



2021 Federal Agency Progress Evaluation


December 13, 2022



Photo by Will Parson/Chesapeake Bay Program with aerial support by Southwings

Agenda

1. Background
2. BMP Credit Evaluations
3. 2021 Progress Scenario Review
4. Federal Planning Goals
5. Effort to Reach 2025
6. Next Steps



Agencies with land, facilities, or installation management responsibilities affecting ten or more acres within the watershed of the Chesapeake Bay shall, as expeditiously as practicable and to the extent permitted by law, implement land management practices to protect the Chesapeake Bay and its tributary waters...”

– *Executive Order 13508*

Federal Agencies in CAST

Eight federal agencies are named in the Chesapeake Bay TMDL and tracked with individual agency codes in CAST:



**Agricultural
Research
Service**



Smithsonian



2019 Progress Evaluation Outcomes

BMP Data

“Low” or “medium”
confidence in CAST BMP
data



FPGs

Lack of consensus around
equitable FPGs in several
jurisdictions



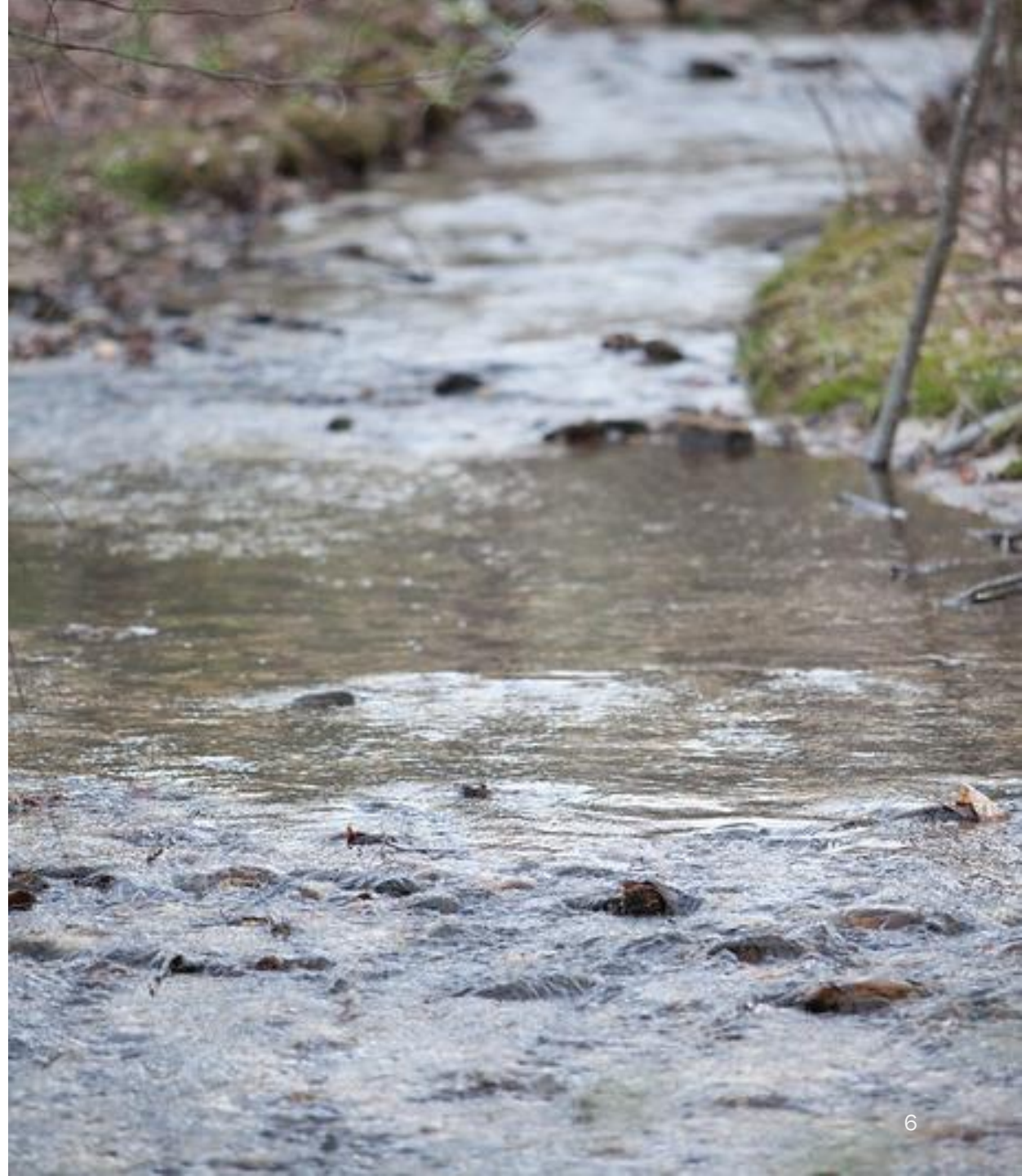
Next Steps

More work needed to
accurately represent
federal progress in CAST



2021 Progress Evaluation Goals

*Provide **actionable** information for jurisdictions and federal agencies to improve the reporting and crediting of federal BMPs and further the effort to build consensus about the equity of FPGs.*



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BMP Credit Evaluations

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Level of Effort Evaluation

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Conclusions

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Federal Planning Goals

2021 Progress Evaluation

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BMP Credit Evaluations

Analyze presence of federal BMPs in the jurisdiction database, NEIEN, and CAST.

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2021 Progress Scenario Review

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Federal Planning Goals

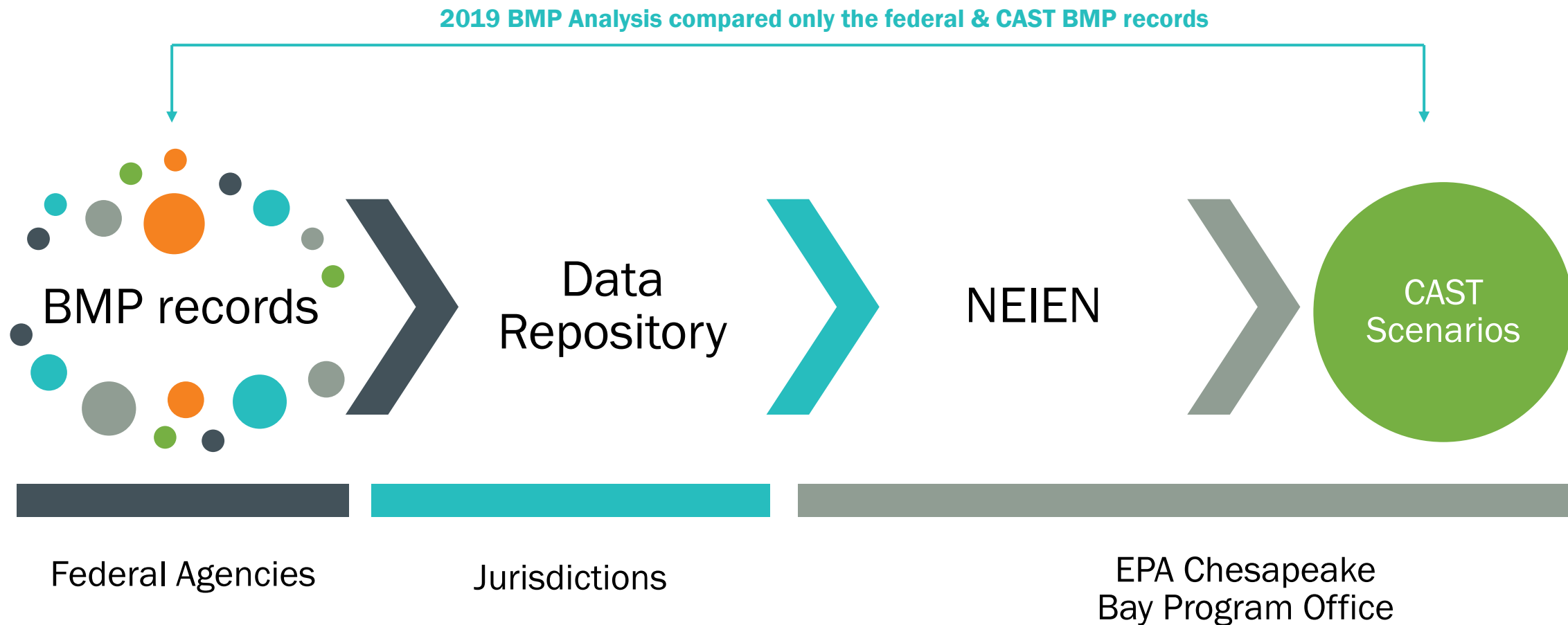
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Level of Effort Evaluation

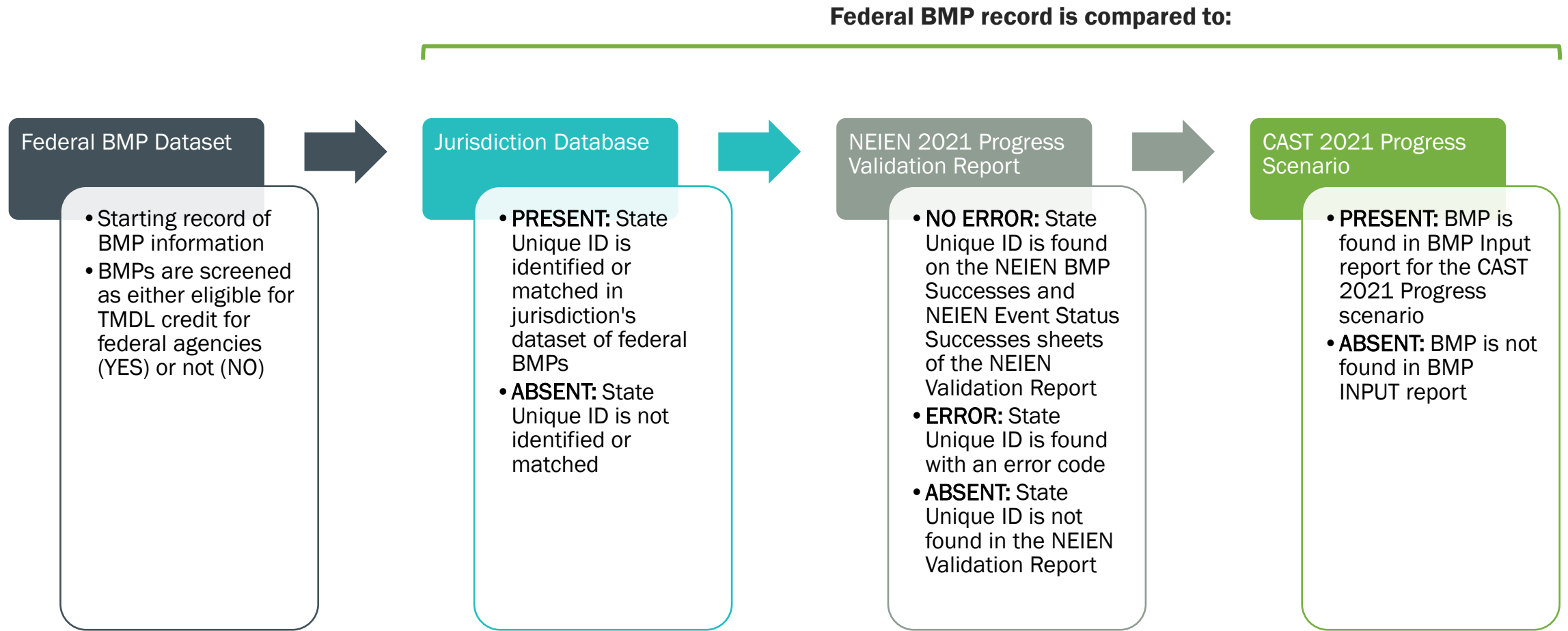
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Conclusions

BMP Crediting Process



BMP Credit Evaluation Process



Spreadsheet Structure

Federal Agency BMP Credit Evaluation

Virginia

Dated September 9, 2022

Purpose

The purpose of the BMP Credit Evaluation is to compare each major federal agency's BMP record to the BMP data assigned their agency code in the jurisdiction database, the National Environmental Information Exchange Network (NEIEN), and the Chesapeake Bay Assessment Scenario Tool (CAST). This evaluation also leverages information provided in the NEIEN Validation Report to describe why some BMPs are not included in the CAST 2021 Progress scenario.

Limitations

This evaluation only determines if BMPs are present in the CAST 2021 Progress scenario; it does not assess the amount of the BMP that is credited or the associated pollutant reductions.

It also does not assess BMPs in the jurisdiction database, NEIEN, or CAST that are not assigned to the correct agency code. Furthermore, the explanations for lack of credit are limited to error codes identified from NEIEN, BMPs that need to be reported to the jurisdiction, and BMP types that are not eligible for credit for federal agencies.

Organization

The workbook includes a tab for each federal agency, which includes the BMP records provided by the federal agency. For the purposes of the BMP Credit Evaluation, some columns have been added to this sheet. These column headers are shaded with gold fill color. A description of the columns are included here:

Column Title	Description
RecordID	RecordID contains a unique identifier assigned to the BMP for this analysis.
Is it Credited?	The cell contents (YES/NO) indicate if the BMP is present with the correct federal agency code in CAST.
Jurisdiction Status	The cell contents (PRESENT/ABSENT) indicate if the BMP was found in the jurisdiction's database of federal BMPs.
NEIEN BMP Status	The cell contents indicate if the BMP was present in the NEIEN validation report with a BMP error (ERROR), if it was present in the NEIEN validation report without a BMP error (NO ERROR), or if the BMP was not found on the sheets that screen for BMP errors (ABSENT).

◀ ▶ READ ME DoD NASA NPS USFWS Jurisdiction +

Start on the READ ME sheet.

Explains how to interpret the results

Individual agency sheets with BMP records

"Jurisdiction" sheet includes jurisdiction BMP record for federal agencies

BMP Credit Evaluation Data Response

Response to request provided to federal agencies in February 2022 for historical and 2021 progress BMPs.

Agency/State	MD	NY	PA	VA	DC	WV
ARS						
DoD						
GSA		No response provided.	No response provided.	No response provided.		No response provided.
NASA						
NPS					No BMPs reported.	
Smithsonian	No response provided.			No response provided.	No response provided.	
USACE						
US FWS						
USFS				No BMPs reported.		No BMPs reported.

Legend

Response received.

No response received or BMP data not provided where anticipated.

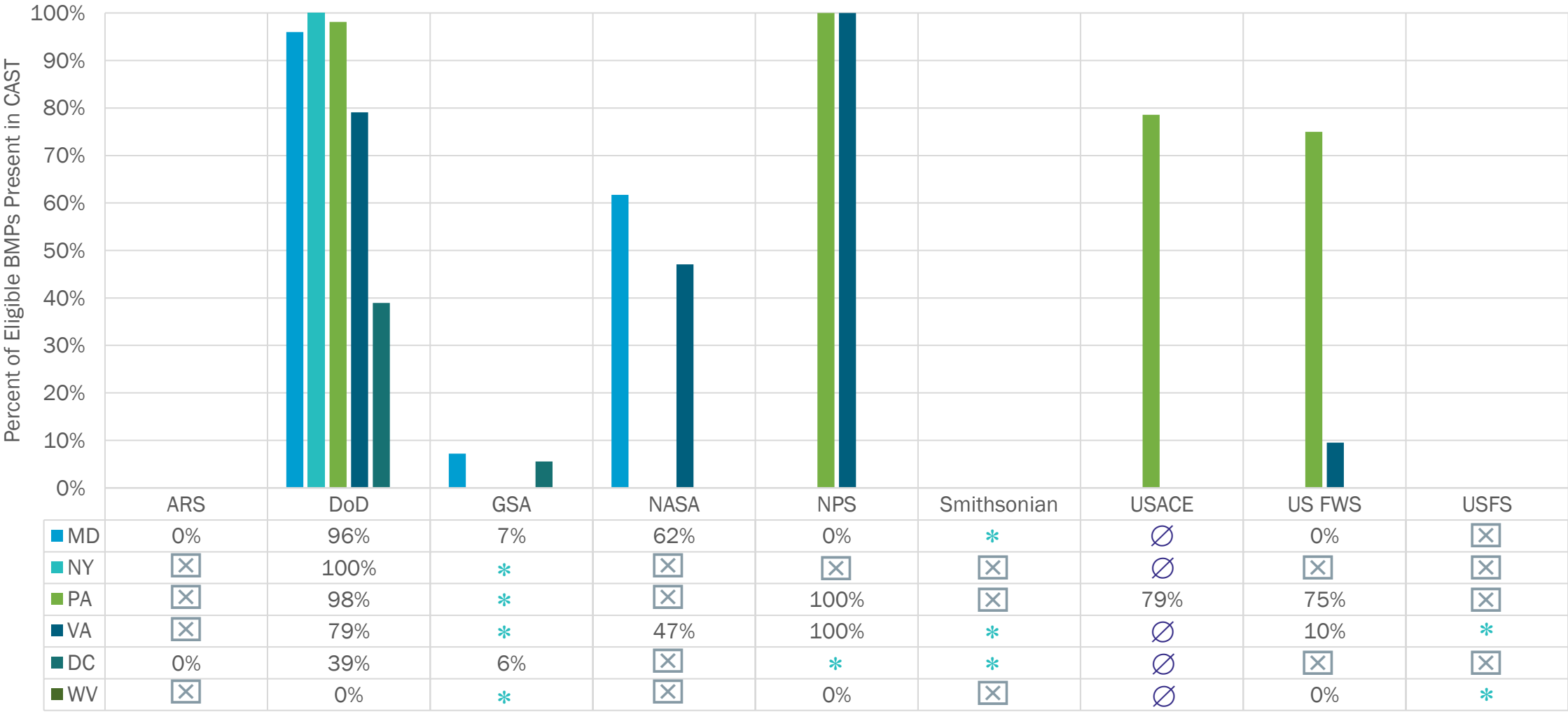
Federal agency does not have land in CAST.

BMP Credit Evaluation Results

No land acres/no BMP data expected

BMP data expected but not provided

No BMPs eligible or expected



BMP Credit Evaluation Results

How many eligible BMPs from the federal agency are in the CAST 2021 Progress scenario?

Agency/State	MD	NY	PA	VA	DC	WV
ARS	0%				0%	
DoD	96%	100%	98%	79%	39%	0%
GSA	7%	No BMPs reported.	No BMPs reported.	No BMPs reported.	6%	No BMPs reported.
NASA	62%			47%		
NPS	0%		100%	100%	No BMPs reported.	0%
Smithsonian	No BMPs reported.			No BMPs reported.	No BMPs reported.	
USACE	No BMPs eligible.	No BMPs eligible.	79%	No BMPs reported.	No BMPs reported.	No BMPs eligible.
US FWS	0%		75%	10%		0%
USFS				No BMPs reported.		No BMPs reported.

% = Number of BMPs in CAST / Number of BMPs Eligible for Credit in CAST

based on data provided by federal agencies and jurisdictions provided in February 2022 and the CAST 2021 Progress scenario.

Federal Agencies & CAST Source Sectors

BMPs in these source sectors are credited to the **federal** agency code



Developed*



Natural*

BMPs in these source sectors are reassigned to the **nonfederal** agency code



Septic



Agriculture

There are not BMPs for these source sectors



Atmospheric



Wastewater



Note: Federal agencies are not assigned **Harvested Forest** (Natural sector) or **Construction** (Developed sector) acres, so BMPs applied to these load source groups are uncredited.

Common Reasons BMPs Are Excluded



The BMP type is not an approved BMP for the Chesapeake Bay Total Maximum Daily Load (TMDL).

Examples: flow gates, low-flow fixtures, land conservation



The BMP type is an approved BMP but cannot be credited to a federal agency code.

Examples: Agricultural BMPs, silviculture, construction erosion & sediment control, septic system pump-outs, wastewater treatment plant enhancements



The BMP is not credited due to an issue with the BMP inspection, maintenance, or implementation date.

Examples: outdated inspection, failed inspection without a maintenance date, pre-2008 shoreline BMPs

Common Reasons BMPs Are Excluded



The BMP was not found in the jurisdiction database.

Examples: BC could not locate or confidently match the BMP's State Unique ID in the jurisdiction database.



The BMP is not credited due to missing information.

Examples: BMP record is missing a built date, required metric, or location information.

Recommended Actions to Address Data Gaps

For federal agencies

The following actions may be applicable based on each agency's BMP Credit Evaluation results:

- Review BMPs that are not in the jurisdiction database and report missing BMP records in the jurisdiction template
- Report updated inspection dates for BMPs with expired lifespans
- Complete & report maintenance for BMPs with a failed inspection
- Report missing information for individual BMP records
- Review BMPs that are in the jurisdiction database but not the agency's



BMP Data Recommended Actions

For jurisdictions

- Review BMPs that are in the jurisdiction database but not in the federal agency data record
- Review the BMP Credit Evaluation results to assess trends
- Share State Unique IDs with federal agencies

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BMP Credit Evaluations

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Level of Effort Evaluation

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2021 Progress Scenario Review

Assess progress of federal agencies that meet a minimum completeness criterion based on the agency's BMP record.

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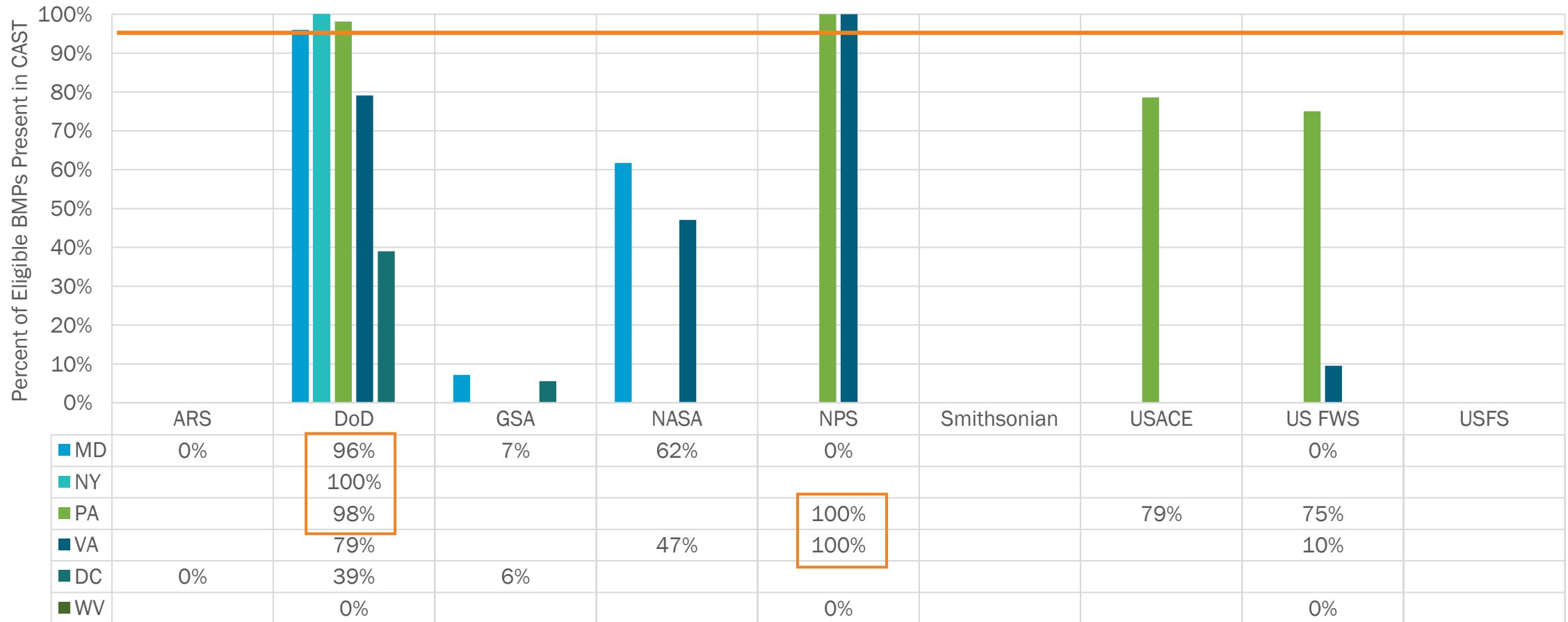
Conclusions

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Federal Planning Goals

2021 Progress Scenario Review

95% minimum
completeness
criteria



2021 Progress Scenario Results

DoD in MD, NY, and PA

State-Basin Name	2021 Progress Loads (lbs/yr EOT)			2019 Progress Loads (lbs/yr EOT)			Change in Loads, 2019-2021 (lbs/yr EOT)		
	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS
MD Eastern Shore of Chesapeake Bay	18,935	6,663	29,533,747	19,225	6,851	30,030,580	-290	-188	-496,833
MD Patuxent River Basin	77,972	15,148	45,154,614	77,807	15,261	45,796,378	+165	-113	-641,764
MD Potomac River Basin	124,798	32,195	129,092,153	125,769	32,244	128,785,173	-971	-49	+306,980
MD Susquehanna River Basin	970	42	60,778	982	43	61,513	-13	-1	-735
MD Western Shore of Chesapeake Bay	170,666	53,872	206,475,651	171,888	55,031	209,851,307	-1,222	-1,159	-3,375,656
NY Susquehanna River Basin	7,647	818	853,496	7,651	819	853,797	-4	-1	-301
PA Potomac River Basin	38,138	3,486	5,947,436	38,169	3,490	5,948,541	-31	-4	-1,105
PA Susquehanna River Basin	266,529	10,709	9,331,563	267,523	10,855	9,626,087	-994	-146	-294,524

2021 Progress Scenario Results

NPS in PA & VA

State-Basin Name	2021 Progress Loads (lbs/yr EOT)			2019 Progress Loads (lbs/yr EOT)			Change in Loads, 2019-2021 (lbs/yr EOT)		
	TN	TP	TSS	TN	TP	TSS	TN	TP	TSS
PA Potomac River Basin	17,778	3,305	2,657,366	17,796	3,305	2,661,045	-18	0	-3,679
PA Susquehanna River Basin	14,129	592	510,621	14,129	592	510,621	0	0	0
VA James River Basin	54,734	8,149	17,885,176	54,901	8,199	17,889,952	-167	-50	-4,776
VA Potomac River Basin	184,166	36,390	101,158,304	184,220	36,402	101,174,531	-54	-12	-16,227
VA Rappahannock River Basin	72,876	13,232	29,474,714	72,876	13,232	29,474,712	0	0	+2
VA York River Basin	27,078	6,380	10,125,725	27,212	6,475	10,282,049	-134	-95	-156,324

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Discussions to develop consensus between EPA, jurisdictions, and federal agencies on FPGs.

FPG Sources

Revised EPA Default Method

Targets calculated as: Percent reduction from 2019 Progress loads by agency converted to load goals

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

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

Phase III WIPs

The Phase III Watershed Implementation Plans (WIP) document jurisdiction expectations for federal contribution to the TMDL through 2025; units & data sources vary by jurisdiction.

FPG Review

2019 Phase III WIP FPG Review Outcomes

Jurisdiction	Is the FPG Defined Quantitatively?	FPG Unit/Expression	Is the FPG Considered Equitable?	2019 Explanation for FPG Assessment
Maryland	No	N/A	Unclear	Lack of documented expectations
New York	No	N/A	Unclear	Use of Protocol, which uses outdated Model
Pennsylvania	Yes	Reduction & target load	No	Infeasible load reductions (based on original Phase III WIP)
Virginia	Partial	Reduction	Yes	N/A
Washington, D.C.	Yes	Reduction & target load	No	Stormwater fee payment
West Virginia	No	N/A	Yes	N/A

Maryland FPGs

Discussion Items

- **Phase III WIP does not quantify FPGs**
Federal agencies are expected to comply with MS4 permit impervious restoration requirements.
- **MS4 permit restoration requirements are expressed in acres at the facility scale**
Federal agencies can convert facility restoration requirements to loads and consolidate to the jurisdiction or state-basin scale.
- **Maryland Department of Agriculture (MDA) reports agriculture BMPs on federal owned or leased land**
It is not known if MDA distinguishes BMPs from federal owned or leased farms.

Pennsylvania FPGs

Discussion Items

- **Revised Phase III WIP includes different DoD FPGs in the text & table**
The in-text FPGs correctly reflect the updated EPA Default Method FPGs, which were agreed to by PADEP and DoD. The FPG tables (4-1 & 4-2 in the WIP) should be revised to reflect the new FPGs.
- **FPGs for other federal agencies were not changed in the amended Phase III WIP from July 2022.**
They reflect values based on an unequitable methodology applied in the original Phase III WIP.
- **Federal agency plans have not been updated since the original WIP was developed.**
DEP should provide an opportunity for federal agencies to update these plans.

Virginia FPGs

Discussion Items

- **Phase III WIP includes additional expectations outside the Developed & Natural sectors**
There are not currently mechanisms within the Chesapeake Bay Program to track federal progress toward these goals.
- **VDEQ would like the Chesapeake Bay Program to identify mechanisms or assign other sector loads to federal agencies so progress can be tracked**
This decision would require Chesapeake Bay Program approval and should be part of the Phase 7 Chesapeake Bay Watershed Model development.
- **BMPs implemented under a general construction permit are not assigned to federal agencies.**
VDEQ said this issue can be addressed through a future update to the BMP Warehouse.

Washington, D.C. FPGs

Discussion Items

- **Assigning FPGs to agencies that pay the stormwater utility fee is unequitable with non-federal entities.**

DOEE noted that the stormwater utility fee is used for programmatic efforts related to implementation of the District MS4 permit, not Chesapeake Bay TMDL projects.

Documentation of how the stormwater utility fee revenue is utilized has not been provided.

FPG Summary

Jurisdiction	FPG Scale	Equity Considerations	Is the FPG Considered Equitable (2019)?	Is the FPG Considered Equitable (2022)?
Maryland	Facility/Permittee	<ul style="list-style-type: none"> FPG units Facility-level goals 	Unclear	Yes
Pennsylvania	County-scale	<ul style="list-style-type: none"> Phase III WIP tables should be updated to reflect agreed upon FPGs 	No	Yes, if action items are completed
New York	Jurisdiction	<ul style="list-style-type: none"> Use of Protocol, which is based on outdated Model 	Unclear	Not assessed
Virginia	Jurisdiction	<ul style="list-style-type: none"> No mechanisms to quantify to track some Phase III WIP expectations 	Yes	Yes, for Developed & Natural sector goals
Washington, D.C.	Jurisdiction	<ul style="list-style-type: none"> Payment of stormwater utility fee and equity with non-federal payers 	No	TBD, pending outcome of action item
West Virginia	N/A	<ul style="list-style-type: none"> No FPGs assigned 	Yes	Not assessed

FPG Recommended Actions

Jurisdiction	Action Items
Maryland	MDE to review NEIEN inputs to assess if BMPs from federally owned ag land are tracked (short-term)
	MDE will renew the MS4 permit in 2025 (long-term); federal agencies should engage in the renewal process
Pennsylvania	PADEP and EPA (Jeff Sweeney) to update FPGs using the revised EPA Default Method (short-term)
	PADEP to update Tables 4-1 and 4-2 with the revised FPGs in a future WIP addendum (medium-term)
Virginia	VDEQ and CBP to encourage federal agencies to report BMPs across all source sectors through the BMP Warehouse (short-term)
	VDEQ/CBP to raise possibility for discussion of adding other sector loads during development of the Phase 7 model (long-term)
	VDEQ and CBP to consider methods to assess federal agency progress toward other source sector goals through additional data collection or CAST scenarios to estimate load reductions (short-term). Additional data requests requiring federal agency input is a long-term action item.
	VDEQ to update the BMP Warehouse to designate federal BMPs imported from the jurisdiction's separate database of BMPs implemented under a Stormwater Construction General Permit (short-term).
Washington, D.C.	DOEE to provide a description of how stormwater utility fee revenue is used within the District with the intent to demonstrate it is not used for Chesapeake Bay TMDL compliance (short-term).

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Level of Effort Evaluation

Percent reduction and pound reductions needed to reach the 2025 FPGs.

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Level of Effort Evaluation Criteria



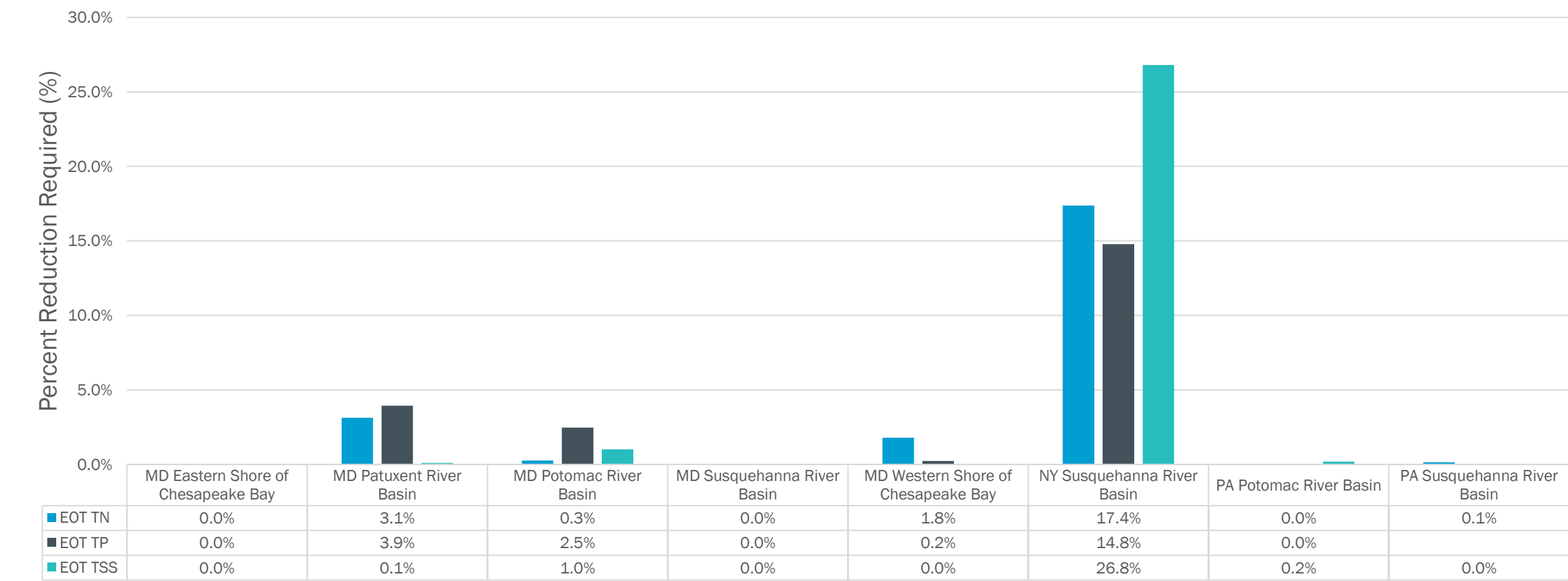
	BMP Record Completeness	Phase III WIP FPG Equity	EPA Default Method Equity
MD	97%	Not quantified	Equitable
NY	100%	Not quantified	Equitable
PA	96%	Equitable	Equitable



PA	100%	Equitable	Equitable
VA	100%	Equitable	Equitable

DoD Level of Effort Evaluation

DoD Percent Reduction Required, 2021 Progress to EPA Default Method FPGs



Note that DoD reductions required includes effort from the DoD Chesapeake Bay Program and USACE.

DoD Level of Effort Evaluation

DoD Maryland EOT TN Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed to Achieve FPG	Excess Load Reductions Achieved Beyond FPG
MD Eastern Shore of Chesapeake Bay	18,935	19,033	0	98*
MD Patuxent River Basin	77,972	75,525	2,447	0
MD Potomac River Basin	124,798	124,468	330	0
MD Susquehanna River Basin	970	970	0	0
MD Western Shore of Chesapeake Bay	170,666	167,597	3,069	0
Maryland - Total	393,341	387,594	5,486	

**As the TMDL proceeds, EPA may consider allowing cross state-basins exchanges using the state-basin load conversion factors.*

DoD Level of Effort Evaluation

DoD Maryland EOTTP Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed to Achieve FPG	Excess Load Reductions Achieved Beyond FPG
MD Eastern Shore of Chesapeake Bay	6,663	6,803	0	140*
MD Patuxent River Basin	15,148	14,552	596	0
MD Potomac River Basin	32,195	31,400	796	0
MD Susquehanna River Basin	42	42	1	0
MD Western Shore of Chesapeake Bay	53,872	53,745	128	0
Maryland - Total	107,921	106,541	1,520	

**As the TMDL proceeds, EPA may consider allowing cross state-basins exchanges using the state-basin load conversion factors.*

DoD Level of Effort Evaluation

DoD New York EOT TN Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
NY Susquehanna River Basin	7,647	6,318	1,329	0
New York - Total	7,647	6,318	1,329	0

DoD New York EOT TP Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
NY Susquehanna River Basin	818	697	122	0
New York - Total	818	697	122	0

DoD Level of Effort Evaluation

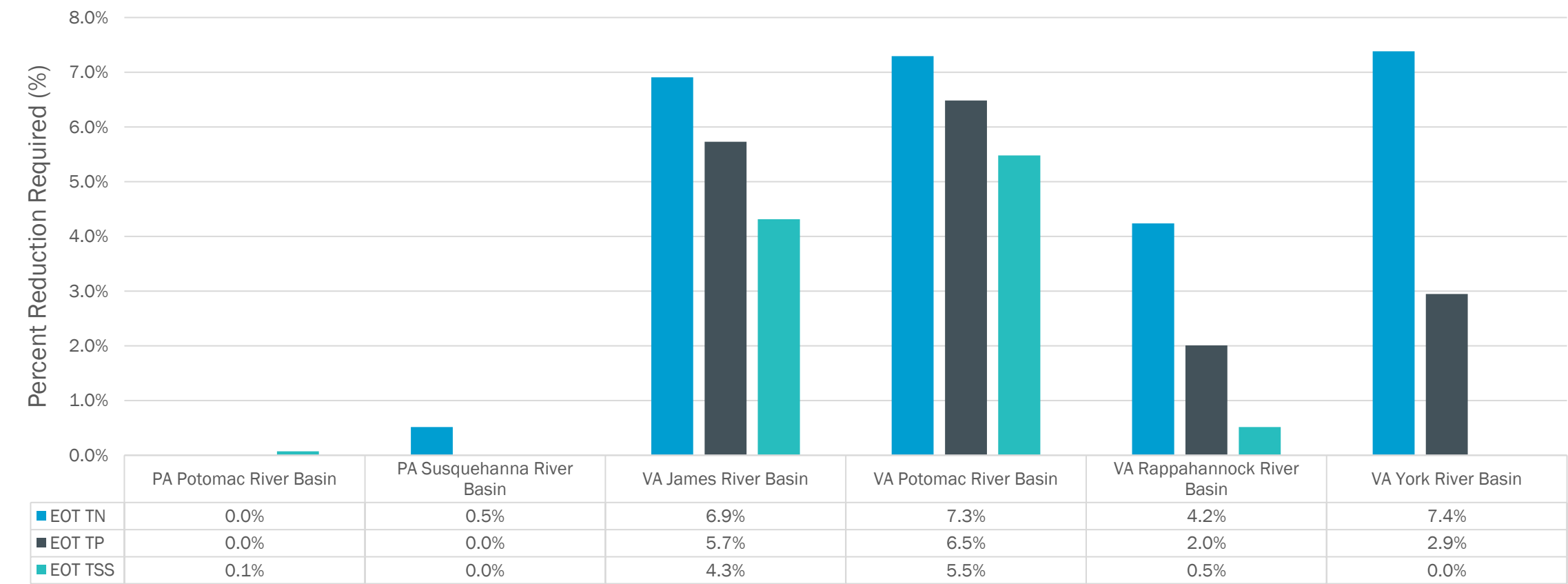
DoD Pennsylvania EOT TN Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
PA Potomac River Basin	38,138	38,169	0	31 *
PA Susquehanna River Basin	266,529	266,146	384	0
Pennsylvania – Total	304,668	304,315	384	

DoD Pennsylvania EOT TP Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
PA Potomac River Basin	3,486	3,490	0	4 *
PA Susquehanna River Basin	10,709	10,855	0	147 *
Pennsylvania – Total	14,195	14,346	0	

**As the TMDL proceeds, EPA may consider allowing cross state-basins exchanges using the state-basin load conversion factors.*

NPS Level of Effort Evaluation

NPS Percent Reduction Required, 2021 Progress to EPA Default Method FPGs



NPS Level of Effort Evaluation

NPS Pennsylvania EOT TN Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
PA Potomac River Basin	17,778	17,796	0	18*
PA Susquehanna River Basin	14,129	14,056	73	0
Pennsylvania – Total	31,906	31,851	73	18

NPS Pennsylvania EOT TP Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
PA Potomac River Basin	3,305	3,305	0	0
PA Susquehanna River Basin	592	592	0	0
Pennsylvania – Total	3,897	3,897	0	0

**As the TMDL proceeds, EPA may consider allowing cross state-basins exchanges using the state-basin load conversion factors.*

NPS Level of Effort Evaluation

NPS Virginia EOT TN Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
VA James River Basin	54,734	50,955	3,779	0
VA Potomac River Basin	184,166	170,732	13,433	0
VA Rappahannock River Basin	72,876	69,788	3,088	0
VA York River Basin	27,078	25,079	1,999	0
Virginia - Total	338,853	316,554	22,299	

NPS Level of Effort Evaluation

NPS Virginia EOT TP Loads (lbs/yr)				
State-Basin Name	2021 Progress	EPA Default Method FPG	Load Reductions Needed	Excess Load Reductions Achieved Beyond FPG
VA James River Basin	8,149	7,682	467	0
VA Potomac River Basin	36,390	34,031	2,359	0
VA Rappahannock River Basin	13,232	12,966	266	0
VA York River Basin	6,380	6,192	188	0
Virginia - Total	64,150	60,871	3,279	

Level of Effort Evaluation Summary

DoD FPG Level of Effort Summary (2021 Progress Loads to FPGs)				
Jurisdiction	FPG Source	TN Load Reductions Required (lbs/yr EOT)	TP Load Reductions Required (lbs/yr EOT)	TSS Load Reductions Required (lbs/yr EOT)
MD	EPA Default Method	5,486	1,520	1,350,444
NY	EPA Default Method	1,329	122	228,703
PA	EPA Default Method/Phase III WIP	384	0	11,327

NPS FPG Level of Effort Summary (2021 Progress Loads to FPGs)				
Jurisdiction	FPG Source	TN Load Reductions Required (lbs/yr EOT)	TP Load Reductions Required (lbs/yr EOT)	TSS Load Reductions Required (lbs/yr EOT)
PA	EPA Default Method/Phase III WIP	73	0	1,883
VA	EPA Default Method	22,299	3,279	6,465,907
	Phase III WIP	8,594	4,114	N/A

**Load Reductions required for the EPA Default Method do not account for excess reductions in certain state-basins.*

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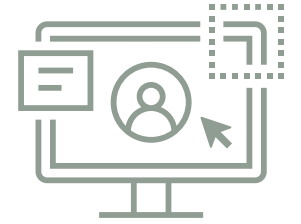
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Conclusions

Next steps based on the recommended actions presented today.

Next Steps

- Provide comments on the Federal Agency Progress Evaluation Report, which will be available **January 26 through February 16**.
- Review your BMP Credit Evaluation results, and based on the results, create a plan to improve your data for next year.
- Sustain discussion between federal agencies and the jurisdictions to address action items related to the FPGs.



Thank you.

Questions?

Brown AND **Caldwell** :



