

SECTION 8. WATERSHED IMPLEMENTATION PLAN EVALUATION AND RESULTANT ALLOCATIONS

This section describes the process by which EPA established final basinwide and basin-jurisdiction allocations to replace the target allocations described in Section 6. This section specifically describes the methodology that EPA used to evaluate the jurisdictions' final Phase I WIPs, the results of EPA's evaluation of the final Phase I WIPs, the process EPA used to develop the final allocations, and the resultant final allocations. Segment-specific and sector-specific allocations are provided in Section 9. Links to each jurisdiction's final Phase I WIP are at www.epa.gov/chesapeakebaytmdl.

The overall process of developing the Chesapeake Bay TMDL had four steps:

1. EPA defined 19 major river basin and jurisdictional target allocations, which EPA communicated to the jurisdictions on July 1, 2010 (for nitrogen and phosphorus) and August 13, 2010 (for sediment). The methodology that EPA used in setting these target allocations is described in detail in Section 6.
2. Each jurisdiction developed a Phase I WIP that described how it would achieve the target allocations for nitrogen, phosphorus, and sediment that were assigned in Step 1.
 - a. Using data submitted by the jurisdictions as input decks, or spreadsheets that EPA processed through Chesapeake Bay Program's Scenario Builder and the Phase 5.3 Chesapeake Bay Watershed Model, each jurisdiction developed suballocations to assign to individual, significant wastewater treatment plant (WWTP) point sources; aggregate nonsignificant WWTPs, urban stormwater, and CAFO point sources; and nonpoint source sectors draining to each of the 92 segments of the Chesapeake Bay and its tidal tributaries.
 - b. Each jurisdiction also developed implementation strategies to achieve the suballocations, as EPA requested in its letters of September 11, 2008, November 4, 2009, and December 29, 2009, as well as the *Guide for EPA's Evaluation of Phase I Watershed Implementation Plans* issued April 2, 2010. Those expectations are further described in Section 7.
 - c. The jurisdiction's proposed suballocations and implementation strategies formed the basis of its final Phase I WIP, which the jurisdiction delivered to EPA on November 29, 2010 (December 3, 2010, for Maryland; December 17, 2010, for New York; Pennsylvania amended December 23, 2010).
3. EPA evaluated each jurisdiction's proposed suballocations and implementation strategies in its final Phase I WIP to determine whether the WIP met the jurisdiction-wide and major river basin allocations, included adequate detail to ensure that NPDES permits will be developed that are consistent with the assumptions and requirements of the WLAs, and met EPA's expectations of providing reasonable assurance that nonpoint source reductions would be achieved and maintained through credible and enforceable or otherwise binding strategies in jurisdictions that are signatories to the Chesapeake Bay Agreement, and

similarly effective strategies in non-signatory jurisdictions. That evaluation and its results are described in detail here in Section 8.

4. On the basis of the results of EPA's evaluation of all seven Bay jurisdictions' final Phase I WIPs and refinements EPA made thereto, and supplemented by more than 14,000 comments from the public during a formal public review of the draft TMDL, EPA established an allocation scenario for the final Chesapeake Bay TMDL. This allocation scenario includes allocations at the jurisdiction-wide and basin-wide levels, as well as allocations for each of the 92 Bay segments. Tables showing the segment-specific and sector-specific allocations of the Chesapeake Bay TMDL are in Section 9.

EPA is establishing in this Chesapeake Bay TMDL final allocations that are based on the jurisdictions' final Phase I WIPs wherever possible and supplemented by public comments. Overall, the final Phase I WIPs were significantly improved from the draft Phase I WIPs, with most jurisdictions meeting their target allocations and meeting EPA's expectations of reasonable assurance that those target allocations would be met. These improved Phase I WIPs are a direct result of the cooperative work and leadership by the jurisdictions, each of which worked closely with EPA over the past few months to strengthen its WIP. As a result of these improvements in the jurisdictions' final Phase I WIPs, EPA significantly reduced the backstop allocations that had been proposed in the draft TMDL for most of the jurisdictions, and, in some cases, completely removed the backstops. As explained in detail in Section 8.4 below, only New York, Pennsylvania, and West Virginia received allocations that differed from those proposed in their final Phase I WIPs.

Six of the seven jurisdictions met their jurisdiction-wide target allocations for nitrogen, phosphorus, and sediment. In the one jurisdiction that did not fully meet its target allocations (New York), the final TMDL established a backstop allocation in the form of additional reductions from wastewater treatment loads beyond those proposed by New York in its final Phase I WIP to meet the jurisdiction-wide and basinwide TMDL allocations.

In addition, five of the seven jurisdictions met EPA's expectations of reasonable assurance in their final Phase I WIPs that they would achieve the load reductions proposed in their final Phase I WIPs. In jurisdictions that did not meet EPA's expectations that the necessary reductions for a particular source sector would be achieved (Pennsylvania urban stormwater, West Virginia agriculture), the final TMDL established backstop adjustments to the sector allocations that shifted a portion of the proposed LA to the WLA in that particular sector. This allocation adjustment recognizes the jurisdictions' already substantial pollutant reduction commitments and signals that future regulatory and/or permitting actions may need to be implemented to achieve the necessary load reductions. This allocation adjustment also provides an additional measure of reasonable assurance that these reductions will be achieved, yet does so in a manner that affords the jurisdictions an appropriate measure of flexibility to decide exactly how the final allocations will be achieved.

EPA will track progress and take any additional federal actions that are necessary to ensure that these reductions are achieved and maintained. To further ensure that the Bay TMDL is supported by reasonable assurance, EPA is committing to enhanced oversight actions in those jurisdictions whose final Phase I WIP did not fully meet EPA's expectations. As a result of this enhanced oversight, EPA will evaluate, on an ongoing basis, the need for appropriate future

backstop actions and is committed to taking actions consistent with its December 29, 2009, letter as necessary; such necessity may be demonstrated if, for example, the jurisdictions do not demonstrate sufficient progress in the wastewater, urban stormwater, or agriculture sectors in their Phase II WIPs (USEPA 2010d). EPA also is committed to maintaining its ongoing oversight in all seven of the Chesapeake Bay jurisdictions as authorized under the CWA, and, in conjunction with its accountability and tracking system and the series of two-year milestones, is committed to taking additional appropriate federal action consistent with its December 29, 2009, letter to ensure that the jurisdictions successfully implement their TMDL allocations and final Phase I WIPs.

8.1 WIP EVALUATION METHODOLOGY

A team of EPA source sector experts, together with the EPA staff assigned to each of the seven watershed jurisdictions, conducted a rigorous, systematic quantitative and qualitative evaluation of each jurisdiction's final Phase I WIP and accompanying input deck. EPA evaluated each final Phase I WIP on the basis of how well the jurisdiction's final Phase I WIP was designed to achieve WQS and meet the TMDL's target allocations. EPA evaluated the final Phase I WIP in light of the expectations articulated in EPA's November 4, 2009 letter and April 2, 2010, *Guide for Evaluation of Phase I Watershed Implementation Plans* (USEPA 2009c, 2010e). EPA also considered whether the jurisdiction addressed key areas for improvement that EPA identified as a result of its review of the jurisdiction's draft Phase I WIP.

In conducting the evaluations, EPA addressed two primary questions:

(1) Whether the jurisdiction met its target allocations for nitrogen, phosphorus, and sediment—both jurisdiction-wide and in each of the major river basins—to ensure attainment of each of the Chesapeake Bay WQS in all 92 segments of the Bay and its tidal tributaries; and

(2) Whether the jurisdiction met EPA's expectations for reasonable assurance that it would implement the necessary nitrogen, phosphorus, and sediment reductions, including documentation that nonpoint source controls would be achieved and maintained and permitting programs would result in point source reductions, with emphasis on having practices in place by 2017 to achieve at least 60 percent of the necessary reductions as compared to 2009 loads.

8.1.1 Quantitative Evaluation of the Final Phase I WIPs

To evaluate the first (quantitative) question and determine whether a jurisdiction met each of its nitrogen and phosphorus target allocations, EPA processed the jurisdiction's input deck by running it through Scenario Builder and the Chesapeake Bay Watershed Model, assuming that other jurisdictions met their target allocations. If the jurisdiction's WIP exceeded any of the target allocations, EPA considered the degree to which it did so and whether adjusting nitrogen and phosphorus allocations using approved ratios as discussed in Section 6 would decrease the exceedances.

EPA determined each jurisdiction's allocation for sediment on the basis of whether and to what extent the jurisdiction met the target allocation range for sediment provided on August 13, 2010 and any modifications that EPA approved as still meeting applicable WQS. EPA ran the BMPs

assumed within the nitrogen and phosphorus backstop allocations through Scenario Builder and the Chesapeake Bay Program Watershed Model. EPA then compared the sediment outputs from that scenario run to the target allocation range for sediment that it communicated to the jurisdictions. Where the reductions proposed in a jurisdiction's WIP surpassed what was needed to meet the target allocation (i.e., came in under the low end of the target range), EPA assigned that jurisdiction the low end of the target allocation range. Where the reductions proposed in a jurisdiction's WIP were insufficient to meet its target allocation (i.e., came in above the high end of the target range), EPA assigned that jurisdiction the high end of the target allocation range. Where a jurisdiction met its target allocation (i.e., fell within the target range), EPA assigned that jurisdiction the allocation that resulted from the practices proposed in its final Phase I WIP.

8.1.2 Qualitative Evaluation of the Final Phase I WIPs

To evaluate the second (qualitative) question and determine whether a jurisdiction met EPA's expectations for reasonable assurance through enforceable or otherwise binding commitments or similarly effective strategies to implement necessary controls, EPA evaluated each major pollutant source sector (agriculture, urban stormwater, and wastewater) on a number of criteria, including those factors set out in the April 2, 2010, *Guide for Evaluation of Phase I Watershed Implementation Plans* (USEPA 2010e). EPA determined that a jurisdiction met EPA's expectations for reasonable assurance if it provided, among other things: a schedule for potential actions, evidence of or commitment to clear permit conditions, a discussion of compliance, no major discrepancies between the type and extent of practices in the WIP narrative and the input deck, contingencies for high risk or highly improbable actions, and proposals for obtaining additional resources. .

After evaluating the two key questions, EPA conducted a jurisdiction-by-jurisdiction analysis to determine whether and, if so, to what degree, to backstop or adjust the allocations proposed by the jurisdiction in its final Phase I WIP. In developing the adjusted or backstop allocations, EPA fully considered the following:

- Whether a jurisdiction met, or to what degree it missed, its target allocations for nitrogen, phosphorus, and sediment.
- Whether and to what extent the jurisdiction met EPA's expectations for reasonable assurance.
- Whether the proposed WLAs in the jurisdiction's final Phase I WIP were consistent with EPA's definition of point source loads and could be achieved through implementation of a permitting program.
- Whether, if necessary, EPA could ensure achievement of the point source reductions through appropriate federal actions under the CWA and other federal authorities, including enhanced program oversight, permit objections, compliance assurance, enforcement actions, and other federal actions as described in EPA's December 29, 2009 letter.

Where EPA determined that a jurisdiction did not meet its target allocations, EPA applied a *backstop allocation*—a change to the allocation to close the numeric gap, such as assigning the jurisdiction a more stringent WWTP allocation reflecting an assumption that future WWTP

effluent limits for nitrogen and/or phosphorus would be made more stringent to meet the TMDL's overall allocation for that jurisdiction.

Where EPA determined that a jurisdiction met its allocation target but did not meet EPA's expectations for reasonable assurance, EPA applied a *backstop adjustment* or *allocation adjustment*—a change to a sector-specific allocation to provide additional assurance that the allocation would be achieved, such as shifting some of a specific sector's loadings from the LA category to the WLA category. This signaled that, depending on the success of the jurisdiction's WIP implementation and the nature of the choices the jurisdiction makes in adapting its implementation strategies, additional future regulatory controls may have to be applied to sources in that sector to attain the sector's overall allocation.

If EPA had determined that a jurisdiction neither met its target allocation nor met EPA's expectations for reasonable assurance, EPA would have applied both backstops.

After applying all backstops that EPA determined were necessary, EPA ran the combination of specific practices and allocations through the Chesapeake Bay Program's Scenario Builder and the Phase 5.3 Chesapeake Bay Watershed Model to ensure that the allocations provided in the final Chesapeake Bay TMDL would result in the attainment of WQS.

8.2 WIP EVALUATION RESULTS

Overall, the jurisdictions submitted significantly-improved final Phase I WIPs; most jurisdictions met each of their target allocations jurisdiction-wide and met EPA's expectations for reasonable assurance that they would meet those target allocations. Six of the seven jurisdictions met or came very close to their jurisdiction-wide target allocations for nitrogen, phosphorus, and sediment—only New York did not meet each of its jurisdiction-wide target allocations. In addition, five of the seven jurisdictions met EPA's expectations for reasonable assurance in their final Phase I WIPs that they would achieve the load reductions proposed in their WIPs. Only Pennsylvania urban stormwater and West Virginia agriculture did not meet EPA's expectations for providing reasonable assurance that the sector-specific target allocations would be achieved. These are significant improvements from the draft Phase I WIPs, where six of the seven draft WIPs did not meet their jurisdiction-wide target allocations for all three pollutants and none of the seven draft WIPs fully met EPA's expectations for reasonable assurance that they would meet their respective target allocations.

8.2.1 Target Allocation Attainment

Each jurisdiction's final Phase I WIP, with the exception of New York, met its jurisdiction-wide nitrogen, phosphorus, and sediment target allocations. EPA established backstop allocations for WWTP allocations in New York to close the numeric gap between New York's final Phase I WIP and its target allocations.

The results of EPA's analysis of whether each jurisdiction met its jurisdiction-wide and basin-wide target allocations for each pollutant after allowing for any EPA-approved exchanges are shown in Tables 8-1 and 8-2, below. Table 8-1 shows whether and to what degree each jurisdiction met its jurisdiction-wide target allocations for nitrogen, phosphorus, and sediment.

Table 8-1. Comparison between nitrogen, phosphorus, and sediment jurisdiction-wide allocations and final Phase I Watershed Implementation Plans, in millions of pounds per year

	Total nitrogen (TN)			Total phosphorus (TP)			Total suspended solids (TSS)*			
	Target allocation	Final Phase I WIP	Final Phase I WIP % off target	Target allocation	Final Phase I WIP	Final Phase I WIP % off target	Target allocation - low	Target allocation - high	Final Phase I WIP	Final Phase I WIP % off target ^a
DC	2.32	2.32	0%	0.12	0.12	0%	10.14	11.16	11.16	0%
DE	2.95	2.86	-3%	0.26	0.23	-12%	57.82	63.61	42.89	-33%
MD^b	39.09 (39.09)	39.09	0%	2.72 (2.72)	2.72	0%	1,116.16	1,218.11 (1,227.78)	1,218.11	0%
NY^c	8.77 (8.23)	9.25	5%	0.57 (0.52)	0.57	2%	292.96	322.26	277.66	-14%
PA	73.93 (76.77)	75.56	2%	2.93 (2.74)	2.98	2%	1,902.51	2,092.76	1,979.65	-5%
VA^d	53.42 (53.40)	54.43	2%	5.36 (5.41)	5.48	2%	2,446.14	2,690.75	2,617.22	-3%
WV^e	5.45 (4.68)	5.45	0%	0.59 (0.75)	0.59	-1%	309.37 (240.68)	340.30 (264.75)	302.12	-11%
Total	185.93 (187.45)	188.96	2%	12.54 (12.52)	12.70	1%	6,135.10 (6066.42)	6,738.94 (6673.06)	6448.80	-4%

* As discussed in Section 6, the metric for sediment is Total Suspended Solids.

a. Calculated on the basis of the high end of the target sediment allocation range.

b. Maryland target allocations were modified to allow for exchanges of TN, TP, and TSS both within and across basins. Runs of the Chesapeake Bay Water Quality and Sediment Transport Model confirmed that these exchanges still attained applicable WQS. The original target allocations are in parentheses. The final allocations proposed in Maryland's final Phase I WIP are derived using the method outlined in Appendix A of Maryland's final Phase I WIP rather than an input deck that was run through the Chesapeake Bay Program Watershed Model.

c. New York's nitrogen and phosphorus target allocations were modified to provide New York with additional loads of TN (1,000,000 lbs) and TP (100,000 lbs) based on concerns with the equity of New York's July 1 target allocations (see Section 6.4.5). Target nitrogen and phosphorus allocations were further modified to allow for trading of TN and TP within state basins. The original target allocations are in parentheses.

d. Virginia target allocations were modified to allow for trading TN and TP within state basins. The original target allocations are in parentheses.

e. West Virginia Potomac basin target allocations for nitrogen and phosphorus were revised to allow for trading between TN and TP, and the sediment target allocation range was adjusted based on the 200,000 lb increase in the July 1st phosphorus allocation (see Section 6.4.5). The original target allocations are in parentheses.

f. Where input decks in West Virginia, Virginia, and Pennsylvania did not meet all target allocations, EPA and the jurisdiction came to an agreement on how to close the gap. See Section 8.4 for details regarding these agreements.

g. In New York, EPA closed the gap via an adjustment to nitrogen and phosphorus allocations using approved ratios as discussed in Section 6 and via a backstop allocation for the wastewater sector as described in Section 8.4.4.

Note: Any discrepancy is due to the rounding of figures.

Table 8-2. Comparison between the nitrogen, phosphorus, and sediment basin-jurisdiction allocations and final Phase I Watershed Implementation Plans, in million pounds per year

Major river basin	Jurisdiction	Total nitrogen (TN)			Total phosphorus (TP)			Total suspended solids (TSS)*			
		Target allocation	Final Phase I WIP	Final Phase I WIP % off target	Target ALLOCATION	Final Phase I WIP	Final Phase I WIP % off target	Target allocation - low end	Target allocation - high end	Final Phase I WIP	Final Phase I WIP % off target ^a
Potomac	DC	2.32	2.32	0%	0.12	0.12	0%	10.14	11.16	11.16	0%
Eastern Shore	DE	2.95	2.86	-3%	0.26	0.23	-12%	57.82	63.61	42.89	-33%
Eastern Shore	MD ^b	9.71	9.71	0%	1.02 (1.09)	1.02	0%	165.88	168.85 (182.47)	168.85	0%
Patuxent	MD ^b	2.86 (2.85)	2.86	0%	0.24 (0.21)	0.24	0%	81.93	106.30 (90.12)	106.30	0%
Potomac	MD ^b	16.38 (15.70)	16.38	0%	0.90	0.90	0%	653.61	680.29 (718.97)	680.29	0%
Susquehanna	MD ^b	1.09 (1.08)	1.09	0%	0.05	0.05	0%	59.85	62.84 (65.83)	62.84	0%
Western Shore	MD ^b	9.04 (9.74)	9.04	0%	0.51 (0.46)	0.51	0%	154.90	199.82 (170.38)	199.82	0%
Susquehanna	NY ^c	8.77 (8.23)	9.25	5%	0.57 (0.52)	0.57	2% ^g	292.96	322.26	277.66	-14%
Eastern Shore	PA	0.28	0.28	-1% ^g	0.01	0.01	-13% ^g	21.14	23.25	19.11	-18%
Potomac	PA	4.72	4.17	-12%	0.42	0.35	-17%	221.11	243.22	219.12	-10%
Susquehanna	PA	68.90 (71.74)	71.10	3%	2.49 (2.31)	2.62	5%	1659.89	1,825.88	1,741.17	-5%
Western Shore	PA	0.02	0.002	-92%	0.001	0.0002	-76%	0.37	0.41	0.26	-37%
Eastern Shore	VA ^d	1.31 (1.21)	1.35	3%	0.14 (0.16)	0.14	0%	10.91	12.00	11.31	-6%
James	VA ^d	23.09 (23.48)	23.09	0%	2.37 (2.34)	2.43	3%	836.57	920.23	948.49	3%
Potomac	VA ^d	17.77 (17.46)	18.24	3%	1.41 (1.47)	1.41	0%	810.07	891.08	829.53	-7%
Rappahannock	VA	5.84	6.15	5%	0.90	0.94	5%	681.49	749.64	700.04	-7%
York	VA	5.41	5.61	4%	0.54	0.56	4%	107.09	117.80	127.86	9%
James	WV	0.02 (0.02)	0.03	50%	0.01 (0.01)	0.01	18% ^g	15.13	16.65	29.35	76%

Major river basin	Jurisdiction	Total nitrogen (TN)			Total phosphorus (TP)			Total suspended solids (TSS)*			
		Target allocation	Final Phase I WIP	Final Phase I WIP % off target	Target ALLOCATION	Final Phase I WIP	Final Phase I WIP % off target	Target allocation - low end	Target allocation - high end	Final Phase I WIP	Final Phase I WIP % off target ^a
Potomac	WV ^e	5.43 (4.67)	5.43	0%	0.58 (0.74)	0.58	-1%	294.24 (225.55)	323.66 (248.11)	272.77	-16%
TOTAL	ALL	185.93 (187.45)	188.96	2%	12.55 (12.52)	12.70	1%	6,135.10 (6,066.42)	6,738.94 (6,673.06)	6,448.80	-4%

* As discussed in Section 6, the metric for sediment is Total Suspended Solids.

- Calculated on the basis of the high end of the target sediment allocation range.
- Maryland target allocations were modified to allow for exchanges of TN, TP, and TSS both within and across basins. Runs of the Chesapeake Bay Water Quality and Sediment Transport Model confirmed that these exchanges still attained applicable WQS. The original target allocations are in parentheses. The final allocations proposed in Maryland's final Phase I WIP are derived using the method outlined in Appendix A of Maryland's final Phase I WIP rather than an input deck that was run through the Chesapeake Bay Program Watershed Model.
- New York's nitrogen and phosphorus target allocations were modified to provide New York with additional loads of TN (1,000,000 lbs) and TP (100,000 lbs) based on concerns with the equity of New York's July 1 target allocations (see Section 6.4.5). Target nitrogen and phosphorus allocations were further modified to allow for trading of TN and TP within state basins. The original target allocations are in parentheses.
- Virginia target allocations were modified to allow for trading TN and TP within state basins. The original target allocations are in parentheses.
- West Virginia Potomac basin target allocations for nitrogen and phosphorus were revised to allow for trading between TN and TP, and the sediment target allocation range was adjusted based on the 200,000 lb increase in the July 1st phosphorus allocation (see Section 6.4.5). The original target allocations are in parentheses.
- Where input decks in West Virginia, Virginia, and Pennsylvania did not meet all target allocations, EPA and the jurisdiction came to an agreement on how to close the gap. See Section 8.4 for details regarding these agreements.
- In New York, EPA closed the gap via an adjustment to nitrogen and phosphorus allocations using approved ratios as discussed in Section 6 and via a backstop allocation for the wastewater sector as described in Section 8.4.4.

Note: Any discrepancy is due to the rounding of figures.

Table 8-2 shows whether and to what degree each jurisdiction met its basinwide target allocations for nitrogen, phosphorus, and sediment.

These tables show the initial target allocations communicated to the jurisdictions on July 1, 2010 (for nitrogen and phosphorus) and August 13, 2010 (for sediment), which are in parentheses. These tables also show the jurisdictions' adjusted target allocations, which incorporate corrections to allocations for some of the headwater jurisdictions, backstop allocations and adjustments made by EPA, and intra-basin and inter-basin nutrient exchanges requested by the some of the jurisdictions. The combination of these corrections, backstop allocations and adjustments, and nutrient exchanges resulted in all jurisdictions meeting their nitrogen, phosphorus, and sediment target allocations. Further specific information about the corrections, backstop allocations and adjustments, and nutrient exchanges is provided in the footnotes to the tables.

8.2.2 Reasonable Assurance

EPA determined that each of the jurisdictions' final Phase I WIPs provided reasonable assurance that met EPA's expectations in each major source sector, with the exception of Pennsylvania urban stormwater and West Virginia agriculture. The jurisdictions' final Phase I WIPs showed many noteworthy improvements regarding reasonable assurance, including the following:

- Commitments to upgrade WWTPs
- Expanded septic system improvements
- Increased accountability for urban stormwater programs
- New enforcement and compliance initiatives for agriculture
- Agreements to extend regulatory coverage for traditional nonpoint sources if needed

Overall, these are significant improvements from the jurisdictions' draft Phase I WIPs, none of which provided reasonable assurance that fully met EPA's expectations.

EPA determined that various levels of EPA oversight and additional potential actions are appropriate for the various jurisdictions as a result of EPA's evaluation of both key aspects of the jurisdictions' final Phase I WIPs as discussed above. All seven jurisdictions will receive an ongoing level of oversight for all sectors that may justify federal actions to address shortfalls. In addition to that ongoing oversight, New York, Pennsylvania, Virginia, and West Virginia will receive an enhanced level of oversight and potential federal actions for certain sectors. Lastly, in addition to those levels of oversight and potential federal actions, New York, Pennsylvania, and West Virginia received in the final TMDL backstop allocations (New York) or backstop adjustments (Pennsylvania urban stormwater and West Virginia agriculture). Further details regarding EPA's assessment of the reasonable assurance provided by each jurisdiction's final Phase I WIP are provided in Section 8.4 below.

8.3 ALLOCATION METHODOLOGY

EPA determined each jurisdiction's wasteload and load allocations on the basis of whether the jurisdiction met each of its respective target allocations and whether it met EPA's expectations for reasonable assurance that those allocations would be achieved. EPA relied on the portion(s)

of the jurisdiction's final Phase I WIP that met expectations and supplemented any gaps in the allocations and reasonable assurance with allocation adjustments and determinations of reasonable assurance to achieve the necessary reductions.

8.3.1 Backstop Allocation Methodology

EPA established backstop allocations where EPA determined that the final Phase I WIP did not achieve the jurisdiction's basin target allocation for one or more pollutants or where the final Phase I WIP did not meet EPA's expectations for reasonable assurance that the LA reductions would be achieved by the nonpoint sources.

Another enhanced action that EPA took in the nontidal jurisdictions of Pennsylvania and West Virginia was to establish finer-scale individual allocations or aggregate allocations. EPA stated in its November 4 and December 29, 2009, letters to the jurisdictions that it might do so by establishing individual source and aggregate source sector, rather than gross basin-jurisdiction, WLAs and LAs for the nontidal jurisdictions if their Phase I WIPs did not meet EPA's expectations for reasonable assurance (USEPA 2009c, 2009d). With the exception of WWTPs in New York and the James River in Virginia, EPA is establishing individual WLAs for the significant municipal and industrial wastewater discharging facilities and sector-specific aggregate WLAs for urban stormwater, CAFOs, and nonsignificant municipal and industrial wastewater discharging facilities. EPA is establishing the finer-scale allocations to better inform permit writers as they issue and renew NPDES permits consistent with the assumptions and requirements of the Chesapeake Bay TMDL WLAs. Those allocations for the nontidal jurisdictions are at the same scale as those made to the tidal jurisdictions of Delaware, Maryland, Virginia, and the District of Columbia.

As explained more fully in Appendix X, EPA is issuing with this final TMDL an aggregate WLA for the significant facilities in the Virginia portion of the James River basin. EPA also is establishing an aggregate WLA for WWTPs in New York to allow time for the New York State Department of Environmental Conservation to review engineering reports from WWTPs and determine the load reductions expected from each facility. New York has committed to provide information to support individual WLAs for these WWTPs in its Phase II WIPs. EPA understands that New York plans to renew and/or modify WWTP permits after completing its Phase II WIPs, consistent with the applicable TMDL allocations at that time.

8.3.2 Backstop Adjustment (Allocation Shift) Methodology

After evaluating the final Phase I WIPs for reasonable assurance, EPA found that the final Phase I WIPs did not fully meet EPA's expectations for reasonable assurance for the urban stormwater sector in Pennsylvania and the agriculture sector in West Virginia. As a result, EPA applied a backstop adjustment to those sectors by shifting a portion of the allocations for those sectors from the LA to the WLA for the respective jurisdiction.

For Pennsylvania urban stormwater, as detailed in Section 8.4.5 below, EPA shifted to the WLA 50 percent of the loading from currently unregulated urban stormwater sources that the WIP included in the LA. Therefore, the Pennsylvania urban stormwater WLAs include both unregulated and NPDES regulated sources. For urban stormwater sources already covered by

NPDES permits, EPA has broad authority to ensure that the necessary controls are included to implement the Bay TMDL.

For West Virginia agriculture, as detailed in Section 8.4.7 below, EPA shifted to the WLA 75 percent of currently unregulated AFOs that the WIP included in the LA. The same rationale described above also applies to EPA's adjustment of allocations in the AFO/CAFO sector. For those CAFO facilities already under NPDES permit coverage, EPA has broad authority to ensure that the necessary controls are included to implement the Bay TMDL.

For both AFOs and urban stormwater point sources, the allocation shift signals that substantially more of these discharges and operations could potentially be subject to NPDES permits as necessary to protect water quality. These conditions could include additional nitrogen, phosphorus, and sediment controls. These sources would only be subject to NPDES permits as issued by the delegated permitting authority or EPA upon designation. It is important to note, however, that EPA may also pursue designation activities based upon considerations other than TMDL and WIP implementation.

EPA has adjusted these allocations on the basis of two assumptions: (1) a percentage of loading from currently unregulated sources may have to be controlled under the NPDES permit program through appropriate designation, rulemaking, and permit issuances; and (2) the aggregate projected load reductions under the adjusted WLA (based on assumed NPDES effluent controls consistent with the WLA) will result in reductions sufficient to meet the jurisdiction's allocations.

In establishing allocations that shift from the LA to the WLA some urban stormwater and AFO/CAFO sources not currently regulated by the NPDES permit program but that could become NPDES-regulated facilities either through residual designation authority or other mechanisms, EPA has acted consistent with EPA guidance, *Establishing Total Maximum Daily Loads (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs*, dated November 22, 2002 (USEPA 2002a) and as revised November 12, 2010. EPA has authority to designate certain nonregulated urban stormwater sources for regulation under the NPDES program. See section 402(p)(2)(E) and (6) and 40 CFR 122.26(a)(9)(i)(C)(D). EPA also has authority to designate AFOs as CAFOs as set forth in 40 CFR 122.23(c).

The inclusion of currently unregulated sources in the WLA does not, by itself, constitute a designation or regulatory action to include such sources in the NPDES program; the source would have to be designated for the source to come under the NPDES program, and the shift in allocations in this TMDL is not an exercise of that designation authority. Instead, it reflects the possibility that such designation may be necessary in the future if the jurisdictions do not otherwise achieve their allocation targets. The TMDL is a watershed pollution budget, not a regulatory determination to change a source's legal status. As with any NPDES permitting or rulemaking decision, applying new controls or designations must be consistent with applicable procedural and substantive requirements, including a recognition of state permitting primacy in jurisdictions authorized to administer the NPDES program.

Furthermore, EPA's residual designation would not be intended to change the NPDES-permitting authorized agency. That is, if EPA were to residually designate an AFO as a CAFO in

an NPDES-delegated state, that CAFO would apply for a state CAFO permit, not a federal CAFO permit, as would any other state facility so long as EPA does not take over the permit or the permitting program.

Some jurisdictions, as described in the jurisdiction-specific subsections below, included in their final Phase I WIPs the shift of a portion or all of the loading of current AFO or urban stormwater facilities not currently regulated under the NPDES permit program from the LA to an aggregate WLA. Jurisdictions did this primarily to provide additional reasonable assurance that the implementation of practices and reductions in pollutants would occur. By doing this, the jurisdiction indicated that it is prepared to implement the necessary pollutant reductions in those sectors. Like EPA's backstop adjustment, the WIP's inclusion of currently unregulated sources in the WLA by itself does not constitute a designation or regulatory action to include such sources in the NPDES program. The jurisdiction's WIP informs the TMDL, which is a watershed plan, not a regulatory determination to change a source's legal status. As with any NPDES permitting or rulemaking decision, applying new controls or designations must be consistent with applicable procedural and substantive requirements.

EPA believes these load-shifting allocation adjustments, whether done by the jurisdictions or by EPA, are a reasonable way of supplementing reasonable assurance that the allocation targets will be met. These allocations signal that EPA and the jurisdictions will be tracking load reductions in these sectors with a heightened degree of scrutiny and are prepared to take action to increase the extent to which these loads are regulated as necessary. EPA is committed to ensure and track implementation of actions necessary to reduce these sector loads by 2025 consistent with Executive Order 13508 (FLCCB 2010). Additional assurance that these adjusted sector allocations will be met is provided by the public commitments EPA has made in the Federal Strategy and elsewhere, including the May 2010 settlement agreement resolving the Chesapeake Bay Foundation lawsuit.

8.3.3 Assumptions Supporting the Allocations

EPA regulations require that NPDES permits be consistent with assumptions and requirements of WLAs. See 40 CFR 122.44(d)(1)(vii)(B). This section summarizes the assumptions that are incorporated into the Chesapeake Bay TMDL allocations.

EPA established WLAs and LAs based in part upon the overall assumption that certain nitrogen, phosphorus, and sediment controls are implemented on a certain percentage of available land. Over time, implementing nitrogen, phosphorus, and sediment controls could involve a combination of (a) different practices; (b) implementation in different locations; or (c) implementation at different implementation rates so long as an equivalent or greater reduction occurs within the portion of the watershed draining to a particular tidal segment of the Chesapeake Bay.

Appendix V includes the percent of available land or sources on which nitrogen, phosphorus, and sediment controls are implemented (percent implementation) that is assumed within the WLAs and LAs for sources other than WWTPs. The Appendix does not include a table for Maryland because final allocations proposed in Maryland's final Phase I WIP are derived using the method

outlined in Appendix A of Maryland's WIP rather than an input deck that was run through the Phase 5.3 Chesapeake Bay Watershed Model.

EPA will continue to track and assess the jurisdictions' annual progress toward meeting the commitments outlined in their respective final Phase I WIPs and 2-year milestone commitments. As outlined in its December 29, 2009, letter to the jurisdictions, EPA may take additional federal actions beyond those listed above as appropriate and consistent with applicable laws and regulations, including the following: conditioning federal grants; promulgating nutrient WQS; objecting to NPDES permits; and discounting pollutant reduction practices that do not meet EPA verification expectations to ensure that the jurisdictions achieve the nitrogen, phosphorus, and sediment reductions identified in their final Phase I WIPs and needed to meet the TMDL allocations (USEPA 2009d) (see Section 7.2.4). In correspondence directed individually to each jurisdiction providing detailed feedback on EPA's evaluation of the final Phase I WIPs (see Appendix B), EPA communicated its intent to consider taking additional federal actions as necessary if EPA determines that the respective jurisdiction's Phase II WIP and 2-year milestones do not meet EPA's expectations for providing reasonable assurance that implementation will occur as described in their plans.

Nonpoint Sources

The jurisdictions' final Phase I WIPs provided the starting point for EPA's consideration and development of final allocations. EPA assumed for purposes of its evaluation that jurisdictions would implement the practices that will result in the same or greater nitrogen, phosphorus, and sediment controls as provided in their final Phase I WIP scenario input decks and as evaluated by the Chesapeake Bay Scenario Builder and Watershed Model. In the few jurisdictions where final Phase I WIP input decks did not meet the target allocations for each major basin, EPA either applied a backstop allocation to close the numeric gap (New York) or reached agreement with the respective jurisdictions on further nonpoint source reductions to achieve allocations both statewide and in each basin (Pennsylvania, Virginia, West Virginia). Details regarding these backstop allocations and nonpoint source adjustments are provided in Section 8.4.

EPA will assess jurisdictions' progress toward meeting LAs through ongoing program oversight, the Phase II and Phase III WIPs, and the 2-year milestones. EPA also will consider whether to take appropriate federal actions, as detailed in its letter of December 29, 2009 to the jurisdictions, to ensure that adequate progress is made toward achieving and maintaining the nonpoint source load reductions.

Point Sources—Agriculture

In all jurisdictions, the CAFO WLA includes AFO production areas that are currently or potentially regulated under jurisdictions' CAFO programs. The CAFO WLA assumes that these production areas have 100 percent implementation of waste management, barnyard runoff control, and mortality composting practices and that such practices are required as conditions of CAFO permits. These practices are assumed to result in an approximately 80 percent decrease in nutrient loads from production areas compared to a pre-BMP condition. The draft TMDL assumed that all animals within the WLA receive feed management except cattle on small dairies not currently subject to CAFO permits. By comparison, the CAFO WLA in the final TMDL assumes feed management at rates and nutrient reduction levels proposed by the jurisdictions in

their final Phase I WIPs. Many of the final Phase I WIPs reflected higher rates of feed management than did the draft WIPs.

Jurisdictions can meet the WLA assumptions by (a) applying a different set of practices that are shown to result in equivalent nitrogen, phosphorus, and sediment reductions, or (b) applying a more aggressive performance standard on a smaller percentage of AFO production areas that will result in the nitrogen, phosphorus, and sediment reductions called for within the WLA.

Point Sources—Urban Stormwater

The Chesapeake Bay TMDL allocations for urban stormwater are based on load reductions proposed by jurisdictions in their final WIPs compared to a 2009 baseline. In the draft TMDL, EPA assumed additional urban stormwater retrofits in the five jurisdictions that received a proposed urban stormwater backstop allocation. In contrast, in the final TMDL, EPA is establishing a backstop adjustment for urban stormwater only in one jurisdiction—Pennsylvania. Further, EPA is not adjusting the urban stormwater load reductions that Pennsylvania proposed in its final Phase I WIP. Specifically, EPA is not assuming additional retrofits. Rather, EPA is establishing a backstop adjustment in Pennsylvania that shifts 50 percent of the unregulated urban stormwater load to the WLA.

Table 8-3 summarizes the per-acre, edge-of-stream nitrogen, phosphorus, and sediment percent reductions compared to 2009 based on urban stormwater WLAs by jurisdiction. EPA can also provide information by county to those jurisdictions that wish to use it in developing permits. NPDES permits issued to these jurisdictions and other regulatory mechanisms should achieve these reductions, over multiple permit cycles as necessary but by no later than 2025—the date by which the Chesapeake Executive Council has committed to have all practices in place necessary to meet water quality goals in the Bay. Jurisdictions have the option of interpreting these allocations as specific measurable requirements, e.g., performance standards or management practices, or of putting the allocations in permits and requiring MS4 operators to develop an implementation plan to achieve the allocation.

Table 8-3. Percent reductions in edge-of-stream loads to achieve urban stormwater WLAs

Jurisdiction	Per-acre edge-of-stream % changes in urban stormwater load from a 2009 baseline*		
	Nitrogen	Phosphorus	Sediment
District of Columbia	6.6%	29.6%	29.6%
Delaware	14.3%	18.3%	23.7%
Maryland**	16.9%	35.7%	37.5%
New York	11.4%	0.0%	0.0%
Pennsylvania	28.9%	17.7%	7.0%
Virginia	16.4%	20.8%	32.5%
West Virginia	0%	0%	0%

* Edge-of-stream reductions assumed within the urban stormwater WLAs result from differences in BMP implementation rates between 2009 and the final WIP submission.

** Maryland's assumed reductions are calculated as the difference between 2009 edge-of-stream loads and Maryland's final edge-of-stream target loads for urban stormwater WLAs. Maryland derived its final loads using the method outlined in Appendix A of Maryland's WIP.

Appendix V includes the percent implementation for nitrogen, phosphorus, and sediment controls that are assumed on urban land uses in 2009 and as proposed in the final Phase I WIP input decks. With the exception of Maryland, edge-of-stream reductions assumed within urban stormwater WLAs are the direct result of the differences in implementation rates between 2009 and the final Phase I WIP submission. However, jurisdictions can meet the WLAs by (a) applying a different set of practices or performance standards that would result in equivalent nitrogen, phosphorus, and sediment reductions, or (b) applying a more aggressive suite of practices or performance standards to a smaller percentage of urban lands or urban stormwater discharges, so long as the total nitrogen, phosphorus, and sediment reduction from urban discharges within the WLA are equal to or greater than the reductions assumed within Table 8-3.

Point Sources—Wastewater

Federal regulations require that water quality based effluent limits in permits ensure (a) attainment of applicable WQS; and (b) consistency with assumptions and requirements of the TMDL WLAs [40 CFR 122.44(d)(1)(vii)(B)]. Therefore, permits are written with effluent limits necessary to meet applicable WQS and/or consistent with the assumptions and requirements of applicable WLAs. Where authorized and appropriate, such effluent limits may contain a compliance schedule that requires compliance as soon as possible. In the instances where implementation of the final TMDL WLAs for wastewater facilities is staged (e.g., in the James River), permits are written with effluent limits necessary to meet applicable WQS and/or consistent with the assumptions and requirements of applicable WLAs. In those instances as well, where authorized and appropriate, such effluent limits may contain a compliance schedule that requires compliance as soon as possible. The TMDL assumes that all controls will be in place to meet WLAs by 2025. Therefore, any facilities with compliance schedules longer than one year must include interim dates and milestones in their permit fact sheets with the time between milestones not more than one year [40 CFR 122.47(a)(3)].

The WLAs for WWTPs are based on the loads summarized in Table 9-4 for the significant WWTPs in the Chesapeake Bay watershed. Additional information on edge-of-stream discharges from these facilities is provided in Appendices Q and R.

Appendices Q and R also include the WLAs and information on edge-of-stream discharges for facilities that have been aggregated in the final TMDL. For facilities with discharges that are part of an aggregate WLA or are covered by a general permit, the TMDL assumes that the permit contains language to require the establishment of individual schedules for each facility to come into compliance with their individual or aggregate WLAs. Also, for facilities included within an aggregate WLA, the TMDL assumes that permitting authorities will provide justification in the permit fact sheet that the limits assigned to the individual facility are included as part of the aggregate TMDL WLAs. Due to lack of specific information, some nonsignificant discharges covered under an aggregate WLA may be based on default assumptions regarding flow and concentrations. These facilities should provide, at a minimum, nitrogen, phosphorus, and/or TSS monitoring data with their next NPDES permit renewal application. Renewed NPDES permits for these discharges will require monitoring to verify existing loads and to either (1) verify that these loads do not contribute to any exceedance of the WLAs—individual or aggregate (determination of no reasonable potential to contribute to an exceedance of local WQS and/or Bay TMDL WLA); or (2) incorporate an effluent limit consistent with the local WQS and/or Bay

TMDL WLA (where monitoring data shows reasonable potential to contribute to an exceedance of local WQS and/or Bay TMDL WLA).

Table 8-4. EPA backstop allocations, adjustments, and actions based on assessment of final Phase I WIPs

		No Backstop Allocation		Backstop Allocations, Adjustments, and/or Actions	
		Ongoing Oversight and Actions	Enhanced Oversight and Actions	Backstop Adjustments and Actions	Backstop Allocations and Actions
DC	Stormwater				
	Wastewater				
DE	Agriculture				
	Stormwater				
	Wastewater				
MD	Agriculture				
	Stormwater				
	Wastewater				
NY	Agriculture				
	Stormwater				
	Wastewater				Reduce wastewater WLA to meet statewide allocation
PA	Agriculture		Possible future backstop adjustments		
	Stormwater			Shift 50% stormwater from LA to WLA	
	Wastewater		Individual allocations; Possible future backstop allocations		
VA	Agriculture				
	Stormwater		Possible future backstop adjustments		
	Wastewater				
WV	Agriculture			Shift 75% AFOs from LA to WLA	
	Stormwater		Possible future backstop adjustments		
	Wastewater		Individual allocations; Possible future backstop allocations		

8.4 ALLOCATIONS BY JURISDICTION

On the basis of EPA's evaluations of the three major pollution source sectors combined with EPA's evaluations of whether the jurisdictions met their respective nitrogen, phosphorus, and sediment target allocations as illustrated in Tables 8-1 and 8-2, EPA assigned final allocations according to the assumptions detailed below for each of the seven watershed jurisdictions. Because EPA determined that many of the jurisdictions' final Phase I WIPs met all target allocations and/or met EPA's expectations for reasonable assurance, EPA reduced or eliminated many of the backstop allocations that it had included for those jurisdictions in the September 24, 2010, draft Chesapeake Bay TMDL, where warranted. The allocations for each jurisdiction, and the assumptions and rationale underlying those allocations, are described below.

8.4.1 Delaware

Delaware developed a final Phase I WIP input deck with nitrogen, phosphorus, and sediment controls that achieved jurisdiction-wide allocations when run through the Watershed Model. Delaware's final Phase I WIP also met EPA's expectations for reasonable assurance. As a result, EPA based Delaware's final allocations entirely on Delaware's final Phase I WIP. Delaware's final Phase I WIP shifts the urban stormwater load into the WLA, provides stronger agricultural contingencies to enhance reasonable assurance that reduction targets will be met, and improves WWTP performance levels to meet nitrogen allocations.

Delaware Allocations

Delaware meets its nitrogen, phosphorus, and sediment allocations in the final TMDL, based on EPA's quantitative and qualitative evaluation of Delaware's final Phase I WIP. Delaware's WIP input deck resulted in jurisdiction-wide loads that are 3 percent under nitrogen, 12 percent under phosphorus, and 33 percent under sediment target allocations. Delaware has agreed to apply the spare pounds back to the nonpoint source agriculture allocation and to refine the implementation measures in its Phase II WIP. Delaware's Bay TMDL jurisdiction-wide allocations are nitrogen 2.95 million pounds per year (mpy); phosphorus 0.26 mpy; and sediment 57.82 mpy.

Delaware Agriculture

Delaware's final Phase I WIP showed significant improvements from its draft Phase I WIP in the agriculture sector, including a strong contingency that "Delaware commits to review and evaluate the pace and progress of agriculture BMP implementation at the end of 2013. If needed, Delaware will enact new policy measures and explore mandatory BMP compliance options in a timely manner to ensure that water quality commitments will be met." Delaware's final Phase I WIP also includes greater detail on funding coordination and the implementation of agriculture BMPs. These improvements bolster reasonable assurance that agriculture allocations will be met.

EPA will maintain ongoing oversight of Delaware's agriculture sector to ensure these allocations are achieved and maintained. Specifically, EPA will use its national review of CAFO State Technical Standards in 2011 and beyond as an opportunity to identify any deficiencies in the State Technical Standards for protecting water quality. Through its review of State Technical Standards, EPA also will evaluate whether Delaware's phosphorus management program is sufficient to address phosphorus imbalances and water quality concerns. If deficiencies are

identified that are not addressed or the permit does not include other conditions to achieve nitrogen and phosphorus reductions identified in the WIP, EPA may object to permits on the basis that they are not protective of water quality.

Delaware Urban Stormwater

Delaware's final Phase I WIP also showed significant improvements in the urban stormwater sector. The WIP used BMPs that address both urban stormwater quality and quantity. The WIP also describes proposed regulatory revisions that, once adopted, will require redevelopment to reduce effective imperviousness by 50 percent and will increase required treatment volume for new development to the level of annualized runoff from the 1-year frequency storm event (about 2.7 inches of rainfall). The initial goal of these regulatory provisions would be to use runoff reduction practices so that effective imperviousness is 0 percent. Delaware's final Phase I WIP further provided detailed strategies to restrict turfgrass fertilizer and documented a variety of funding sources to implement proposed strategies.

As in the draft Phase I WIP, Delaware has shifted the entire urban stormwater load into the WLA. This shift enhances reasonable assurance that nitrogen, phosphorus, and sediment allocations from urban discharges will be achieved and maintained by signaling that many more discharges could potentially be subject to NPDES permits as necessary to protect water quality.

EPA will maintain ongoing oversight of Delaware's urban stormwater sector. In particular, EPA will monitor Delaware's progress in revising its urban stormwater regulations for new development and redevelopment to be consistent with the final Phase I WIP commitments. EPA also will monitor Delaware's efforts to develop a system for tracking inspections and compliance information. Finally, EPA will review the timeline and content of proposed regulations to limit turfgrass fertilizer use and the application of regulatory tools as a contingency should voluntary programs not result in fertilizer reductions on 95 percent of available urban lands.

Delaware Wastewater

Delaware's final Phase I WIP showed key improvements in the wastewater sector. Most notably, Delaware lowered effluent limits at 3 significant WWTPs to 4 mg/L TN at design flow to meet the nitrogen allocations and committed to hire additional staff for the on-site treatment systems and WWTP programs to manage permits consistent with the Chesapeake Bay TMDL. Delaware also confirmed that all nonsignificant WWTPs are included within the WLA.

EPA will maintain ongoing oversight of Delaware's wastewater program to ensure that the actions detailed in the final Phase I WIP occur and achieve the expected pollutant reductions. EPA also will review NPDES permit conditions to ensure that they are consistent with the assumptions and requirements of the Bay TMDL WLAs.

Delaware Conclusion

EPA applauds Delaware for its improvements in its Phase I WIP. The TMDL allocations in Delaware are based solely on the final Phase I WIP because Delaware met its target allocations and met EPA's expectations for providing reasonable assurance by identifying practices and implementation strategies to attain applicable WQS. EPA will assess progress through ongoing permit and program oversight and 2-year milestones, and believes that Delaware will succeed.

Although EPA does not anticipate that additional federal actions will be necessary, EPA is prepared to object to permits, target enforcement, condition grants, or adopt other federal actions as detailed in its December 29, 2010 letter, as necessary and appropriate, to support Delaware's ambitious restoration commitment.

8.4.2 District of Columbia

The District of Columbia developed a final Phase I WIP that met the interim allocation target of achieving a 60 percent reduction by 2017, and that met the nitrogen, phosphorus, and sediment target allocations by 2025. The District's final Phase I WIP also met EPA's expectations for providing reasonable assurance that those target allocations would be met, although it is contingent in part upon the issuance of a final MS4 permit with performance standards for new development, redevelopment, and retrofits that are similar to those included in the draft permit issued earlier in 2010. As a result, EPA based the District's final allocations entirely on the District's final Phase I WIP.

District of Columbia Allocations

The District of Columbia meets its nitrogen, phosphorus, and sediment allocations in the final TMDL, based on EPA's quantitative and qualitative evaluation of the District's final Phase I WIP. The District's input deck resulted in loads that are 0 percent over for nitrogen, phosphorus and sediment allocations. The District of Columbia's Bay TMDL jurisdiction-wide allocations are nitrogen 2.32 mpy; phosphorus 0.12 mpy; and sediment 11.16 mpy.

District of Columbia Urban Stormwater

The District of Columbia's final Phase I WIP showed significant improvements in urban stormwater from its draft Phase I WIP. For example, the District's final WIP incorporates a new urban stormwater volume standard (1.2-inch retention) that is consistent with the District's draft MS4 permit. EPA anticipates that the final MS4 permit will include detailed information on permit conditions, with timelines for implementation, tracking, inspections, and reporting. The District's final Phase I WIP also includes a more detailed list of GSA properties and provides a detailed discussion of the District's enforcement authority regarding federal properties. The WIP also describes a plan for engaging federal facilities in the Phase II WIP, including tracking of federal 2-year milestones.

EPA will maintain ongoing oversight of the District's urban stormwater sector and will continue to work with DDOE to finalize the DC MS4 permit. EPA will assure specific permit conditions and fact sheet language to reflect TMDL expectations (e.g., implementation action timelines, inspection schedule, verification, and tracking). Once the DC MS4 permit is finalized, EPA will continue to work with the District to implement the MS4 permit consistent with meeting 2-year milestones and reporting for the TMDL.

District of Columbia Wastewater

The District of Columbia's final Phase I WIP also showed significant improvement in the wastewater sector. Not only does the final Phase I WIP include a complete list of non-significant facilities, but EPA and DC agreed upon the inclusion of a growth reserve in the final TMDL. Although the final Phase I WIP and input deck do acknowledge the growth reserve, the final

WLA for Blue Plains is separate and provides loading sufficient for and consistent with the permit limits in the 2010 NPDES permit. If additional capacity is needed beyond the permitted loads, the District has committed to work with other jurisdictions as necessary to adjust the Blue Plains Inter-jurisdictional Municipal Agreement.

EPA will maintain ongoing oversight of the District's wastewater program and will implement the TMDL WLAs through the permits that EPA issues, renews and modifies in the District of Columbia. EPA also will continue to work closely with the District to assure that loads from both significant and nonsignificant sources are consistent with the aggregate WLA. Specifically, the final Phase I WIP proposes that the WLA for Blue Plains be developed based on the annual average flows for outfall 001. However, WLAs for the combined sewer system (CSS) and its associated WWTP in the District of Columbia are based on the limits in the NPDES permit issued by EPA for Blue Plains and the Long Term Control Plan (LTCP) for the CSS system in the District of Columbia. The WLAs assume full implementation of the Blue Plains LTCP.

District of Columbia Conclusion

EPA applauds the District of Columbia for its improvements in its Phase I WIP. EPA believes that the District of Columbia will achieve and maintain its TMDL allocations based on its final Phase I WIP. EPA commits to issue permits and target enforcement actions to implement TMDL allocations. EPA also will encourage and work with its sister federal agencies to lead by example in reducing nitrogen, phosphorus, and sediment loads into the Potomac and Anacostia rivers.

8.4.3 Maryland

Maryland developed a final Phase I WIP input deck with nitrogen, phosphorus, and sediment controls that more than met the interim target allocations by achieving a 70 percent reduction by 2017, and met the nitrogen, phosphorus, and sediment target allocations by 2020. Maryland's final Phase I WIP also met EPA's expectations for providing reasonable assurance that these allocations will be met. As a result, EPA based Maryland's final allocations entirely on Maryland's final Phase I WIP.

Maryland Allocations

Maryland meets its nitrogen, phosphorus, and sediment allocations for each basin in the final TMDL, based on EPA's quantitative and qualitative evaluation of Maryland's final Phase I WIP. Maryland submitted proposed modifications to its nitrogen, phosphorus, and sediment allocations in each of its five basins. EPA used the Chesapeake Bay Water Quality Model to confirm that these modifications would still attain applicable WQS. Maryland's final Phase I WIP input deck resulted in jurisdiction-wide loads that are 0 percent over modified nitrogen, phosphorus, and sediment allocations. Maryland's Bay TMDL jurisdiction-wide allocations are nitrogen 39.09 mpy; phosphorus 2.72 mpy; and sediment 1218.10 mpy.

Maryland Agriculture

Maryland's final Phase I WIP showed significant improvements from its draft Phase I WIP in the agriculture sector, including a strong contingency statement that significantly bolsters EPA's reasonable assurance that Maryland will meet its agriculture targets by committing to explore new policy measures and mandatory BMP compliance options. For example, these could include

a regulatory change that cover crops be planted on the highest risk acres. The Maryland final Phase I WIP also provides more detail on phosphorus management, strengthens contingencies, improves coordination with USDA, develops a plan for increasing staff levels, and selects a subset of strategies to implement by 2017.

EPA will maintain ongoing oversight of Maryland's agriculture sector. EPA will use its national review of CAFO State Technical Standards in 2011 as an opportunity to identify any deficiencies in the State Technical Standards for protecting water quality. Through its review of State Technical Standards, EPA also will evaluate whether Maryland's phosphorus management program is sufficient to address phosphorous imbalances and water quality concerns. If deficiencies are identified that are not addressed by Maryland or a CAFO permit does not include other conditions to achieve nitrogen and phosphorus reductions identified in the final Phase I WIP, EPA may object to permits if they are not protective of water quality.

Maryland Urban Stormwater

Maryland's final Phase I WIP also showed significant improvement in its commitment to urban stormwater management. In the final Phase I WIP, Maryland committed to several actions to ensure reductions, including limits on lawn fertilizer use, use of natural filters such as riparian buffers and stream restoration, and an increase in watershed restoration requirements for MS4s by requiring additional nitrogen, phosphorus, and sediment reductions. The WIP also included a contingency plan whereby if local utilities or other systems of charges are not underway in 2012, Maryland will seek legislation requiring development of local stormwater utilities via a statewide system of fees. The final Phase I WIP also included descriptions of the policy, financing, and tracking mechanisms for implementing urban stormwater retrofit programs.

Maryland also included in its final Phase I WIP specific activities and milestones for urban stormwater program implementation, including the following:

- Renewal of Phase I MS4 permits to require nutrient and sediment reductions equivalent to urban stormwater treatment on 30 percent of the impervious surface that does not have adequate urban stormwater controls.
- Renewal of Phase II MS4 permits to require nutrient and sediment reductions equivalent to urban stormwater treatment on 20 percent of the impervious surface that does not have adequate urban stormwater controls.
- Renewal of State Highway Administration Phase I and Phase II MS4 permits to require nutrient and sediment reductions equivalent to urban stormwater treatment on 30 percent of the impervious surface that does not have adequate controls.
- Regulation of fertilizer applications on 220,000 acres of commercially managed lawns.

While EPA is satisfied overall with Maryland's demonstration of reasonable assurance, EPA will closely track the nitrogen, phosphorus, and sediment reductions expected to result from these urban stormwater retrofits. EPA will maintain ongoing oversight of Maryland's urban stormwater sector and will assess how well Maryland is able to track and quantify outcomes from the retrofits projected in its final Phase I WIP.

Maryland Wastewater

Maryland's final Phase I WIP also showed significant improvement in the wastewater sector. Maryland committed to identify options to structure the Bay Restoration Fund (BRF) fee in order to fully fund Enhanced Nutrient Removal (ENR) upgrades at 67 public major wastewater treatment plants. Options include fees based on consumption, income, or other criteria; and, in 2012, to propose an amendment to the BRF statute to change the BRF fee in order to provide funding needed to complete the upgrades.. Maryland's final Phase I WIP also included a contingency that if the BRF statute is not amended, "All funding for ENR projects will be reduced from 100 percent grant to provide partial grant funds for each remaining project. Local governments would be responsible for the balance of the necessary funding. State low interest loan funds would be available to assist."

EPA will maintain ongoing oversight of Maryland's wastewater sector to ensure that the actions detailed in the final Phase I WIP occur and achieve the expected pollutant reductions.

Maryland Conclusion

EPA applauds Maryland for following up a strong draft with an even stronger final Phase I WIP. Maryland clarifies how its existing programs will implement nitrogen, phosphorus, and sediment reductions ahead of schedule. Both Maryland and EPA are committed to carefully review progress and adopt contingency actions as necessary to achieve and maintain the nitrogen, phosphorus, and sediment reductions.

8.4.4 New York

New York developed a final Phase I WIP input deck with nitrogen, phosphorus, and sediment controls that achieved additional reductions from the agricultural and wastewater sectors and achieved jurisdiction-wide allocations for sediment, but did not meet allocations for nitrogen or phosphorus. In response to New York's concerns regarding the fairness of how EPA distributed the Baywide allocations to jurisdictions, EPA increased New York's nitrogen and phosphorus allocations by a total of 1,000,000 pounds and 100,000 pounds, respectively, and approved New York's exchange of some phosphorus for nitrogen (see Section 6.4.5). New York still did not meet its target allocations for nitrogen and phosphorus, however, despite these increased allocations and nutrient exchanges. As described below, EPA closed the gap with an aggregate WLA backstop allocation that further reduced New York's wastewater load.

New York Allocations

New York meets its modified nitrogen, phosphorus, and sediment allocations in the final TMDL, based on a combination of EPA's quantitative and qualitative evaluation of New York's final Phase I WIP, EPA's increase of New York's nitrogen and phosphorus allocations, EPA's approval of New York's exchange of some phosphorus for nitrogen, and EPA's establishment of a backstop allocation for wastewater as described in detail below. New York's final Phase I WIP input deck resulted in loads that are 14 percent under its sediment allocation and 5 percent and 2 percent over its modified nitrogen and phosphorus allocations, respectively. EPA closed the gaps between New York's WIP and its nitrogen and phosphorus allocations with an aggregate WLA backstop allocation that further reduced New York's wastewater load. New York's jurisdiction-wide allocations are nitrogen 8.77 mpy; phosphorus 0.57 mpy; and sediment 292.96 mpy.

New York Agriculture

New York's final Phase I WIP showed significantly more details in the agriculture section to demonstrate reasonable assurance that WIP commitments would be achieved than it did in its draft. New York's final Phase I WIP is built on the strength of New York's Agricultural Environmental Management (AEM) and CAFO programs. For example, AEM captures 95 percent of dairies in the watershed and farms must participate in AEM to get Farm Bill funding, CAFO permits are required at dairies with as few as 200 animal units, and every field covered by a nutrient management plan is tested for phosphorus. The WIP also includes a regulatory requirement for pasture fencing as a contingency action, and outlines specific steps to implement advanced technologies to process dairy manure. New York's final Phase I WIP also describes in-depth strategies that support New York's BMP implementation rates. These strategies are based on analyses of historic rates and cost of practices, realistic estimates of state and federal funding, and the type of agriculture practiced in New York. These strategies met EPA's expectations for reasonable assurance that New York will implement the commitments in its final Phase I WIP.

EPA will maintain ongoing oversight of New York's agriculture sector. EPA will use its national review of CAFO State Technical Standards in 2011 and beyond as an opportunity to identify any deficiencies in the State Technical Standards for protecting water quality. If deficiencies are identified that are not addressed by the state or the permit does not include other conditions to achieve nitrogen and phosphorus reductions identified in the final Phase I WIP, EPA may object to permits if they are not protective of water quality.

New York Urban Stormwater

New York's final Phase I WIP showed improvement in the urban stormwater sector by better documenting the strengths of its current program. New York volunteered to shift 50 percent of its urban stormwater load from the LA to the WLA. This change enhances reasonable assurance that nitrogen, phosphorus, and sediment allocations will be achieved and maintained by signaling that substantially more urban stormwater could potentially be subject to NPDES permits issued by New York as necessary to protect water quality. The final Phase I WIP also documented a variety of funding sources to implement proposed strategies, and committed to BMPs that address urban stormwater quality and quantity. In addition, the New York construction general permit imposes volume-based post-construction controls on a significant portion of all construction projects state-wide. New York also finalized legislation limiting the residential use of fertilizer.

EPA will maintain ongoing oversight of New York's urban stormwater sector. EPA will monitor New York's progress in implementing its urban stormwater program and issuing permits that achieve the nitrogen, phosphorus, and sediment reductions that New York committed to in its final Phase I WIP. EPA also will provide oversight of the urban stormwater permitting program.

New York Wastewater

In the wastewater sector, New York's final Phase I WIP included a commitment to improve WWTP performance to BNR equivalent performance levels for nitrogen (8 mg/L) and to 0.5 mg/L for phosphorus at design flow. Despite increasing New York's nitrogen and phosphorus allocations, however, New York's WIP did not reduce loads enough to meet the modified

allocations. As a result, EPA applied backstop allocations and actions that further reduce New York's WLA for wastewater to close the numeric gap.

EPA established an aggregate WLA for WWTPs that is calculated using the nitrogen and phosphorus performance levels to which New York committed and that assumed that significant WWTPs are at current flow rather than design flow. As discussed in Section 8.3, EPA allowed for an aggregate WLA for WWTPs in New York to provide time for the New York State Department of Environmental Conservation to review engineering reports from WWTPs and determine the load reductions expected from each facility. New York has committed to provide information to support individual WLAs for these WWTPs in its Phase II WIP. EPA understands that New York plans to renew and/or modify WWTP permits after completing its Phase II WIP, consistent with the applicable TMDL allocations at that time.

New York Conclusion

EPA values New York's continued commitment to protect its local waters and restore the Chesapeake Bay through strong agricultural and urban stormwater programs as well as commitments to reduce WWTP discharges. EPA has made adjustments to New York's allocations based on concerns with equity (USEPA 2010f). EPA is confident that New York will achieve its agricultural and urban stormwater allocations. EPA applied a backstop allocation to further reduce wastewater loads to enable New York to meet its statewide nitrogen and phosphorus allocations.

8.4.5 Pennsylvania

Pennsylvania developed a final Phase I WIP input deck with nitrogen, phosphorus, and sediment controls that met its sediment allocations and came within two percent of jurisdiction-wide nitrogen and phosphorus allocations after allowing for nitrogen to phosphorus exchanges. Pennsylvania's final Phase I WIP resulted in loads below nitrogen, phosphorus, and sediment allocations in the Potomac, Eastern, and Western Shore Basins. EPA will place the spare allocation for these basins back into the agriculture nonpoint source sector. In contrast, after allowing for nitrogen to phosphorus exchanges at EPA-approved ratios to modify the Pennsylvania Susquehanna basin nitrogen and phosphorus allocations, the Commonwealth's final Phase I WIP input deck remained 2 percent over its nitrogen allocation and 2 percent over its phosphorus allocation. EPA and the Commonwealth have reached agreement on further reductions from agricultural and urban stormwater nonpoint sources proportional to the amount of load that they contribute to the Bay to achieve allocations in the Susquehanna in the final TMDL. These further reductions are supported by contingencies included in the final Phase I WIP and EPA's commitment to track progress and take any necessary federal actions to ensure all pollutant reductions are achieved and maintained.

Pennsylvania's final Phase I WIP demonstrated substantially more reasonable assurance that it could achieve and maintain agricultural allocations due to several key improvements. However, as described below, Pennsylvania did not meet EPA's expectations for reasonable assurance that urban stormwater allocations will be achieved and maintained. As described below, EPA closed this reasonable assurance gap with a backstop adjustment for Pennsylvania's urban stormwater load that transfers 50 percent of the urban stormwater load not currently subject to NPDES permits from the LA to the WLA.

Pennsylvania Allocations

Pennsylvania met its nitrogen, phosphorus, and sediment allocations in each basin in the final TMDL, based on a combination of EPA's quantitative and qualitative evaluation of Pennsylvania's final Phase I WIP, EPA's commitment to enhanced oversight and actions for Pennsylvania agriculture, EPA's approval of nitrogen and phosphorus exchanges, and EPA's establishment of a backstop adjustment for urban stormwater as described in detail below. After adjusting for EPA-approved nitrogen and phosphorus exchanges, Pennsylvania's WIP input deck resulted in statewide loads that are 2 percent over for nitrogen and phosphorus, and 5 percent under for sediment allocations. EPA and the Commonwealth have reached agreement on further reductions from agriculture and urban stormwater nonpoint sources proportional to the amount of load that they contribute to the Bay to achieve allocations in the Susquehanna and, therefore, statewide. These further reductions are supported by the contingencies included in the WIP and EPA's commitment to track progress and take any necessary federal actions to ensure these reductions are achieved and maintained. Pennsylvania's final allocations are nitrogen 73.93 mpy; phosphorus 2.93 mpy; and sediment 1983.78 mpy.

Pennsylvania Agriculture

Pennsylvania's final Phase I WIP showed significant improvement from the draft Phase I WIP in the agriculture sector. The WIP included detailed strategies for increasing compliance with agricultural regulations and for advancing manure technologies, and aligned Pennsylvania's technical workforce to support WIP priorities. The Pennsylvania final Phase I WIP detailed a specific approach for tracking agricultural conservation by working with EPA, the National Association of Conservation Districts, and other Bay jurisdictions' agricultural agencies to develop verification protocols for crediting non-cost-shared practices in the Chesapeake Bay Watershed Model.

EPA wants Pennsylvania to succeed in achieving these reductions from the agriculture sector. To support the Commonwealth's efforts, EPA will use its national review of CAFO State Technical Standards in 2011 and beyond as an opportunity to identify any deficiencies in the State Technical Standards for protecting water quality. EPA also will evaluate whether Pennsylvania's approach to managing phosphorus is sufficient to address phosphorus imbalances and water quality concerns. EPA will continue to engage Pennsylvania about the ways to phase out the practice of winter spreading of manure, which continues to be allowed in Pennsylvania despite being banned in other jurisdictions. If Pennsylvania does not adequately address these matters or the permit does not include other conditions to achieve the nitrogen and phosphorus reductions identified in its final Phase I WIP, EPA may object to permits if they are not protective of water quality.

EPA also is committed to enhanced oversight and actions for Pennsylvania's agriculture sector. Upon review of the Phase II WIP, EPA will revisit the WLAs for agriculture and WWTPs in the event that Pennsylvania does not make significant progress in the following areas: receiving EPA approval for its CAFO program, demonstrating enhanced compliance assurance with agricultural state regulatory programs, developing more targeted contingency actions, and advancing manure technologies. Specifically, EPA may consider

- More stringent phosphorus limits on WWTPs.

- Shifting a greater portion of Pennsylvania's AFO load from the LA to the WLA. EPA would assume full implementation of practices required under a CAFO permit for AFOs included in the WLA. The shift to the WLA would signal that any of these AFOs could potentially be subject to NPDES permits as necessary to protect water quality. AFOs would only be subject to NPDES permit conditions issued by Pennsylvania upon designation. EPA will consider this step if Pennsylvania does not achieve reductions in agricultural loads as identified in the final Phase I WIP. EPA may also pursue designation activities based upon considerations other than TMDL and WIP implementation.

Pennsylvania Urban Stormwater

Pennsylvania's final Phase I WIP also showed improvement in the urban stormwater sector. It provided a strong description of Chapter 102 regulations and what Pennsylvania can enforce and regulate to achieve no net change in urban stormwater runoff. The Commonwealth requires a *no net increase* provision to maintain existing hydrology or demonstrate that at least 20 percent of a previously disturbed site has the hydrologic conditions of meadow or better. The WIP also included a commitment from PADEP to add a statewide program to reduce the application of fertilizer on non-agricultural lands.

Despite these improvements, the WIP's urban stormwater discussion continues to have weaknesses. Pennsylvania's final WIP lacked clear strategies to achieve the almost 40 percent reduction in urban loads that the Commonwealth included in its WIP input deck. For example, PADEP continues to assert that the scope of the MS4 program is limited to the conveyance system only, and Pennsylvania's small MS4 permit program does not include construction and post-construction requirements. Further, the requirement for an MS4 to have a TMDL Implementation Plan does not include the Chesapeake Bay TMDL, and there is no supporting documentation to quantify how local TMDL implementation plans will meet Bay targets. In addition, Pennsylvania is assuming high compliance levels, but has not demonstrated a high level of compliance assurance activities nor enhanced the field resources available to support an enforcement presence. Recent EPA activities in this area have illustrated a high level of noncompliance with existing permits.

As a result of the reasonable assurance weaknesses in the urban stormwater sector, EPA applied backstop adjustments and actions to this sector. Specifically, EPA transferred 50 percent of the urban stormwater load that is not currently subject to NPDES permits from the LA to the WLA. This TMDL allocation adjustment increased reasonable assurance that nitrogen, phosphorus, and sediment allocations from urban stormwater discharges will be achieved and maintained by signaling that EPA is prepared to designate any of these discharges as requiring NPDES permits. Urban areas would only be subject to NPDES permit conditions protective of water quality as issued by the Commonwealth upon designation. EPA will consider this step if Pennsylvania does not demonstrate progress toward reductions in urban loads identified in its final Phase I WIP. EPA may also pursue designation activities based on considerations other than TMDL and WIP implementation.

EPA will maintain close oversight of general permits for the Pennsylvania urban stormwater sector (PAG-13, PAG-2) and may object as needed if permits are not protective of WQS and regulations. Upon review of Pennsylvania's Phase II WIP, EPA will revisit the WLAs for WWTPs, including more stringent phosphorus limits, in the event that Pennsylvania does not

reissue PAG-13 and PAG-2 general permits for Phase II MS4s and construction activities that are protective of water quality by achieving the load reductions called for in Pennsylvania's final Phase I WIP.

Pennsylvania Wastewater

Pennsylvania's final Phase I WIP showed a number of key improvements in the wastewater sector. For example, the WIP provided language on a process for granting 25 lb/yr credit to POTWs for each septic system retired and incorporated into a treatment facility and provided additional language on implementation schedules for significant WWTP upgrades. In addition, the final Phase I WIP and input decks included permit numbers for additional non-significant facilities covered under the PAG-04 and PAG-05 general permits.

EPA committed to enhanced oversight and actions for the Pennsylvania wastewater sector, and established individual WLAs for WWTPs in the TMDL to ensure that sufficient detail is provided to inform individual permits for sources within the WLA. Provisions of this TMDL allow (under certain circumstances, see Section 10) for modifications of allocations within a basin to support offsets and trading opportunities. Further, as described above, EPA will assess Pennsylvania's near-term urban stormwater and agricultural program progress and determine whether EPA should modify TMDL allocations to assume additional reductions from WWTPs.

Pennsylvania Conclusion

Pennsylvania's final Phase I WIP articulated a strategy to achieve its TMDL allocations. Pennsylvania's final Phase I WIP contained significantly more detail than the draft Phase I WIP and, with the incorporation of EPA's backstop adjustment and enhanced oversight, met EPA's expectations for reasonable assurance that agricultural reductions can be achieved and maintained. EPA is committed to enhanced oversight to ensure that necessary program enhancements and load reductions are achieved in all sectors and that permits are consistent with TMDL WLAs. Further, EPA applied a backstop adjustment for urban stormwater to signal that substantially more urban stormwater discharges may need to be designated for coverage under the NPDES program and receive NPDES permits from Pennsylvania that EPA deems are protective of water quality.

8.4.6 Virginia

As described below, Virginia's final Phase I WIP showed significant improvements from its draft Phase I WIP, including a commitment to implement aggressive, additional WWTP upgrades, a more accountable urban stormwater program, and expanded mandatory agriculture programs if voluntary programs are not successful. EPA is committing to ongoing oversight of the agriculture and wastewater sectors and enhanced oversight of Virginia's urban stormwater sector to ensure that WLAs and LAs are achieved and maintained.

Virginia Allocations

Virginia met its nitrogen, phosphorus, and sediment allocations for each basin in the final TMDL, based on a combination of EPA's quantitative and qualitative evaluation of Virginia's final Phase I WIP, EPA's approval of Virginia's exchange of some phosphorus for nitrogen, and EPA's commitment to enhanced oversight and actions for Virginia urban stormwater. After

adjusting for EPA-approved nitrogen and phosphorus exchanges, Virginia's WIP input deck resulted in statewide loads that were 2 percent over for nitrogen and phosphorus, and 3 percent under for sediment. Some individual basins, however, were as much as 5 percent over their nitrogen and phosphorus target allocations, or 9 percent over their sediment target allocations. EPA and the Commonwealth have reached agreement on further reductions from agricultural, urban stormwater, and on-site septic system nonpoint sources proportional to the amount of load that they contribute to the Bay to achieve allocations both jurisdiction-wide and in each basin in the final TMDL. These further reductions are supported by the contingencies included in Virginia's final Phase I WIP and EPA's commitment to track progress and take any necessary federal actions to ensure these reductions are achieved and maintained. Virginia's jurisdiction-allocations are nitrogen 53.42 mpy; phosphorus 5.36 mpy; and sediment 2578.90 mpy.

Virginia Agriculture

Virginia's final Phase I WIP showed a number of improvements in the agriculture sector. For example, Virginia shifted the entire AFO load into the WLA and assumed full implementation of barnyard runoff control, waste management, and mortality composting practices that would be required under a CAFO permit. This change enhanced reasonable assurance that nitrogen, phosphorus, and sediment allocations from animal operations will be achieved and maintained by signaling that any of these facilities could potentially be subject to NPDES permits as necessary to protect water quality. Virginia also committed to evaluating all small AFOs to determine whether they discharge or propose to discharge and should be permitted. Virginia's final Phase I WIP also provided more detail on the type of practices that are likely to be included in Resource Management Plans and mechanisms for promoting these Plans to producers. Virginia committed to pursue state legislation for mandatory actions or programs in the event that the 2-year milestone agricultural reduction targets are not met, and provided assurance that sufficient funding will be available through the 2013 milestone period.

EPA will maintain ongoing oversight of Virginia's agriculture program and will closely track compliance with the agricultural milestone targets to ensure that appropriate contingency actions are pursued as necessary. EPA will use its national review of CAFO State Technical Standards in 2011 and beyond to identify any deficiencies in the State Technical Standards for protecting water quality. Through its review of CAFO State Technical Standards, EPA also will evaluate whether Virginia's phosphorus management program is sufficient to address phosphorus. If deficiencies are identified that are not addressed by the Commonwealth or the permit does not include other conditions to achieve nutrient reductions identified in the WIP, EPA may object to permits if they are not protective of water quality.

Virginia Urban Stormwater

Virginia's final Phase I WIP also showed improvement in the urban stormwater sector. Virginia revised its WIP target loads to include much more achievable, yet still aggressive, load reductions from the urban sector, committed to implement a Bay-wide and possibly statewide regulatory program to limit fertilizer application on urban lands, and committed to finalize a urban stormwater rule in 2011 that would improve new development and redevelopment performance standards. Virginia also requested individual WLAs for Phase I MS4s to more explicitly demonstrate the amount of urban runoff load that each permitted jurisdiction is expected to achieve.

EPA committed to enhanced oversight and actions regarding Virginia's urban stormwater program. Specifically, if the statewide rule and/or the Phase II WIP do not provide additional assurance regarding how urban stormwater discharges outside of MS4 jurisdictions will achieve nitrogen, phosphorus, and sediment reductions proposed in the final Phase I WIP and assumed within the TMDL allocations, EPA may shift a greater portion of Virginia's urban stormwater load from the LA to the WLA. This shift would signal that substantially more urban stormwater could potentially be subject to NPDES permits issued by the Commonwealth as necessary to protect water quality.

As in other Bay jurisdictions, EPA committed to ongoing oversight and actions. This includes potentially objecting to proposed urban stormwater regulations, MS4 permits, construction general permits, and industrial stormwater permits that are not consistent with the Bay TMDL allocations and do not require conditions to reduce nitrogen, phosphorus, and sediment loads to the degree identified in the final Phase I WIP.

Virginia Wastewater

Virginia's final Phase I WIP showed strong improvement in the wastewater sector. Virginia committed to require WWTP upgrades in the James River Basin sufficient to achieve 100 percent of reductions needed to meet DO-based allocations and 60 percent of reductions needed to meet chlorophyll-*a* based allocations by 2017. Virginia has committed to additional WWTP upgrades to achieve 100 percent of the reductions needed to meet the chlorophyll-*a* based WLAs for WWTPs by 2023, as outlined in the Staged Implementation Approach for Wastewater Treatment Facilities in the Virginia James River Basin, which is found in Appendix X.

EPA will maintain ongoing oversight of Virginia's wastewater program. EPA will review NPDES permit conditions to ensure that they are consistent with the assumptions and requirements of the Bay TMDL WLA. If VADEQ and EPA cannot come to agreement on the language of the Watershed General Permit related to combined sewer systems (CSS) by the time that EPA reviews the Commonwealth's Phase II WIP, EPA may reopen WLAs to ensure that they are reasonable and that compliance can be achieved.

Virginia Conclusion

Due to substantial improvements between the draft and final Phase I WIP, Virginia now demonstrates that it can achieve and maintain nitrogen, phosphorus, and sediment allocations for all source sectors. As a result, EPA has removed all backstop allocations for Virginia that it had proposed in the draft TMDL. EPA commits to careful oversight to ensure that the valuable commitments detailed in the final Phase I WIP are implemented on schedule, and that permits and programs within the Commonwealth are consistent with assumptions and requirements of the TMDL WLAs. EPA also will carefully assess the Phase II WIP to determine whether EPA should establish a backstop adjustment for urban stormwater that shifts substantially more of the unregulated load to the WLA.

8.4.7 West Virginia

West Virginia developed a final Phase I WIP input deck with nitrogen, phosphorus, and sediment controls that met its statewide target allocations when run through the Chesapeake Bay Watershed Model after adjusting for EPA-approved nitrogen and phosphorus exchanges.

West Virginia's final Phase I WIP did not fully meet EPA's expectations for reasonable assurance that agriculture allocations will be achieved, however. EPA closed the reasonable assurance gap with a backstop adjustment for West Virginia's agriculture load that transferred 75 percent of West Virginia's AFO load into the WLA and assumed full implementation of barnyard runoff control, waste management, and mortality composting practices. EPA also committed to enhanced oversight of Virginia's urban stormwater and wastewater sectors to ensure that they achieve and maintain their allocations.

EPA based West Virginia's final allocations on a combination of West Virginia's final Phase I WIP with the above backstop adjustment for animal agriculture and enhanced oversight actions for urban stormwater and wastewater as described below.

West Virginia Allocations

West Virginia met its nitrogen, phosphorus, and sediment allocations for each basin in the final TMDL, based on a combination of EPA's quantitative and qualitative evaluation of West Virginia's final Phase I WIP, EPA's commitment to enhanced oversight and actions for West Virginia urban stormwater and wastewater, and EPA's establishment of a backstop adjustment for West Virginia agriculture as described in detail below. After adjusting for EPA-approved nitrogen and phosphorus exchanges, West Virginia's input deck resulted in statewide loads that are 0 percent under nitrogen, 1 percent under phosphorus and 11 percent under sediment allocations.

West Virginia agreed that any *spare allocations* in the Potomac River Basin would go to a LA reserve. Results from the final Phase I WIP input deck exceed nitrogen, phosphorus, and sediment allocations by 51 percent, 18 percent and 76 percent in the West Virginia portion of the James River basin, however. These exceedances are in large part due to an increasing portion of loads in West Virginia reaching the tidal portions of the James River as downstream loads decrease. EPA and West Virginia have reached agreement to fill these gaps by assuming additional reductions from all nonpoint sources proportional to the amount of loads they discharge to the Bay. West Virginia has committed to explore additional opportunities for reducing loads in this basin. EPA will track progress and consider whether to adopt additional federal actions to ensure that reductions are achieved and maintained. Furthermore, EPA will consider the effect of delivery factors when evaluating options for allocating basinwide loads to the major basins and jurisdictions in 2011. West Virginia's jurisdiction-wide allocations are nitrogen 5.45 mpy; phosphorus 0.59 mpy; and sediment 310.88 mpy.

West Virginia Agriculture

West Virginia's final Phase I WIP included some improvements. For example, it focused on effective nutrient-reducing practices such as poultry litter transport, targeted Nutrient Management Plans in high nitrogen-loading counties, and stream fencing. West Virginia also has

increased coordination efforts with USDA to support proposed agriculture strategies and implementation.

West Virginia's final Phase I WIP contained a number of weaknesses in the agriculture sector, however. The WIP lacked detailed strategies for how West Virginia will implement nitrogen, phosphorus, and sediment controls on agricultural lands at levels necessary to meet TMDL allocations. The WIP also lacked strong contingencies such as new policies, programs, or mandates in the event that voluntary approaches are not sufficient to meet reduction goals. West Virginia's recently approved CAFO program has not yet had an opportunity to demonstrate a successful track record for AFO outreach and permitting.

To address these reasonable assurance weaknesses, EPA applied backstop adjustments and actions to this sector. Specifically, EPA shifted 75 percent of West Virginia's AFO load into the WLA and assumed full implementation of barnyard runoff control, waste management, and mortality composting practices required under a CAFO permit on these AFOs. This adjustment increased reasonable assurance that nitrogen, phosphorus, and sediment allocations for the agriculture sector will be achieved and maintained by signaling that EPA is prepared to designate any of these AFOs as requiring NPDES permits. The shift signaled that any of these operations could potentially be subject to NPDES permits as necessary to protect water quality. AFOs would only be subject to NPDES permit conditions as issued by West Virginia upon designation. EPA will consider this step if West Virginia does not achieve reductions in agricultural loads as identified in the WIP. EPA also may pursue designation activities based upon considerations other than TMDL and WIP implementation. Based upon EPA's review of the state technical standards, the number of permit applications and permits issued under the new CAFO program, and progress towards developing programs to reduce agricultural loads, EPA will assess in the Phase II WIP whether more stringent WLAs for WWTPs are necessary to ensure that TMDL allocations are achieved.

In addition, EPA committed to ongoing oversight and actions consistent with other Bay jurisdictions. EPA will use its national review of CAFO State Technical Standards in 2011 and beyond as an opportunity to identify any deficiencies in the State Technical Standards for protecting water quality. Through its review of CAFO State Technical Standards, EPA also will evaluate whether West Virginia's phosphorus management program is sufficient to address phosphorus imbalances and water quality concerns. If deficiencies are identified that are not addressed by the state or a permit does not include other conditions to achieve nutrient reductions identified in the WIP, EPA may object to permits if they are not protective of water quality.

West Virginia Urban Stormwater

West Virginia's final Phase I WIP showed some improvement in the urban stormwater sector. For example, West Virginia clarified contingencies in its final Phase I WIP, including mechanisms to regulate urban stormwater discharges from new development and redevelopment outside of regulated MS4 areas and implementation of retrofits to reduce pollutant loads from existing discharges.

The WIP still has weaknesses in its demonstration of reasonable assurance that urban stormwater allocations will be achieved and maintained, however. As a result, EPA committed to enhanced

oversight and actions of West Virginia's urban stormwater program to ensure implementation. If urban stormwater rules and/or the Phase II WIP do not provide additional assurance regarding how urban stormwater discharges outside of MS4 jurisdictions will achieve nitrogen, phosphorus, and sediment reductions proposed in the final WIP and assumed within the TMDL LAs, EPA may shift a greater portion of West Virginia's urban stormwater load from the LA to the WLA. The shift would signal that substantially more urban stormwater could potentially be subject to NPDES permits issued by West Virginia as necessary to protect water quality. EPA will also monitor any increased discharges above the current baseline, as no reductions from permitted urban stormwater are expected. Finally, as in other Bay jurisdictions, EPA commits to ongoing oversight to ensure that programs and permits are consistent with WIP commitments. If they are not, EPA is prepared to take other federal actions as identified in its December 29, 2009 letter to ensure that TMDL allocations are achieved and maintained.

West Virginia Wastewater

West Virginia's final Phase I WIP showed improvement in the wastewater sector. For example, it included a commitment for the West Virginia legislature in 2011 to consider mechanisms to enhance financial assistance for POTWs to facilitate prompt compliance with NPDES permit requirements resulting from the Chesapeake Bay TMDL. West Virginia also provided additional information on compliance schedules and limits in the Permit Compliance System, and committed to reevaluate certain wastewater dischargers in its Phase II WIP to determine whether it will be necessary to reallocate loads.

Despite these improvements, however, the WIP does not fully meet EPA's expectations for reasonable assurance. As a result, EPA committed to enhanced oversight and actions for the West Virginia wastewater sector and, consistent with West Virginia's input deck, established individual WLAs for significant WWTPs in the TMDL to ensure that sufficient detail is provided to inform individual permits for sources within the wastewater WLA. Provisions of this TMDL allow (under certain circumstances, see Section 10) for modifications of allocations within a basin to support offsets and trading opportunities. Further, as described above, EPA will assess West Virginia's near-term agriculture program progress and determine whether additional federal actions consistent with EPA's December 29, 2009 letter, such as modifying TMDL allocations to assume additional reductions from WWTPs, are necessary to ensure that TMDL allocations are achieved.

West Virginia Conclusion

In summary, West Virginia's final Phase I WIP did not meet EPA's expectations for reasonable assurance for the agriculture sector. However, it did include an input deck with nitrogen, phosphorus, and sediment controls that, if implemented, would achieve statewide allocations. EPA wants West Virginia to successfully implement its final Phase I WIP. To fill the remaining reasonable assurance gap, EPA applied a backstop adjustment that shifted a portion of unregulated AFO production area loads into the WLA as a signal that substantially more operations may be subject to NPDES permits to protect water quality. Consistent with its December 29, 2009 letter, EPA is also prepared to take other federal actions as detailed in its December 29, 2010 letter as necessary to ensure that West Virginia succeeds in achieving the load reductions identified in its final Phase I WIP.

8.5 ALLOCATION SUMMARY CHART

The final allocations for nitrogen, phosphorus, and sediment listed above also are presented in Table 8-5 at both the jurisdiction and major river basin scales for each of the jurisdictions. These allocations are further sub-allocated to the 92 Bay segment watersheds by individual and aggregate WLAs and LAs in Section 9.

Table 8-5. Chesapeake Bay watershed nitrogen, phosphorus, and sediment allocations by jurisdiction and by major river basin, in millions of pounds per year

Jurisdiction	Major river basin	Nitrogen allocations (million lbs/year)	Phosphorus allocations (million lbs/year)	Sediment allocations (million lbs/year)
Pennsylvania	Susquehanna	68.90	2.49	1,741.17
	Potomac	4.72	0.42	221.11
	Eastern Shore	0.28	0.01	21.14
	Western Shore	0.02	0.00	0.37
	PA Total	73.93	2.93	1,983.78
Maryland	Susquehanna	1.09	0.05	62.84
	Eastern Shore	9.71	1.02	168.85
	Western Shore	9.04	0.51	199.82
	Patuxent	2.86	0.24	106.30
	Potomac	16.38	0.90	680.29
	MD Total	39.09	2.72	1,218.10
Virginia	Eastern Shore	1.31	0.14	11.31
	Potomac	17.77	1.41	829.53
	Rappahannock	5.84	0.90	700.04
	York	5.41	0.54	117.80
	James	23.09	2.37	920.23
	VA Total	53.42	5.36	2,578.90
District of Columbia	Potomac	2.32	0.12	11.16
	DC Total	2.32	0.12	11.16
New York	Susquehanna	8.77	0.57	292.96
	NY Total	8.77	0.57	292.96
Delaware	Eastern Shore	2.95	0.26	57.82
	DE Total	2.95	0.26	57.82
West Virginia	Potomac	5.43	0.58	294.24
	James	0.02	0.01	16.65
	WV Total	5.45	0.59	310.88
Preliminary Baywide Allocation		185.93	12.54	6,453.61
Atmospheric Deposition Allocation^a		15.7	N/A	N/A
Total Baywide Allocation		201.63	12.54	6,453.61

^a Cap on atmospheric deposition loads direct to Chesapeake Bay and tidal tributary surface waters to be achieved by federal air regulations through 2020.

Note: These basin-jurisdiction allocations have been modified from the original allocations established by EPA earlier this summer for the following reasons:

1. New York's allocations for nitrogen and phosphorus have been adjusted;
2. West Virginia's allocation for sediment has been corrected;
3. Maryland's allocations have been adjusted for some jurisdiction-requested basin exchanges;
4. Several other jurisdictions requested nutrient exchanges in their final Phase I WIPs