

# Updating the Models

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# Why are we updating the models again?

- The CBP partnership periodically updates the modeling tools when new science and data becomes available.
- There have been various versions of the models over the years (e.g., Phase 4, Phase 5, Phase 5.3.2, and Phase 6).
- Changes that would require a new model (i.e., Phase 7) are, for example, changes to nutrient processes, changes to inputs prior to 1995 and incorporating new land use data (not as a change product).
- The Phase 7 **modeling system** includes: Watershed, Estuarine, Land use Change, Airshed, CAST, and NEIEN.

# What is driving the Phase 7 Model updates?

- **The PSC approved the following at their December 2020 meeting**
- Continue efforts to improve understanding of the science and refine estimates of pollutant load changes due to 2035 climate change conditions:
  - Develop a better understanding of the BMP responses, including new or other emerging BMPs, to climate change conditions.
  - Compare the current 2025 climate change assumptions with measured climate conditions through 2024.
    - To include: rainfall volume, intensity and distribution; air temperature, hydrology, water temperature, sea level rise, and changes in bay stratification and circulation.
  - Consider the efficacy of using projections from measured trends versus downscaled global climate model data for revised 2035 estimates.
  - Improve understanding and simulation of climate change impacts to open water designated use in shallow waters.

# What is driving the Phase 7 Model updates?

- **The PSC approved the following at their December 2020 meeting, cont'd:**
- In 2025, the 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.

# What is driving the Phase 7 Model updates?

- The Partnership has improved its understanding of Land Use and Land Use Change for 2013 and 2017 with 2021 planned for completion in advance of 2025.
- Several items identified in the CAST21 workplan could not be fully addressed in the 2-year updates and are in the queue for Phase 7.
- Proposed changes to the modeling system as discussed and prioritized in this meeting.
- Proposed changes to the modeling system discussed by other Goal Teams to help advance other Bay Agreement Outcomes.

# Phase 7 updates may raise additional questions

- Do we want CAST to continue? Should it operate at its current scale with improved information? Would further enhancements to CAST, such as a finer (NHD) scale, help partners plan/target implementation beyond 2025?
- Are updates needed to the planning targets?
  - New planning targets would be applicable post-2025. The current Phase III planning targets remain fixed and in place through 2025.
- Would updated planning targets necessitate development of new WIPs?

# A few thoughts to frame our discussions?

Phase 7 presents the partnership with an opportunity to:

- Envision the modeling system for the next decade or so (2025-2035).
- Embrace adaptive management by learning from our past experiences and working to ensure mis-steps are avoided and successes repeated.
- Break away from incremental thinking, explore big new ideas, strengthened by a diversity of perspectives.