against which federal agencies could evaluate their progress. In others, discussions about the equity of the provided FPGs are ongoing. In addition, the WIP 3 Final scenario, which was used to determine if the Phase III WIP strategies would meet the state planning targets, includes inconsistent input for federal BMP implementation from federal agencies and jurisdictions. For the purposes of this Report, EPA updated the Default Method described in the Protocol, but this revised methodology has not yet been presented to or approved by the Federal Facilities Workgroup. Regarding the question of FPGs for federal agencies, this Report draws the following conclusions:

- The updated EPA Default Method, which is based on an equal level of effort as non-federal entities on the developed load source sector, requires a smaller percent reduction for TP from 2019 Progress loads than the Phase III WIP FPGs (when available) or the WIP 3 Final scenario. The results for TN are mixed.
- There is a lack of consensus around the 2025 endpoint for federal agencies from the Phase III WIPs.

Based on the above conclusions, BC has identified the recommended next steps in Section 4.2 to assist federal agencies, jurisdictions, and EPA in working toward the end of the TMDL in 2025.



4.2 Recommended Next Steps

Next steps are organized by those for the federal agencies, the jurisdictions, and EPA.

The following recommendations are provided for federal agencies:

- **Annually report BMP information.** It is recommended that federal agencies include the entire BMP record in their annual progress reporting (unless directed otherwise by the jurisdiction) to ensure the BMP record reported by the jurisdiction consistently includes both progress and historical BMPs. This practice can also help federal agencies track and report inspection and maintenance of BMPs, which is also necessary to maintain credit over time. Another recommendation is that federal agencies save a record of all past data submissions in one location in their internal system.
- **Evaluate internal data management practices.** Federal agencies should consistently use the state reporting templates, or an adapted template, to track their BMPs. This approach provides several benefits: it ensures all required information is tracked in the format requested by the jurisdiction and simplifies the reporting process.
- **Where budgets and staff resources permit, consider efforts to fill gaps in data for existing BMPs.** At this time, EPA cannot provide support to address issues with staff capacity at federal agencies. With the resources available, federal agencies should continue to prioritize efforts to plan and construct new BMPs to meet FPGs. In addition, federal agencies can evaluate development projects currently in planning or design for opportunities to increase stormwater treatment, collect data for underreported BMPs, and inspect and repair existing BMPs to gain TMDL credit. If there are questions about the jurisdiction's data requirements, federal agencies should contact the jurisdiction to discuss the BMP record and strategies to improve reporting.

The following recommendations are provided for jurisdictions:

- **Ensure all BMPs are reported under the proper agency code.** In Virginia and West Virginia, the 2019 Progress scenario included federal BMPs assigned to the non-federal agency. These issues should be addressed promptly to ensure that credited BMPs are correctly attributed to the appropriate federal agency.
- **Increase coordination with federal agencies during annual progress reporting.** The purpose of this coordination may include sharing information about corrective actions federal agencies can take to address problems with BMP records.
- **Participate in discussions about the appropriate FPGs and other Phase III WIP expectations.** Both Washington, D.C. and Pennsylvania are working with federal agencies or EPA to address concerns about FPGs established in those jurisdictions. In addition, both Pennsylvania and New York are working with EPA to address other shortfalls in their Phase III WIP strategies. As discussions around FPGs evolve as a part of these ongoing efforts, jurisdictions should be engaged in the process.

The following recommendations are provided for EPA:

- **Coordinate a discussion around the FPGs to develop consensus among the stakeholders and set a clear expectation for federal agencies through 2025.** There are outstanding questions about the level of effort and equity of the FPGs in some of the Phase III WIPs. If an alternative approach is to be used, it should be based on consensus among the partners in the Federal Facilities Workgroup and approved by other bodies within the Chesapeake Bay Program. EPA should also consider documenting the final approach and expectations for federal agencies based on that consensus.



- **Evaluate the value of subsequent analyses or other efforts to further assist federal agencies and the jurisdictions to implement the recommendations of this Report.**



Section 5

Limitations

This document was prepared solely for US EPA in accordance with professional standards at the time the services were performed and in accordance with the contract between US EPA and Brown and Caldwell dated June 29, 2020. This document is governed by the specific scope of work authorized by US EPA; it is not intended to be relied upon by any other party except for regulatory authorities contemplated by the scope of work. We have relied on information or instructions provided by US EPA and other parties and, unless otherwise expressly indicated, have made no independent investigation as to the validity, completeness, or accuracy of such information.



Section 6

References

- Chesapeake Bay Program. *Protocol for Setting Targets, Planning BMPs and Reporting Progress for Federal Facilities and Land*. 2015.
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- Federal Facilities Workgroup. "Past Meetings: 2018." January 9, 2018 – December 11, 2018.
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- Local Planning Goals Task Force. *Final Recommendations of the Local Planning Goals Task Force*. 2016.
- MDE. *Maryland's Phase III Watershed Implementation Plan to Restore the Chesapeake Bay by 2025*. 2019.
- NYSDEC. *Final Phase III Watershed Implementation Plan for New York's Chemung and Susquehanna River Basins*. 2019.
- PA DEP. *Pennsylvania Chesapeake Bay Watershed Implementation Plan Phase 2*. 2012.
- PA DEP. *Pennsylvania Phase 3 Chesapeake Bay Watershed Implementation Plan*. 2019.
- VA DEQ. *Commonwealth of Virginia Chesapeake Bay TMDL Phase II Watershed Implementation Plan*. 2012.
- VA DEQ. *Commonwealth of Virginia Chesapeake Bay TMDL Phase III Watershed Implementation Plan*. 2019.
- WV DEP. *West Virginia's Phase 3 Watershed Implementation Plan for the Chesapeake Bay Total Maximum Daily Load*. 2019.



Appendix A: Federal Agency Progress Evaluation Excel

An Excel workbook with the results of the BC analyses is included as an attachment to this Report.





Appendix B: Comment Log

A comment period on the draft final Report was open between December 10, 2020 and January 8, 2021 and a revision review period was provided from March 3, 2021 to March 13, 2021. This appendix includes a record of the received comments with responses.



Federal Agency Progress Evaluation Comment Log								
Number	Report Version	Commenter	Agency	Page Number	Paragraph Number	Report Text	Comment	Response
1	Draft Final	Kevin Du Bois	DoD	1-1	1	The jurisdictions define the expected equitable load reductions or final loads to be achieved by federal agencies with input from the Environmental Protection Agency (EPA), who is charged to oversee the Chesapeake Bay TMDL and restoration program, and the federal community.	Should this reflect necessary input and consensus from federal agencies?	No change - The question regarding the development of the FPGs is discussed in greater detail in Section 3. The purpose of this section is to provide an overarching introduction to the organization of the Chesapeake Bay TMDL.
2	Draft Final	Jessica Rodriguez	DoD	2-4	1	As stated above, the Maryland Department of the Environment (MDE) omitted some records in the 2019 Progress reporting due to an error in their data management system.	Where was this stated above? Or are you referencing the chart? Please clarify.	Revised - A previous reference to the issues with Maryland's reporting was removed. The sentence has been revised by removing the phrase "As stated above."
3	Draft Final	Kevin Du Bois	DoD	2-4	2	DoD reported over 1,300 BMPs to the Department of Environmental Quality (DEQ) BMP Warehouse. However, only 50 BMPs are credited in the 2019 Progress scenario. For this reason, DoD indicated that the data record in Virginia has Low completeness and accuracy.	Please list the reason for the low number of credited BMPs like in MD above. See Section 3, page 4.	Revised - DoD's 2019 BMP Crediting Report evaluated the 2019 Progress scenario in CAST-2017d. There were notable changes between the 2019 Progress scenario in CAST-2017d and CAST-2019, in particular a significant decline in the number of BMPs credited under the DoD agency code. The report text was revised to indicate that a large number of DoD BMPs are incorrectly assigned the "Nonfederal" agency code.
4	Draft Final	Kevin Du Bois	DoD	2-4	4	DoD BMPs have not been credited in West Virginia.	Please list the reason for the failure of BMPs credited like in MD above. See page 17.	Revised - We have not performed a detailed analysis to evaluate why DoD's West Virginia BMPs are not credited. A sentence was added to reflect the suspected cause for lack of credit (an incorrect agency code), but we cannot provide a definitive statement regarding the reason for lack of credit.
5	Draft Final	Jessica Rodriguez	DoD	2-5	Table 2-5	Table 2-5	Does it makes sense to include a row that includes a Watershed level progress load for EOS and EOT?	No change - Federal agencies are not evaluated at the watershed scale, so there is no meaningful value to a total watershed load.
6	Draft Final	Jessica Rodriguez	DoD	2-14	1	The cells are color-coded based on the data quality rating, as assigned by the federal agency:	Not sure this is accurate since, I thought I read that DoD didn't rate the data quality for all the jurisdictions (not WV or NY but those were assigned by BC or EPA?)	Revised - The ratings for NY & WV have been removed to reflect DoD's initial data request response.
7	Draft Final	Jessica Rodriguez	DoD	2-15	6	Federal agencies are limited by the funding and staff allocated to stormwater programs. This reality supports the need for the use of simple but intentional data management practices.	Does this include a recommendation for simplifying what level of information get reported? I think part of the burden that may play into this is the new data requirements that come out of the Partnership and/or jurisdictions that impact receiving credit (i.e., the new stream restoration reporting protocols).	No change - EPA and the jurisdictions are committed to improve the accuracy of CAST results without burdensome data requests. The current templates reflect this commitment to simplicity. EPA is not aware of any effort to change the requested information within its system or to add a significant burden for data collection and reporting.
8	Draft Final	Kevin Du Bois	DoD	3-1	4	Virginia indicated that changes were made to the FPGs following this comment period.	Please detail the changes.	Revised - In a response to questions regarding the state's Phase III WIPs and FPGs, VADEQ indicated that changes were made to the FPG narratives based on DoD comments. The report has been revised to reflect that changes were made to the narratives rather than the FPG values.
9	Draft Final	Kevin Du Bois	DoD	3-1	4	There is no record of any agreements, votes, or other consensus regarding the FPG development by the Federal Facilities Workgroup (Federal Facilities Workgroup 2018).	So what is the ramification? Are the FPGs valid in the minds of EPA or not?	Revised - The report has been revised to say that In each instance where the jurisdictions have provided a method for calculating FPGs, EPA is facilitating a process to affirm that all parties (i.e., jurisdictions, EPA, and the federal community) agree that the FPGs are fair and equitable. For cases where the jurisdiction has not defined an FPG, EPA recommends the use of the updated EPA Default Method FPGs until consensus is reached around an appropriate FPG.
10	Draft Final	Jessica Rodriguez	DoD	3-2	2	Furthermore, some Phase III WIPs (Maryland and New York) do not include numeric targets for federal agencies to quantitatively assess their progress.	Should WV be listed here based on the above?	Revised - Added West Virginia. However, unlike New York and Maryland, West Virginia has elected to not assign FPGs to federal agencies. Therefore, the implications of a lack of numeric targets are different.
11	Draft Final	Kevin Du Bois	DoD	3-2	4	The Protocol default method defined federal facility targets as a change in the pollutant loading rate from the Developed source sector by state basin between 2009 and 2025.	I don't understand enough about this for it to make sense to me. Can you include a concrete example to show how this works?	Revised - An example has been added to the end of the first paragraph of Section 3.2.1.
12	Draft Final	Kevin Du Bois	DoD	3-2	4	The Protocol default method defined federal facility targets as a change in the pollutant loading rate from the Developed source sector by state basin between 2009 and 2025.	Not including the Natural Sector?	No change - The Protocol's target reductions were defined using only the Developed sector. However, projects may also be applied to the Natural sector to achieve progress toward the specified load reductions.

Federal Agency Progress Evaluation Comment Log								
Number	Report Version	Commenter	Agency	Page Number	Paragraph Number	Report Text	Comment	Response
13	Draft Final	Kevin Du Bois	DoD	3-2	6	The percent reduction is calculated from the percent difference between the 2019 Progress and the WIP 3 Final scenario (as run in CAST-2017d) loads for the Developed and Natural source sectors on non-federal land by state basin.	How is [the WIP 3 Final scenario] developed?	Revised - This is described in detail in Section 3.2.4. I have added a parenthetical reference to this sentence to refer the reader to that section.
14	Draft Final	Kevin Du Bois	DoD	3-3	2	However, Maryland did assign local area planning goals to federal facilities and does not specifically address expectations for federal agencies in the Phase III WIP document.	Did you mean "did not" [assign local area planning goals]?	Revised - Correct. Change accepted.
15	Draft Final	Jessica Rodriguez	DoD	3-3	2	The 20 percent restoration requirement is consistent with the interim approach documented by Maryland in the Protocol, but those interim target loads and reductions are now out of date (Chesapeake Bay Program 2015, 10-13).	Aren't treatment and restoration two different things? Should this be treatment?	Revised - "Restoration requirement" is the language used in the Maryland Phase III WIP and MS4 permit, but it refers to the treatment of untreated impervious area. The report has been revised.
16	Draft Final	Kevin Du Bois	DoD	3-3	4	Instead, the Phase III WIP document referenced the reduction requirements developed in the Protocol (NYSDEC 2019, 134).	Add year.	No change - There is only one Protocol document, which was developed in 2015. Therefore, there is no need to state the year. In addition, the List of Abbreviations at the beginning of the document includes a full reference to the document title for "Protocol."
17	Draft Final	Kevin Du Bois	DoD	3-4	1	Therefore, the FPG methodology is considered equitable, pending the needed improvements to the state's reporting system.	What about the exclusions to the Natural Load Source BMPs - see DoD Progress Report, Section 5, page 6.	Revised - The Virginia FPGs include loads from unregulated Developed and Natural land. Therefore, changes in the Natural load due to the implementation of Natural BMPs can contribute to the achievement of the FPG. The report has been revised to clarify that the FPGs include loads from both the Developed and Natural source sectors.
18	Draft Final	Kevin Du Bois	DoD	3-4	2	In addition to achieving the specified load reductions, federal facilities [in Virginia] are also expected to:	Are these the changes made to the FPGs after the comment period? I think the document should reflect that there was no consensus or agreement on these expectations.	No change - These additional expectations were included in the draft FPGs sent out to federal agencies, as well as the draft Phase III WIP. The question of consensus around the Phase III WIP FPGs is addressed in Section 3.1.
19	Draft Final	Kevin Du Bois	DoD	3-4	2	Reduce loads from all agency owned lands managed for agricultural use (45 percent TN reduction goal from 2017 levels).	I have questions whether DoD owns its ag land or leases it from private farmers. If the land is leased, it would be incumbent on the private land owner to comply with loads, correct?	No change - EPA has relied on "ownership" as the key determinant for accountability and FPGs. Leased land would be the responsibility of the owner; however, DoD could provide leadership in assisting land owners with best management practice demonstration. DoD is encouraged to contact the appropriate parties within DoD and the Virginia Department of Environmental Quality to determine the ownership of DoD agricultural land and the responsible party for the necessary load reductions.
20	Draft Final	Kevin Du Bois	DoD	3-4	2	Virginia estimated the additional reduction is 1.72 million pounds of nitrogen and 0.19 million pounds of phosphorus (VA DEQ 2019, 132-133).	Please clarify if this is the VA portion of the climate load or the federal agency portion.	Revised - The report has been revised to reflect that these are the estimated additional reductions for the entire state, not only the federal portion.
21	Draft Final	Kevin Du Bois	DoD	3-4	3	Some of these expectations do not have associated regulatory drivers to help enforce implementation.	Please specifically differentiate which have regulatory drivers and which do not.	Revised - A regulatory driver may or may not exist depending on site-specific conditions. Therefore, we cannot include a comprehensive list of regulatory drivers for individual expectations. A statement to this effect has been added to the report.
22	Draft Final	Jessica Rodriguez	DoD	3-4	3	In addition, federal agencies do not have mechanisms to track or report reductions from agricultural and septic sources.	Would the same be true for forest harvesting for DoD?	Revised - The Virginia reporting template does not include a BMP Name for forest harvesting practices. Therefore, silviculture sources have been added to the list included in this sentence.
23	Draft Final	Jessica Rodriguez	DoD	3-6	Table 3-2	Table 3-2	What does the check marks mean? That they had BMPs in the 2019 Progress Scenario and the WIP 3 Final Scenario? If the check mark is redundant with the green fill color, please remove it.	Revised - Comment acknowledged. The check marks indicate that the agency has assigned BMPs in the WIP 3 Final scenario. To complement the check marks, X's have been added for those agencies without BMPs in the WIP 3 Final scenario.
24	Draft Final	Kevin Du Bois	DoD	3-6	1	DOEE has clarified that federal agencies are not committed to achieve the implementation in the WIP 3 Final scenario; if the FPGs defined in the Phase III WIP are achieved, DOEE's expectations for that federal agency are met.	This is confusing to me and I don't understand it. Can you perhaps add more detail or clarify?	Revised - The text has been revised at the request of DOEE, see Comment 56.
25	Draft Final	Kevin Du Bois	DoD	4-2	Header	Section header	The Section in the header above says Section 5, but we're still on Section 4. See the following page as well.	Revised - This issue has been corrected.

Federal Agency Progress Evaluation Comment Log								
Number	Report Version	Commenter	Agency	Page Number	Paragraph Number	Report Text	Comment	Response
26	Draft Final	Kevin Du Bois	DoD	4-2	2	The following recommendations are provided for federal agencies:	From a federal perspective, perhaps it would be appropriate to note that there is no way for the EPA to support federal efforts that address needed additional capacity.	Revised - The report now states that EPA cannot provide support to address issues with state capacity at federal agency. The revised text then recommends that federal agencies prioritize planning of new BMPs, evaluate opportunities for additional stormwater treatment on planned development sites, and pursue data collection and BMP inspection/maintenance as methods to create TMDL credit.
27	Draft Final	Kevin Du Bois	DoD	4-2	9	Participate in discussions about the appropriate FPGs	"and any other WIP III expectations." I'm referring to VA and any others.	Revised - Change accepted.
28	Draft Final	John Maleri	DOEE	2-2	Table 2-1	Table 2-1. BMP Count in 2019 Progress Scenario by Agency & Jurisdiction	DC did submit 16 BMPs that included the USDA agency tag. Because of CAST name designations, BMPs associated with USDA get grouped in the Other Federal agency category in CAST. DC believes these BMPs may have been improperly named and should be grouped with ARS.	Revised - Additional details provided by DOEE have been added to Section 2.2.1.
29	Draft Final	John Maleri	DOEE	2-2	3	Recent changes in staff at ARS have led to some loss of institutional knowledge.	Previously DC worked with Dana Jackson from ARS. We are planning to with Rick Kumpon and LeAnn Bloomberg in 2021.	No change - Comment acknowledged. No change to the Report.
30	Draft Final	John Maleri	DOEE	2-3	2	BMP Inputs	Important to note - There is a difference in what is in the CAST BMP Input report vs NEIEN Validation Reports. If BC has access to NEIEN Error Reports in CAST it may be helpful to also evaluate the federal BMPs through the NEIEN Reports as well to better understand why some BMPs were not credited. NEIEN Reports show a record for BMPs that have a zero acreage or failed inspection/credit life expired. CAST BMP Input file does not include those records. This will cause slight discrepancies between NEIEN error report BMPs and the CAST BMP Input file.	No change - We agree that the NEIEN Validation Reports are a valuable tool to evaluate why BMPs were excluded from CAST and to explain difference between the federal agency and CAST BMP records, and it is a recommendation (see page 3-18 and 4-3) that a future assessment include a review of the NEIEN Validation Reports. Our scope for this evaluation only included an evaluation of the 2019 Progress scenario (now outlined under Section 1.2).
31	Draft Final	John Maleri	DOEE	2-3	2	Known reasons would include expired annual BMPs, ineligible BMP types, BMPs with a failed inspection and no corrective maintenance, or BMPs without required information like a drainage area or extent.	BMPs with a zero contributing drainage area (CDA) will not appear in the CAST BMP Input Report. For DC, if a BMP is part of a treatment train and doesn't take on new CDA, the CDA may be zero. This issue is not limited to federal BMPs specifically, and DOEE is working to address this. This broader issue with CAST may be limiting the reporting of federal BMPs vs issues on the jurisdiction side.	Revised - Comment acknowledged. This potential issue has been added to the Washington, D.C. discussion on page 2-15.
32	Draft Final	John Maleri	DOEE	2-3	Table 2-3	Table 2-3. Number of DoD BMPs Credited in 2019 Progress vs. DoD BMP Records, Washington D.C. row and BMPs in 2019 Progress column	<p>BMPs in CAST that are associated with DoD include BMPs reported from multiple federal agencies. This is due to differences in the available NEIEN Agency Code and the CAST Agency codes. DoD BMPs in CAST include the following agencies: USA, USMC, USN, USACE, USAF, DOD, USARNG, NSA.</p> <p>In the District the BMP breakdown for the 2019 Progress using NEIEN Agency code and removing those that do not have a CAD, breakdown as follows: DoD - 77 BMPs ACOE - 5 BMPs USN - 43 BMPs ----- 125 DoD BMPs total</p> <p>DOEE requests better understanding of the BMP records provided by the agencies. Is the DoD BMP count just for DoD-labeled BMPs in NEIEN?</p>	<p>Revised - The source of the data in the "BMPs in 2019 Progress" column is the BMP Inputs report to the 2019 Progress scenario in CAST. The source of the data in the "Estimate of BMPs Eligible for Credit" column is the BMP record provided by the DoD CBP. The DoD CBP does not coordinate reporting of BMPs from the Army Corps of Engineers.</p> <p>The report has been revised to reflect this additional information.</p>
33	Draft Final	John Maleri	DOEE	2-4	3	However, DOEE reports to CAST from its own internal record system built from approved plan sets.	Saying that DC only submits from approved plan sets is not fully accurate. While a majority of DC's Federal BMPs come from regulated practices that do have approved plan sets, DC also submits voluntary BMPs installed in the District that are reported through the annual progress reporting effort	Revised - Text was revised to reflect that the DOEE submission includes voluntary BMPs submitted by federal agencies through the annual progress reporting process.
34	Draft Final	John Maleri	DOEE	2-5	Table 2-4	Table 2-4. DoD BMPs Submitted versus Credited Summary	Is there a reason DC is not included in this table?	Revised - The table only includes submitted BMPs that were not fully credited (i.e., Percent Credited is less than 100%). Because the total amount of each submitted BMP in Washington, D.C. was fully credited, there are no Washington, D.C. entries in the table. The text above the table states that Table 2-4 only includes BMPs not fully credited. A footnote has been added to the table to make this clear.
35	Draft Final	John Maleri	DOEE	2-5	1	As a result of uncredited BMPs excluded from the 2019 Progress scenario in Maryland, Virginia, and West Virginia, as well as unresolved issues between DoD and DOEE in Washington, D.C., the loads in these jurisdictions are higher than if those BMPs were properly credited and attributed to DoD.	DOEE is not sure it can be said at this point that the load is higher in DC than expected since we don't know the true discrepancy. Looking at the NEIEN error report, DC shows 89 specific DoD BMPs that successfully made it to CAST (including some BMPs with a CAR of 0), which is more than what is listed as "expected" (71) in the tables above. While BMPs do not have 1 to 1 equivalency, it might be guessed that if the DC report shows more BMPs being tracked than are expected by DoD, the load is likely lower than DoD would expect from their lower number of BMPs.	Revised - We agree that it is not clear if the actual DoD load will be higher or lower than that in the 2019 Progress scenario for Washington, D.C., and the report has been revised accordingly. The count of 71 "expected" BMPs does not include those with a CDA of 0.

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36	Draft Final	John Maleri	DOEE	2-7	3	Because no BMP record was provided for GSA in Washington, D.C., the accuracy and completeness of the dataset compared to the agency's internal records cannot be assessed.	Can this be clarified to show that no records were provided by GSA to BC evaluators? This distinction is important because the data submission by DC does include GSA BMPs.	Revised - Yes, revised: "Because no BMP record was provided by GSA in Washington, D.C., the..."
37	Draft Final	John Maleri	DOEE	2-10	Table 2-11	Table 2-11. Number of NPS BMPs Credited in 2019 Progress vs. NPS BMP Records	<p>When reviewing the NEIEN Error Report sorted for NPS, the report shows 10 NPS BMPS that failed inspection or credit life expired.</p> <p>The NEIEN Report shows 26 successful unique BMPs for NPS in 2019.</p> <p>The 2020 NEIEN report shows 53 successful unique BMPs for NPS (one more than NPS expected because we credited them tree planting).</p> <p>DOEE suspects that the Estimate of BMPS eligible for Credit provided by NPS included BMPs installed in 2020. Can it be confirmed that the 52 number submitted by NPS is accurate the 2019 reporting period?</p>	Revised - The NPS BMP record was provided in August 2020 and includes BMPs installed through the end of 2019. We can not verify which records were submitted by NPS for 2019 reporting. However, the spreadsheet includes 38 BMPs installed prior to July 1, 2019 and 10 practices that do not have an installation date. The comments for 4 BMPs note that they were not reported, so the maximum number of credited BMPs in the 2019 Progress scenario is 34. The report has been revised to reflect the information provided in this response.
38	Draft Final	John Maleri	DOEE	2-10	Table 2-11	Table 2-11. Number of NPS BMPs Credited in 2019 Progress vs. NPS BMP Records	DOEE requests more information as to why NPS rated the Data as Low? Again, we suspect the Estimate of Eligible BMPs for Credit may be including BMPs submitted in 2020.	Revised - NPS did not provide a state-by-state rating. Instead, they provided an overall rating across all jurisdictions. The report has been revised to state this. I have added a statement to the report to clarify that we cannot confirm from the information provided which BMPs were submitted as a part of 2019 reporting.
39	Draft Final	John Maleri	DOEE	2-10	5	Of the 62 records, 42 are labeled as reported to DOEE.	Why haven't all BMPs been reported to DOEE?	No change - Some BMPs are marked as "CSO," indicating that they are located in the combined sewer system service area. Comments on these records indicate they were not reported. DOEE is encouraged to coordinate directly with NPS for more detailed information about the BMP record.
40	Draft Final	John Maleri	DOEE	2-10	5	However, only 26 BMPs are included in the 2019 Progress scenario.	Again initial reports from DC 2020 Progress scenario from the 2020 Validation Reports do show 52 unique BMPs attributed to NPS (plus one more added to them by DOEE for tree planting efforts).	See responses to Comments 28 & 29.
41	Draft Final	John Maleri	DOEE	2-11	3	The 2019 Progress scenario does not include BMPs from the Smithsonian Institution.	DC does have Smithsonian BMPs listed in the 2019 scenario as Table 2-1 shows. These BMPs are from regulated projects that DC knows about based on requirements to local laws. DOEE did not received a list of BMPs, voluntary or otherwise, from Smithsonian during the 2019 or 2020 federal reporting data call.	Revised - The report has been corrected to include the 22 BMPs credited to Smithsonian in Washington, D.C. A sentence about the lack of voluntary reporting in 2019 and 2020 was also added.
42	Draft Final	John Maleri	DOEE	2-14	Table 2-17	Table 2-17. BMP Count (Credited/Eligible) in 2019 Progress by Agency & Jurisdiction, DoD row, DC column	<p>Sharing this comment again to reiterate, BMPs in CAST that are associated with DoD include BMPs reported from multiple federal agencies. This is due to differences in the available NEIEN Agency Code and the CAST Agency codes. DoD BMPs in CAST include the following agencies: USA, USMC, USN, USACE, USAF, DOD, USARNG, NSA.</p> <p>In the District the BMP breakdown count for the 2019 Progress using NEIEN Agency code (and removing those BMPS that do not have a CAD), is as follows:</p> <p>DoD - 77 BMPs ACOE - 5 BMPs USN - 43 BMPs ----- 125 DoD BMPs total</p> <p>DOEE requests better understanding of the BMP records provided by the agencies. Is the DoD BMP count just for DoD-labeled BMPs in NEIEN?</p>	Comment acknowledged. See response to Comment #32.
43	Draft Final	John Maleri	DOEE	2-14	Table 2-17	Table 2-17. BMP Count (Credited/Eligible) in 2019 Progress by Agency & Jurisdiction, NPS row, DC column	Again to reiterate, has it been confirmed that NPS submitted their expected BMP count for 2019? DOEE asks because the initial rounds of DC's 2020 Progress Reporting are showing 53 unique BMPs for NPS in DC (52 NPS BMPs + 1 added by DOEE for tree planting efforts). It could just be a coincidence but we wanted to point out the NPS' expected 2019 BMP record matches what DC is showing in CAST for 2020.	<p>Revised - The data provided by NPS in August 2020 included BMPs installed in 2020, so it reflects a more current dataset. The report has been revised to reflect when the NPS data was provided and that it includes BMPs installed in 2020. (The last BMP installed in Washington, D.C. has a date installed in December 2019.)</p> <p>The number of eligible BMPs for NPS in the report has been updated to reflect the number of BMPs installed through the end of the 2019 progress year (34 BMPs) in that dataset. We cannot verify if those records were submitted in the 2019 reporting period, but the updated count is the number of BMPs that may have been credited in the 2019 Progress scenario based on the available information.</p>

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44	Draft Final	John Maleri	DOEE	2-14	1	There is not enough information to assess the data record in Washington, D.C. due to a lack of response from three of five agencies in the District. However, both NPS and DoD ranked the data quality as low.	Again, DOEE is interested in supporting evidence from NPS that led them to the low data ranking. As mentioned, we suspect some differences in the BMP data records provided to BC could have contained 2020 BMPs.	Revised - NPS provided a general assessment of low data quality across all jurisdictions. We do not have additional details about jurisdiction-specific concerns. NPS and DOEE are encouraged to collaborate to address questions and concerns regarding that agency's dataset. This recommendation has been added to page 2-14.
45	Draft Final	John Maleri	DOEE	2-14	1	DOEE is also willing to discuss with DOD the role and obligations of federal agencies under the District's municipal separate storm sewer system (MS4) permit.	Is this relevant to include here? We don't want to create confusion. Rectifying BMP records is certainly a component that needs to be discussed and conversations will continue between DOEE and DoD. Since this section is related to the BMP record, we think the last sentence is not necessary here.	Revised - Discussions are ongoing regarding the BMP record, which is relevant to the subject of Section 2. The reference to the MS4 permit was removed.
46	Draft Final	John Maleri	DOEE	3-4	4	Federal agencies disagreed with the designation of FPGs to federal agencies because federal agencies pay a stormwater utility fee to DOEE to implement the MS4 permit, including the Chesapeake Bay TMDL nutrient and sediment reductions.	This comment was received by only one Federal Agency during the FPG process (DoD) and was addressed with information in the District's Phase III WIP mentioned in the comment below.	Revised - The sentence has been revised to reflect that DoD disagreed with the designation.
47	Draft Final	John Maleri	DOEE	3-4	4	In addition, if DOEE funds are used to implement a stream restoration project on federal land, DOEE will take credit for the BMP.	This is an inaccurate over-simplification. DOEE takes credit for the restoration projects on federal land that it secures the funding for and leads. If federal agencies want to lead or actively participate in a project, including applying for DOEE funds for the project, DOEE will give the federal agencies credit or share credit. DOEE has committed to working with Federal Agencies to assign credit for projects funded by Stormwater Utility Fee dollars on their land if they determine past efforts and future implementation plans will not meet Federal Planning Goals. See DC Phase III WIP Page Section 7.1.2 Page 130.	Revised - Revised to say, "In addition, DOEE stipulates conditions under which the credit for projects on federal land is claimed by DOEE or divided with the federal agency."
48	Draft Final	John Maleri	DOEE	3-5	1	The FPG methodology is equitable between federal and non-federal entities. However, unlike other non-federal ratepayers of the stormwater utility fee, federal agencies have required load reductions specified in the Phase III WIP document. For this reason, equity as utility rate payers need to be addressed with federal agencies.	This statement is misleading. Additional load reductions are expected from non-federal land as well, and the bulk of those reductions come from entities complying with the District's stormwater regulations	Revised - The report has been revised to indicate that non-federal ratepayers contribute to a collective "Nonfederal" reduction goal that is expected to be achieved largely through regulatory compliance. Federal agencies are unique in that they are assigned a specific load reduction by name.
49	Draft Final	John Maleri	DOEE	3-5	Table 3-1	Table 3-1. Assessment of Phase III WIP FPGs, Washington, D.C. row	This was the comment of one agency, not all, and it was resolved by noting that if federal agencies were unable to meet their FPGs through existing and planned BMPs, DOEE is open to developing ways to give them credit based on their stormwater fee payment.	Revised - While that assistance may provide relief, it is not clear if it addresses the underlying equity concern between federal and non-federal entities. This may merit additional discussion if a federal agency has concerns.
50	Draft Final	John Maleri	DOEE	3-7	1	Federal agencies, excluding ARS, also have BMP implementation in the 2019 Progress scenario.	As mentioned earlier we believe ARS BMPs are incorrectly labeled in CAST as USDA in the 2019 Progress Reporting	Revised - This comment was incorporated in Section 2.2.1. However, if federal BMPs are present in CAST but not credited to the federal agency, they are not fully represented, and the BMPs are not accounted for. Sentence has been revised to say, "Federal agencies, excluding ARS, also have BMP implementation assigned to the correct agency code in the 2019 Progress scenario."
51	Draft Final	John Maleri	DOEE	3-7	1	DOEE has clarified that federal agencies are not committed to achieve the implementation in the WIP 3 Final scenario; if the FPGs defined in the Phase III WIP are achieved, DOEE's expectations for that federal agency are met.	This can be edited to more clearly state that federal agencies are not committed to meeting the specific BMPs included in the WIP 3 Final Scenario so long as their FPG pollutant load reductions are achieved. The same is true for all states in the watershed as well, and DOEE is applying these decision rules and evaluation frameworks consistently to federal agencies.	Revised - Revision accepted. "DOEE has clarified that federal agencies are not committed to implement the specific BMPs included in the WIP 3 Final scenario so long as the FPG load reductions are reached; if the FPGs defined in the Phase III WIP are achieved, DOEE's expectations for that federal agency are met."
52	Draft Final	John Maleri	DOEE	3-15	1	DOEE expects federal agencies to achieve the load reductions documented in the Phase III WIPs, not the modeled loads in the WIP 3 Final scenario.	Can it be noted that in almost every example DOEE is requiring a less aggressive level of effort as compared to 2019 progress for DC's FPGs (Phase III WIP, in the graph) as compared to the level of effort provided by the agencies themselves (WIP 3 Final). That point is getting lost a bit.	Revised - Revision accepted. "DOEE expects federal agencies to achieve the load reductions documented in the Phase III WIPs, not the modeled loads in the WIP 3 Final scenario, and in almost every case, the Phase III WIP FPG requires a lower level of effort than the agency's WIP 3 Final scenario inputs."
53	Draft Final	John Maleri	DOEE	3-15	1	As shown in Figures 3-9 and 3-10, some agencies (GSA, NPS, Smithsonian) have achieved some FPGs from the Phase III WIP and WIP 3 Final scenario.	Can it be noted that while some agencies 2019 Progress totals are below the FPG for 2025, these agencies will still be required to account for any changes in loads moving forward towards 2025 based on development or land use change.	Revised - Revision accepted. "In those cases, the federal agency is still expected to offset increases in loads due to development or land use changes."
54	Draft Final	John Maleri	DOEE	3-18	2	As documented in Section 2, there are potential improvements to the federal BMP record in CAST, which would be expected to reduce loads through the reporting and crediting of existing BMPs.	The DC examples show cases where the BMPs we are crediting to federal agencies are greater than what is expected, so this statement is not always true.	Revised - DC is a potential exception, but the statement is generally true across the majority of jurisdictions. I have added "in most cases" to the end of the sentence.

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55	Draft Final	John Maleri	DOEE	4-1	4	In some cases, federal agencies do not submit data to the jurisdictions, despite the presence of facilities in the state.	Consider including after state "Or jurisdictions cannot verify that BMPs are being maintained and therefore agencies cannot still receive credit for pollutant reductions."	Revised - Added, " Or the jurisdictions cannot verify that BMPs are being maintained, leading to loss of credit. "
56	Draft Final	John Maleri	DOEE	4-2	11	There are outstanding questions about the level of effort and equity of the FPGs in some of the Phase III WIPs.	This whole report makes no reference to the Executive Order 13508 strategy, which committed federal agencies to lead by example in reducing loads from federal lands. It's contradictory to now say any goal that asks them to do more than non-federal land is inequitable. It also glosses over the fact that in some jurisdictions (DC), non-federal land committed to do more by also addressing the impacts of climate change.	Revised - Federal leadership in the context of EO13508 was never translated as additional allocations of nutrient and sediment reduction beyond non-federal allocations. Federal budgets rarely allow excess funds to be used beyond strict permit requirements, let alone to address any portions of loads outside permitted discharges. Equity has always been the agreement with other federal leadership opportunities abounding at the local level. EO13508 has been added to the Introduction, and the report has been revised to document that climate change impacts are added only to the District's non-federal FPG.
57	Draft Final	Ande Remington	NASA	2-8	1	NASA owns 1,229 acres in Maryland and 516 acres in Virginia. In Maryland, 386 acres (31 percent) are assigned to the Developed source sector, and in Virginia, 327 acres (63 percent) are in the Developed sector.	Acres [are] incorrect. NASA Langley Research Center (LaRC) has 764 acres in Virginia. 468 acres are in regulated MS4 area, and 295 acres are TMDL-Excluded forest lands.	Revised - Federal land use data is processed and modified for use in CAST, so the land use acres assigned in the 2019 Progress scenario may not align with your information. This information has been added to page 1-1 prior to Table 1-1. The introduction for each federal agency has also been revised to reflect that the land use acres are those assigned in CAST (rather than owned or controlled by the agency).
58	Draft Final	Ande Remington	NASA	2-8	2	The Virginia BMP record from the NASA Langley Research Center in Virginia includes 33 BMPs.	Our record of 33 BMPs includes only 10 BMP practices that are repeated across the years (such as building demos, reforestation projects, etc.). For example, there are 12 instances of Impervious Surface Reduction. How is it expected that all 29 BMPs would be eligible for credit in one year?	No change - The BMP implementation in the annual CAST Progress scenario is cumulative; it will include both previously-implemented BMPs (i.e. historical) and progress BMPs. Each instance is reported, and therefore credited, as an individual BMP. Assuming that each row is a unique BMP that is inspected/maintained within the prescribed time period, all 29 BMPs will be credited in the current progress year. The exceptions are BMPs like storm drain cleaning and street sweeping, which are only credited if they are conducted in the current progress year. As an example, street sweeping must be conducted between July 1, 2019 and June 30, 2020 to be credited in the 2020 Progress scenario. Street sweeping performed before July 1, 2019 will not be credited in the 2020 Progress scenario.
59	Draft Final	Sarat Calamur	NASA	2-8	2	Of these, four BMPs are expired annual practices (e.g. storm drain cleaning, street cleaning) or practices not credited to federal agencies (e.g. erosion and sediment control).	When was guidance issued that these practices are expired?	No change - The CAST Phase 6 NEIEN Appendix lists the credit duration for each BMP type. The credit duration of storm drain cleaning, street sweeping, and erosion and sediment control BMPs is one year, meaning that the BMP must be reported each state year to receive credit in the annual Progress scenario. You will receive credit for the street sweeping and storm drain cleaning BMPs listed as progress BMPs, but older entries of these BMP types will not be credited because the credit duration is expired.
60	Draft Final	Ande Remington	NASA	2-8	2	Of these, four BMPs are expired annual practices (e.g. storm drain cleaning, street cleaning) or practices not credited to federal agencies (e.g. erosion and sediment control).	The new Chesapeake Bay TMDL Guidance includes street sweeping and storm basin cleaning. These methods were included/credited in our TMDL Action Plan. Why can't they be counted here?	No change - Street sweeping and storm drain cleaning are credited by CAST. However, because they are an annual BMP, you will only receive credit for the BMPs you submit as progress (conducted between July 1 of the previous year and June 30 of the current year). Annual BMPs must be reported each year to receive credit (consistent with MS4 permit requirements).
61	Draft Final	Sarat Calamur	NASA	2-8	2	Of these, four BMPs are expired annual practices (e.g. storm drain cleaning, street cleaning) or practices not credited to federal agencies (e.g. erosion and sediment control).	It has been our understanding that we can take credit in CAST for ESC, but the state takes credit for post-construction BMPs. Is this wrong?	No change - Federal agencies are not assigned an acreage for the "Construction" land use type that erosion and sediment control BMPs are applied to. Therefore, you will not receive credit for that practice in CAST. However, state requirements and credit toward MS4/TMDL Action Plan requirements may be different.
62	Draft Final	Sarat Calamur	NASA	2-8	Table 2-8	Table 2-8. Number of NASA BMPs Credited in 2019 Progress vs. NASA BMP Records, Virginia row, BMPs in 2019 Progress column	From what I understand, of the 3 BMPs that EPA is crediting to NASA, 2 are ESC level 2; it was previously stated that federal facilities cannot take credit for it. So which is it?	Revised - The three BMPs credited to NASA in the CAST 2019 Progress scenario are Impervious Surface Reduction BMPs. A typo in the Virginia paragraph of Section 2.5.1.1 erroneously indicated that the credited BMPs were erosion and sediment control practices. It has been corrected.
63	Draft Final	Ande Remington	NASA	2-9	1	NASA provided a record of 33 BMP for 2019 Progress, which included 6 progress BMPs. The historical record includes two expired annual BMPs (storm drain and street cleaning) and two erosion and sediment control practices that would be credited in 2019 Progress.	We have a record of 33 BMP for total progress, not 2019 progress.	Revised - The 2019 Progress scenario (which is distinguished by the capitalization) includes both historical and progress BMP, so it reflects total progress. Sentence revised to say, "NASA provided a record of 33 BMPs for 2019 BMP reporting..." to clarify the difference.

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64	Draft Final	Sarat Calamur	NASA	2-9	1	NASA provided a record of 33 BMP for 2019 Progress, which included 6 progress BMPs.	This is the only correct thing in this paragraph. The sentence doesn't make sense. We sent 6 progress BMPs, but 33 total BMPs? I don't understand where EPA is getting the 33 and 29 from.	Revised - The spreadsheet provided by NASA included 27 BMPs on the NASA Historical Record sheet and 6 BMPs on the NASA 2019 Progress sheet. That is the source of the total count of 33 BMPs. Three practices on the Historical Record will not be credited in CAST (storm drain cleaning, street sweeping, and erosion and sediment control), and one practice on the NASA 2019 Progress sheet will not be credited (erosion and sediment control). Therefore, excluding those four BMPs from the total of 33, there are 29 BMPs we anticipate are eligible for credit in CAST from NASA LaRC. The report has been revised to clarify how these counts were determined.
65	Draft Final	Ande Remington	NASA	2-9	1	The historical record includes two expired annual BMPs (storm drain and street cleaning) and two erosion and sediment control practices that would be credited in 2019 Progress.	Again, LaRC received credit for these in our TMDL Action Plan, and the new CB guidance includes calculations for credit.	See response to Comment 60.
66	Draft Final	Ande Remington	NASA	2-9	3	In Virginia, the implementation of NASA BMPs is not captured in the 2019 Progress scenario loads; therefore, loads in the VA York River Basin are biased higher.	What does this mean? Why is NASA LaRC's data not included in the 2019 data?	No change - Our scope was limited to an evaluation of the 2019 Progress scenario, which showed that NASA is not receiving credit for the load reductions from BMPs implemented at LaRC. You are encouraged to contact VDEQ to better understand why these BMPs were not included. Continued discussion and analysis of data gaps will be ongoing in the Federal Facilities Workgroup.
67	Draft Final	Ande Remington	NASA	2-9	Table 2-10	Table 2-10. NASA 2019 Progress Loads (lbs/year), VA York River Basin row	Where do these numbers come from, so we can verify their accuracy? Also, EOS and EOT are not defined in the document.	Revised - You can re-create this report in CAST from the Reports screen. Select "Loads Report" for Report Type and "State Basin-Area in CBWS Only" as your Geographic Scale. You can then select the VA York River Basin (CBWS Portion Only) as your Geographic Area. You will select "2019 Progress" as the Scenario. I recommend you select "Sector" and "Agency" for Load Source Aggregations and Agency Aggregations, respectively, to be able to view the loads associated with NASA. Edge of Stream (EOS) and Edge of Tide (EOT) are now defined in the Table of Abbreviations and upon first usage.
68	Draft Final	Sarat Calamur	NASA	3-9	Table 3-6	Table 3-6. NASA Percent Reductions Required, 2019-2025 (%), VA York River Basin row	Which BMPs is being accredited to NASA in VA here. I have seen 33 total BMPs, 29 total BMPs, and 6 progress BMPs mentioned above.	Revised - The reductions in these tables are based on the crediting of only the 3 BMPs included in the 2019 Progress scenario. This section of the report has been revised to indicate that it is based on the crediting of only 3 BMPs.

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69	Draft Final	Liz Dawson	US FWS	N/A	N/A	Full report	<p>Due to the U.S. Fish and Wildlife Service's approach to completing BMPs in the Chesapeake Bay, the U.S. Fish and Wildlife Service prefers lower nitrogen, phosphorus, and sediment targets or no targets. The WIP 3 Final Scenario is generally more stringent for the U.S. Fish and Wildlife Service than the EPA default method. U.S. Fish and Wildlife Service targets generally seem much more stringent when compared with some other Federal Agencies. This may need to be reevaluated to provide more fair and equitable targets across Federal Agencies. The U.S. Fish and Wildlife Service would be likely to reach more targets, if the targets were the same as those of Federal Agencies with lower targets. A comparative example is 0% targets set for GSA. GSA has a significant number of 0% targets.</p> <p>One could argue that the U.S. Fish and Wildlife Service should be given all 0% targets because of the U.S. Fish and Wildlife Service's success in completing past BMPs. The U.S. Fish and Wildlife Service will strive towards completing as many BMPs as possible, but the U.S. Fish and Wildlife Service does not expect a consistent level of progress each year. The U.S. Fish and Wildlife Service asks that its unique past performance and possible future limitations be considered in any target setting process.</p> <p>It seems that a 2019 baseline may be fairer to Federal Agencies with no record of past participation. A 2019 baseline may ignore past BMPs and make Federal Agencies with BMPs only after 2019 appear to contribute more than Federal Agencies with a longer record of contributions. This may be effective in encouraging current participation, but it may not give a true picture of overall efforts.</p> <p>One area where the U.S. Fish and Wildlife Service may need to improve is in ongoing reporting of past BMPs and maintenance reporting. In each past year, the U.S. Fish and Wildlife Service reported current year BMPs and planned BMPs. A challenge in this effort is changes in state accepted BMPs. For example, in the past, septic pumping was a creditable BMP in some states and it no longer is. The U.S. Fish and Wildlife Service does maintain a complete list of BMPs for reference purposes. The U.S. Fish and Wildlife Service will attempt to clarify these issues and adjust, if needed, during FY2021 and beyond.</p> <p>Communications between the U.S. Fish and Wildlife Service and the state of West Virginia indicate that West Virginia is working towards crediting BMPs to Federal Agencies.</p>	<p>No change - The 2019 Progress scenario is inclusive of BMP records implemented through 2019, so US FWS will receive credit for BMPs submitted before 2019.</p> <p>With regard to the assignment of FPGs for US FWS, this report shows that there are currently issues with the credited BMP record in CAST. Once those issues are addressed, there will be a more accurate representation of US FWS progress to date and any remaining reductions. At that point, EPA and US FWS will be better positioned to assess if US FWS has or has not met their FPGs.</p>

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70	Draft Final	Bill Howl	USDA ARS	N/A	N/A	Full report	<p>We at the Beltsville Agricultural Research Center, Agricultural Research Service, USDA located on 10 square miles in Prince George's County have been working on 56 BMPs - where we have one dry detention pond; 2 future meadows, 2 grass buffer - vegetated open channels, 1 meadow, 14 stormwater management by era 1985-2002 including (1 biofilter, 1 Grass buffer, 7 urban forest buffers, 1 wetland restoration, 1 forest buffer, 2 wet ponds and wetlands, and 1 wetland restoration); 10 Stormwater Management by era 2002-2010 including (1 dry detention pond and hydrodynamic structure, 2 grass buffers, 2 urban forest buffers, 2 forest buffers and 3 stream restorations); 1 stream creation (PG County), 10 tree plantings, 4 urban forest buffers, 1 urban stream restoration, 1 wet pond and wetland stream connection (MSHA), 6 wet ponds and wetlands, and 1 wet pond and wetlands (CBE). All of these BMPs continue to improve stream quality and water quality.</p> <p>At the United States National Arboretum in Washington DC we have been working on 12 BMPs: where we have 1 meadow management (12), 1 Boxwood collection stormwater infiltration, 1 retention pond (7), 1 Bonsai court yard infiltration basin, 1 flowering tree walk stormwater infiltration (3), 1 permeable path surface, 1 R street parking lot LID, 2 flowering tree walk extensions, 1 Springhouse run restoration, and 1 Riparian buffer springhouse run.</p> <p>Please see the spreadsheets for our BMPs.</p> <p>We have been unable to submit the annual report for 2019 because in 2019 we lost 6 out of 8 of our occupational health and environmental staff - we have no environmental staff at BARC though we have a talented part time virtual environmental protection specialist on detail with us from our Northeast Area and We consult with others at ARS Safety Health and Environmental Branch and the US Department of Agriculture. We expect to submit this to the state of MD within a few week and commit to submitting the 2020 report on time.</p> <p>We appeal to you to use our included data to rate us as is.</p> <p>We have also demolished 20 buildings in 2019 restoring the land and reducing our impervious foot print.</p> <p>We have made some progress in 2019, especially on the reduction of impervious surfaces. However, in the past 4 months we lost our whole environmental unit and haven't yet been able to report. We therefore ask that rather than publicize that ARS has done nothing, allow us to continue with the data which is attached here. We can commit to finish the 2019 report in the next few weeks and to meet the Oct 30 deadline for the 2020 report.</p>	<p>Revised - I have updated the report to include the number of BMPs estimated to be present at the ARS Beltsville and National Arboretum sites.</p>
71	Pre-Final	Mike McMahon	MDE	2-16	4	In Maryland, federal agencies noted missing records and incorrect information associated with some BMPs. MDE has experienced issues with its data reporting system, which should be resolved.	We have fixed the data reporting system in question.	<p>Revised - The report has been upated to indicate that the issues with the system have been corrected.</p>
72	Pre-Final	John Maleri	DOEE	2-5	1	DOEE has indicated that the DoD BMP record in CAST includes 77 BMPs from DoD, 5 BMPs from the U.S. Army Corps of Engineers, and 43 BMPs from the U.S. Navy. U.S. Navy BMPs are reported through the DoD Chesapeake Bay Program (CBP) and are therefore correctly credited under the DoD agency code.	Could be helpful to further clarify that DC submits these BMPs from approved BMP plans which are required under compliance with local stormwater regulations. Many of them are submitted by individual facility owners/management teams. This could be why DoD CBP Office may not be aware of them.	<p>Revised - The paragraph above the comment has been revised to reflect that approved plans are submitted by individual facilities and required to comply with local stormwater regulations.</p>
73	Pre-Final	John Maleri	DOEE	2-6	1	With the unresolved issues between the DoD and DOEE BMP records in Washington, D.C., it is not clear if the actual DoD load is higher or lower than that in the 2019 Progress scenario.	The issues do not solely exist between DoD and DOEE. The BMP agency codes in CAST present issues between DoD and CBP.	<p>Revised - The sentence has been revised to indicate that there are unresolved issues between DoD and DOEE and issues with the agency code in CAST.</p>

Federal Agency Progress Evaluation Comment Log								
Number	Report Version	Commenter	Agency	Page Number	Paragraph Number	Report Text	Comment	Response
74	Pre-Final	John Maleri	DOEE	3-5	2	...non-federal ratepayers are not required to provide additional funding for and will not be held accountable individually for their contribution to the District's pollutant load reductions.	<p>In general this statement is incorrect. Non-Federal ratepayers are held accountable for their contributions to the District's pollutant load reductions by complying with local stormwater regulations.</p> <p>Is the point trying to be made that non-federal landowners in DC don't have specific planning goals in the WIPs? That is not a requirement anywhere so confusing why it is included here. These landowners help DC achieve it's nonfederal goals.</p> <p>DC's holds non-fed landowners accountable through our Stormwater Management Regulations which require any new development or redevelopment that disturbs over 5,000 square feet (or meets other criteria) must retain stormwater runoff. This is how we will meet a majority over our non-fed, non-wastewater load reductions.</p>	Revised - This statement has been removed.
75	Pre-Final	John Maleri	DOEE	3-5	2	Instead, projects funded through the stormwater utility fee and projects implemented to comply with stormwater regulations are expected to achieve a general "Nonfederal" reduction goal.	This is not fully accurate. BMPs installed on Federal Land to comply with local DC Stormwater Regulations are credited to the agency where they are installed.	Revised - A statement has been added to reflect that Federal agencies are also subject to local stormwater regulations.
76	Pre-Final	John Maleri	DOEE	3-5	2	However, the named federal agencies in CAST are expected to implement water quality improvement projects to achieve FPGs specified for their agency in the Phase III WIP document, in addition to payment of the stormwater utility fee.	<p>This is an expectation of the EPA for Phase III WIP development. Can that be clarified here. Including it specifically in this section makes it seem like DC is the one requiring this when that is not true. Removing it from this section would be the preference.</p> <p>There is no situation where a landowner in DC can only opt to pay the stormwater fee as their contributions to this work. Landowners must also comply with Stormwater Management regulations to allow DC to meet our targets.</p>	Revised - The report has been revised to indicate that non-federal rate payers are subject to stormwater regulations and pay the stormwater utility fee. Federal ratepayers are subject to the same requirements, pay the utility fee, and have water quality improvement goals, consistent with the Phase III WIP expectations.
77	Pre-Final	John Maleri	DOEE	3-7	5	Federal agencies, excluding ARS , also have BMP implementation assigned to the correct agency in the 2019 Progress scenario.	Understand the reasoning for this (i.e ARS BMPs not coded to ARS in CAST are incorrect),but can more be added here as context? Maybe "excluding ARS due to CAST coding discrepancies"? Advocating for this to help ARS and reaffirm that they at least have some BMPs. The report as read shows them having 0.	Revised - Added a sentence that says, "ARS BMPs are included in the 2019 Progress scenario but under an incorrect agency code."
78	Pre-Final	John Maleri	DOEE	3-20	1	DOEE expects federal agencies to achieve the load reductions documented in the Phase III WIPs, not the modeled loads in the WIP 3 Final scenario, and in almost every case, the Phase III WIP FPG requires a lower level of effort than the agency's WIP 3 Final scenario inputs.	Can we add "and the EPA Default Method" here too?	No change - In 3 out of 5 cases, the EPA Default Method level of effort is lower than the Phase III WIP, so it would not be correct to add that in almost every case, the Phase III WIP is lower than the EPA Default Method.