

Fact Sheet: Phase 7 Model Development

Why is the partnership updating its suite of modeling tools? The Chesapeake Bay Program (CBP) partnership periodically updates its suite of modeling tools to incorporate new science, data, and information to increase accuracy and confidence in the modeled data and results. In addition, the Principals' Staff Committee directed the Modeling Workgroup to conduct a modeling assessment of 2035 climate change impacts. In order to conduct this assessment, updates to the current suite of modeling tools – Phase 6 – are needed. Under the current Phase 7 Model schedule, in 2025, the CBP partnership will consider results of updated methods, techniques, and studies and revisit existing estimated loads due to climate change to determine if any updates to those 2035 load estimates are needed.

In addition to 2035 climate impacts, what other types of updates and new information will be available to inform Phase 7 Model development? Representatives from the Modeling Workgroup and the Chesapeake Bay Program Office (CBPO) modeling team solicited feedback from several CBP partnership groups (e.g., Water Quality Goal Implementation Team (WQGIT); GIT Chairs; and the Modeling Workgroup) on priorities for Phase 7 Model development. Some of these priorities include updating and incorporating new high-resolution land cover and land use data; providing a better assessment of shallow/open water modeling; revising nutrient application calculations; and improving watershed model accuracy by enhanced physical process simulations. Addressing these priorities requires the new Phase 7 version of the models to be developed. Other priorities, such as incorporating co-benefits and developing a spatially-explicit Chesapeake Assessment Scenario Tool (CAST), can occur through the already planned two-year updates of CAST.

When and how will the Phase 7 Model development priorities be decided by the CBP partnership? Over the coming months, the CBPO modeling team, in coordination with the WQGIT and the Modeling Workgroup, will develop a more detailed proposal on Phase 7 Model development to outline what decisions must be made, when they need to be discussed, and by whom.

When will the Phase 7 modeling tools, including the 2035 climate targets and updated planning targets, be available for management application? The CBPO modeling team is proposing that model development occur between now and 2025. The partnership will then have one year – 2026 – to review the suite of modeling tools. The 2035 climate targets and updated planning targets will be available at the end of 2027. The full suite of Phase 7 Modeling tools will be available for management application and tracking the 2035 climate targets at the start of 2028. Going forward the CBP partnership will need to decide how to assess WIP implementation and progress – e.g., continuation of two-year milestones? Another iteration of the WIPs? Those discussions will be initiated within the CBP partnership in the coming months.

Why does the timeline for Phase 7 Model development need to be extended? The CBPO modeling team received a significant amount of feedback from the CBP partnership groups. It is possible to address most, if not all, of the priorities expressed by these groups if more time is allowed for model development. In addition, simultaneously reviewing revised 2035 planning targets, evaluating CBP's performance of the 2025 WIP outcome, and planning for post-2025 and beyond is a lot to ask of the CBP partnership in 2025. Furthermore, while 2025 is the target date for Phase III WIP implementation data, model results won't be available until 2026 further complicating the 2025 assessment period. Since EPA will conduct its assessment of the 2025 WIP outcome in 2026 using the Phase 6 suite of modeling tools, finalizing and applying the Phase 7 models in 2027 for assessing the 2035 climate targets would provide some space between EPA's assessment of the 2025 WIP outcome using the Phase 6 Model.

How does Phase 7 model development impact the two-year updates to CAST? The CBP partnership will continue to update CAST every two years using the Phase 6 suite of modeling tools. The next version – CAST 2021 – is currently being reviewed by the partnership and will be available for management application in the 2022 – 2023 timeframe. CAST 2023 will be available during the 2024 – 2025 timeframe and will be used for EPA's assessment of the 2025 WIP outcome. EPA will complete its assessment of the 2025 WIP outcome in 2026, using the BMP progress data submitted by the jurisdictions on December 1, 2025 that cover the July 1, 2024 – June 30, 2025 reporting period. It should be noted that CAST 2023 will not include the FY22 US Census of Agriculture data or updated high resolution land cover and land use data. That information will be incorporated into Phase 6 CAST 2025 that will be applied through the 2026 – 2027 timeframe. When the

Phase 7 suite of modeling tools are finalized, CAST will be updated and available for management applications starting in 2028.