Federal Facilities Land Use Issue Paper:
Tracking and Crediting Federal Land Uses/BMPs Currently Unassigned

Background Context and Rationale:

Several land uses are not tracked and credited for federal land. Although CAST calculates nutrient and sediment loads from six source sectors (Agriculture, Atmosphere, Developed, Natural, Septic, and Wastewater), federal agencies are currently only assigned specific loads in the Developed and Natural source sectors. In practice, federal agencies may also impact these other source sectors, such as Agriculture, Septic, and Wastewater, but due to past limitations in available data and scale of implementation, the Chesapeake Bay Program elected not to assign these source sectors to federal agencies. Federal agencies already report some BMPs on these available source sectors, but these are aggregated to the jurisdictional level, despite the jurisdiction(s) not managing this land directly.

This results in agencies not being able to get credit toward federal planning goals and leaves a conflict with the expectations for federal landowners that are stated in jurisdiction WIPs (e.g. Virginia). The development of the Phase 7 watershed model is also prompting a review of the treatment of these federal land uses in CAST which could be released by 2028/2029. With added context provided by the Brown and Caldwell report from 2021, an enhanced ability to track and report BMPs on federal lands would benefit the public and each agency to ensure that agencies communicate and measure watershed-wide efforts already occurring to reduce nutrients and sediment. Tracking is technically feasible; however, there are costs related to doing so. Depending on the land uses/BMP types that agencies may be interested in delving into reporting further, this would provide the same opportunity for the federal agencies as the non-federal land holders, and will allow the federal agencies to report BMPs on these available source sectors. This is an effort to create a more equitable reporting landscape across the Partnership, which enables fulfillment of the expectations of federal participation stated in the Clean Water Act and E.O. 13508.

This background represents the rationale for reconsideration, and importantly highlights an opportunity to update the allocations and provide enhanced metrics and breakouts for the efforts of the Chesapeake Bay Program, and federal agency partners.

Previous Developments and Next Steps:

During the December 2024 meeting, Peter Claggett, USGS, provided an overview of the proposed solution(s) to gather feedback from the FFWG. The slides from this presentation can be accessed here. Then, during the February 2025 meeting, the FFWG reviewed an earlier draft of the following paper to solicit further feedback and questions related to the proposed solution(s).

Step 1: During the April 8th, 2025 FFWG meeting, the FFWG discussed the following paper—which outlines the currently unassigned land uses/BMP types for federal agencies and the proposed solution(s).

Step 2: Between the April and June FFWG meetings, we continue to invite questions and concerns via email, and will edit the paper accordingly if needed. FFWG members are requested to share this paper with their agencies for internal review prior to the June 10th meeting to determine the feasibility of tracking and reporting these land uses/BMP types. Email updates to the FFWG leadership are appreciated to assist with preparing for the June 10th FFWG meeting.

Step 3: During the June 10th, 2025 FFWG meeting, we will review the feedback received to date and continue to discuss and evaluate the feasibility of tracking and reporting these land uses/BMP types.

Step 4*: During the August 10th, 2025 FFWG meeting, we will evaluate if a vote should be called or if additional discussion/clarity is required before a vote can be performed. If additional time is needed, then a vote could be considered for the October 2025 FFWG meeting. **Timeline is subject to change.*

Step 5*: Any final recommendations based on the proposed solution(s) will be presented to the WTWG for concurrence, followed by a final presentation at the WQGIT. The previous FFWG discussions will help inform the WTWG and WQGIT regarding the agencies' capacity to implement baseline creation and/or annual reporting. Additionally, this process will help identify areas where further effort and detail may be needed (e.g. Forest Workgroup for USFS, WTWG for reporting structure, etc.) **Timeline is subject to change.*

***These topics may require significant time and consideration, in addition to review and approval from agency personnel, therefore the timelines of Steps 4 and 5 are subject to change.* **(Last Updated: 5/6/2025)**

Land Use/BMP Type and Proposed Solution(s):

<table>
<tr><th>Land Use/Fed Loads</th><th>Issue</th><th>Proposed Solution(s)</th></tr>
<tr><td rowspan="2">Septic

WIP scenario loading data is not available.</td><td>Septic loads from federal facilities are absent from the CBP watershed model and Federal agencies are not credited for their actions to reduce these loads.</td><td>Proposed Solution:
Step 1: To establish a baseline, federal agencies report resident populations (count) served by septic systems AND the number of septic systems for Phase 7.
Step 2: Agencies report septic BMPs in annual progress reporting for following years.</td></tr>
<tr><td colspan="2">Feedback (as of 5/6/2025):
USFWS:
Usage is quite variable, and while there are some BMPs in place, it is unclear whether going through the process would be worthwhile given the limited number of BMPs.
USFS
We haven’t identified an easy approach for tracking and reporting septic systems, so this would likely be challenging.
DoD
There is no clarity of how many septic systems are on DOD land and it’s unclear whether the effort of tracking and reporting loads and BMPs would be worthwhile. Management is being updated on this discussion for their insight.
NPS</td></tr>
</table>

Land Use/Fed Loads	Issue	Proposed Solution(s)
	● Capacity to monitor/report this sector would be minimal and difficult to collect. NPS does not collect information on septic systems at a regional level, this data would need to be gathered from individual parks. NPS parks do not have resident populations – septic systems are in place as needed for visitors and campers. Data collection would be limited and effort-intensive.	
Construction **Total Federal Load (WIP Scenario):** **N Load**: 42,224 lbs **P Load**: 7,634 lbs **Sediment Load**: 5,089,604 lbs	Pollutant loads from construction activities requiring E&S permits are absent from the CBP watershed model and Federal agencies are not credited for their actions to reduce these loads.	Proposed Solutions: ● Solution 1: Federal agencies report acres to establish a baseline for Phase 7 of land disturbed for construction activities requiring E&S permits (min 5,000 to 10,000 ft2). For following progress years after the release of Phase 7, additional reporting would be required. ● Hypothetical Solution 2: Construction acres can be estimated from the CBP's high-resolution land use data to reduce the annual reporting burden by federal agencies. ○ ***The WTWG and WQGIT are currently evaluating the below option and whether the new CBP high-resolution land use data can be used to streamline and/or reduce the need for annual reporting. A final decision is still being determined.***

Land Use/Fed Loads	Issue	Proposed Solution(s)
	Feedback (as of 5/6/2025): DoD: ● Management is being updated on this discussion for their insight. For context, DoD cannot direct installations to collect BMP data without approval, they must go through a specific chain of command, which will take time. This process involves coordination with multiple services and will require authorization to task installations for additional efforts. NPS: ● Solution 1: NPS regional offices in the CB do not currently track and report annual acres disturbed for construction activities. NPS tracks individual projects in parks (high effort). NPS is not currently tracking erosion and sediment controls used to comply with construction permits. The NPS GIS BMP tracker tracks stormwater management facilities associated with construction and post-construction BMPs such as bioretention areas, tree planting, etc. E&S is an option in the database for reporting, but modifications may be needed for State templates and to add additional reporting options for E&S (medium - high effort). ● Hypothetical Solution 2: Using the CBP high resolution land use would be a low-medium effort.	

Land Use/Fed Loads	Issue	Proposed Solution(s)
Harvested Forest **Total Federal Load (WIP Scenario):** **N Load**: 18,010 lbs **P Load**: 325 lbs **Sediment Load**: 571,311 lbs	Timber harvest land owned by agencies including USFS and NPS involve runoff-reducing BMPs. If not tracked and credited, these agencies miss substantial opportunities for credit.	Proposed Solution to be discussed in further depth at April FFWG meeting by Katie Brownson (USFS): ● Step 1: Federal facilities should report annual acres harvested at the county scale if possible. If federal facilities do not report forest harvesting acres, any true forest acres within the facility footprint could be assigned a "default rate" for facilities where forest harvesting is occuring in a given year. (For context, a default rate of 1.1% is applied at the state level. If a new rate is more appropriate for the federal facility level, that would need to be evaluated with the Forestry Workgroup). ● Step 2: Clearcut harvest acres can be estimated from the CBP's high-resolution land use data. County-scale data reported by the federal facilities would be spatially allocated to the mapped harvested forest footprint up to the amount reported. Any additional reported acres (above the mapped acres) will be distributed across NHD catchments within each county in the facility footprint based on the relative amount of "harvestable" forest in each catchment, which will be defined as forest patches >10 acres.

Land Use/Fed Loads	Issue	Proposed Solution(s)
	Feedback (as of 5/6/2025): USFS: ● We could likely report annual harvested forest acres annually, but whether the USFS will have the capacity to report BMP implementation is uncertain. ● Suggested potential option for an "opt-in" system where facilities that want credit for implementing BMPs could report their data, whereas others would not need to participate in reporting certain land uses could "opt out", which would streamline the process for those for whom it's less relevant. NPS: ● NPS generally does not have harvested forest land in the Chesapeake Bay parks (unknown effort). If NPS is not harvesting on its lands the default rate proposed above would assign an inappropriate load to NPS. DoD: ● Management is being updated on this discussion for their insight. For context, DoD cannot direct installations to collect BMP data without approval, they must go through a specific chain of command, which will take time. This process involves coordination with multiple services and will require authorization to task installations for additional efforts.	
Agriculture **1. Cropland** **Total Federal Load (WIP Scenario):**	At least one jurisdiction's Phase 3 WIP includes expectations for load reductions on federal agricultural lands which they currently don't receive credit for because all	Proposed Solution: ● Step 1: Cropland and Pasture/Hay acres can be estimated from the CBP's high-resolution land use data to reduce the annual reporting burden by federal agencies for Phase 7.

<table>
<tr><th>Land Use/Fed Loads</th><th>Issue</th><th>Proposed Solution(s)</th></tr>
<tr><td rowspan="2">N Load: 521,301 lbs

P Load: 10,714 lbs

Sediment Load: 14,294,091 lbs

2. Pasture/Hay

Total Federal Load (WIP Scenario):

N Load: 400,526 lbs

P Load: 30,677 lbs

Sediment Load: 4,585,493 lbs</td><td>agriculture in the watershed is assumed to be non-federally owned or managed.</td><td>• Step 2: Agencies work with lease holders and other stakeholders to report agriculture BMPs in annual progress reporting for following years.</td></tr>
<tr><td colspan="2">Feedback (as of 5/6/2025):

USFS

• No clear approach for tracking/reporting BMP implementation on ag lands (National Forests appear to have a decent amount of pasture based on the high-res data…).

USFWS:

• They aim to report and track all of their BMPs even if they aren’t getting credit for all of them. Agriculture seems to be an area with more effort due to the challenge of capturing data, but if a way to better capture agricultural BMPs were developed, it would be beneficial for USFWS.

NPS:

• Based on below tables, changing load requirements on agriculture lands would significantly increase NPS WIP requirement for TMDL reductions, and is noted as a “very high bar” to meet for these lands. NPS can track agricultural BMPs within the BMP tracking database with modifications for additional BMPs. Modifications to the BMP tracking database may be needed to align with different States reporting templates for agricultural reporting for Federal lands.

DoD:

• Many DOD agriculture acres are off base and leased to farmers to eliminate encroachment. Questioned what would happen to farmers who apply for state funded agricultural BMPs, whether they would be attributed to the federal or state loads. Management is being updated on this discussion for their insight.</td></tr>
</table>

Land Use/Fed Loads	Issue	Proposed Solution(s)
	Discussions between PA DEP, WV DEP, and the DoD are ongoing regarding DoD lands leased to farmers—which represent a significant portion of DoD's agricultural lands—and cases of state-funded BMPs on these leased properties and whether those BMP credits would be attributed to either the states or federal agencies in this scenario.	

Supporting Information:

- PDF Document: List of BMPs Eligible for Load Sources Not Currently Assigned to Federal Agencies in Phase 6
- Table 1: Initial Estimates of Land Use Areas and Associated Nutrient and Sediment Loads for All Federal Agencies
- Table 2: Initial Estimates of Land Use Areas and Associated Nutrient and Sediment Loads for Each Federal Agency

Table 1: Initial Estimates of Land Use Areas and Associated Nutrient and Sediment Loads for All Federal Agencies

Description: This table presents the initial estimates of land use areas and associated total federal loads for nitrogen, phosphorus, and sediment loads, including both the no BMP scenario and the full WIP implementation scenario. The responsibility for addressing federal cropland and pasture loads, which constitute the bulk of the acres and an even higher percentage of loads, is fully accounted for in CAST, but currently the responsibility is only on the states to report. Moreover, loads from construction and harvested forest on federal lands are not currently accounted for in CAST. This table underpins the purpose of bringing up this issue, to ensure continuity between the states and federal agencies (federal agencies assuming responsibility for cropland and pasture), as well as accuracy (federal agencies assuming responsibility for construction and harvested forest). In addition, this table demonstrates that federal agencies are missing out on credit (difference between BMP (WIP) and no BMP loads).

	Land Use Acres (annual average 2014-2022)	No BMP Annual Nitrogen Loads (lbs/year)	No BMP Annual Phosphorus Loads (lbs/year)	No BMP Annual Sediment Loads (lbs/year)

	Construction	Harvested Forest	Cropland	Pasture	Construction	Harvested Forest	Cropland	Pasture	Construction	Harvested Forest	Cropland	Pasture	Construction	Harvested Forest	Cropland	Pasture
Total FED Load	2,178	2,288	20,920	38,907	47,177	25,381	892,124	604,543	7,634	510	25,962	52,398	17,478,238	839,337	35,497,082	12,010,040

	Land Use Acres (annual average 2014-2022)				WIP Annual Nitrogen Loads (lbs/year)				WIP Annual Phosphorus Loads (lbs/year)				WIP Annual Sediment Loads (lbs/year)			
	Construction	Harvested Forest	Cropland	Pasture	Construction	Harvested Forest	Cropland	Pasture	Construction	Harvested Forest	Cropland	Pasture	Construction	Harvested Forest	Cropland	Pasture
Total FED Load	2,178	2,288	20,920	38,907	42,224	18,010	521,301	400,526	7,634	325	10,714	30,677	5,089,604	571,311	14,294,091	4,585,493

Table 2: Initial Estimates of Land Use Areas and Associated Nutrient and Sediment Loads for Each Federal Agency

Description: As an addition to Table 1, this table presents the initial estimates of land use areas and associated nitrogen, phosphorus, and sediment loads for each federal agency, including both the no BMP scenario and the full WIP implementation scenario.

	Land Use Acres (annual average 2014-2022)				No BMP Annual Loads (lbs/year)			WIP Annual Loads (lbs/year)		
FED Agency	Construction	Harvested Forest	Cropland	Pasture	Nitrogen	Phosphorus	Sediment	Nitrogen	Phosphorus	Sediment
ARS	2	2	1,511	752	76,177	2,896	2,813,154	45,444	1,375	1,126,274
DOD	1,025	984	7,596	7,802	478,262	23,745	23,880,310	297,207	13,855	8,749,592
FWS	244	51	2,556	904	128,932	5,258	6,596,684	78,154	2,906	2,437,149
GSA	10	4	-	10	417	50	86,029	330	45	25,895
NASA	4	1	5	14	523	38	43,681	350	27	14,241
NPS	491	292	7,616	16,128	589,226	32,957	21,946,933	367,609	18,418	8,324,268

OTHER	**55**	**25**	**96**	**1,119**	**22,954**	**1,826**	**962,295**	**15,182**	**1,134**	**333,242**
SI	**1**	**11**	**56**	**469**	**9,804**	**706**	**250,050**	**6,321**	**403**	**98,061**
USACE	**39**	**204**	**1,052**	**2,710**	**90,101**	**5,138**	**3,008,587**	**56,486**	**2,844**	**1,180,130**
USFS	**247**	**713**	**433**	**8,998**	**171,526**	**13,679**	**5,753,982**	**113,812**	**8,302**	**2,111,002**

If you have any questions or concerns, please contact:

- Peter Claggett, USGS (pclagget@chesapeakebay.net)
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