



CAST21 Workplan

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Watershed Technical Workgroup Meeting
August 6, 2020



Workplan for CAST21

- Goal: Accommodate new data and methods with CAST21 for changes that have been approved by the Partnership up until COB Sept. 1, 2021
- Outcome: A Partnership approved CAST21 model that uses the best available science, data and information to inform and support our shared restoration efforts and collective decision-making processes, adhering to our principals of adaptive management



Workplan for CAST21

- Key Action: Investigate alternatives to the current methods for forecasting agricultural land uses and animals and propose options for Partnership consideration. Particular attention will be paid to trends in acres of full-season soybeans, double-crops, and idle and fallow lands
- Participating Entities: Agriculture Workgroup, Land Use Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: March, 2021



Workplan for CAST21

- As each key action is considered and signed off by workgroups and the WQGIT, there will be no determination where and to what degree nutrient and sediment loads would be higher or lower than CAST 19.
- Additional key actions may be added to this workplan if the addition is approved by the WQGIT.
- CAST21 will accommodate all key actions approved through the Partnership by COB Sept. 1, 2021 and will be available for review, including loads, Nov. 1, 2021.



Workplan for CAST21

- Timelines are the estimated completion dates (month & year) for the investigating body (e.g., CBP office technical staff) to make final presentations about options for the relevant source workgroups to consider.
- Agreement about what will be included and excluded from CAST21 depends on votes of members of the workgroups and WQGIT.
- Approved data and method changes for CAST21 need to be finalized through the WQGIT by Sept. 1, 2021.



Workplan for CAST21

- Key Action: Investigate use of latest landcover and LiDAR imagery to better define changes in total agriculture areas and crop acres through time as well as all other source categories in the developed sector, forest, mixed open, and wetlands
- Participating Entities: Land Use Workgroup, Agriculture Workgroup, Forestry Workgroup, Urban Stormwater Workgroup, Wetlands Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: August, 2021



Workplan for CAST21

- Key Action: Investigate alternatives for estimating acres of double-crops and propose options for Partnership consideration
- Participating Entities: Agriculture Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: July, 2021



Workplan for CAST21

- Key Action: Consider additions to current methods for “crediting” Nutrient Management on soybeans and propose options
- Participating Entities: Agriculture Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: May, 2021



Workplan for CAST21

- Key Action: Accommodate with CAST21 QA/QC'd historic and current layer population data for Hillendale Farms, Spring Grove, PA.
- Participating Entities: Agriculture Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: May, 2021



Workplan for CAST21

- Key Action: Build in Partnership-approved products of the BMP Verification Ad-Hoc Action Team
- Participating Entities: Relevant source workgroup (Agriculture, Forestry, Urban Stormwater, Wetlands), BMP Verification Ad-Hoc Action Team, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: June, 2021



Workplan for CAST21

- Key Action: Continue with updates to data and methods for the following that typically occur every two years – as well as other proposals agreed-to and approved by the CBP Partnership:
- Participating Entities: Relevant source workgroup (Agriculture, Forestry, Land Use, Stormwater, Wastewater Treatment, Wetlands), BMP Expert Panels, BMP Verification Team, Watershed Technical Workgroup, WQGIT, Jurisdictions, CBPO technical staff
- Timeline: June, 2021



Workplan for CAST21

- Key Action: Continue with updates to data and methods for the following that typically occur every two years:
- New or updated BMPs, their effectiveness values, and implementation costs
- Revised reported BMP history from jurisdictions
- County-level and/or Census zone population, housing, and employment projections
- The number of septic systems and their projections, related to sewer service area boundaries
- MS4 area boundaries
- Zoning



Workplan for CAST21

- Key Action: Continue with updates to data and methods for the following that typically occur every two years:
- State-specific land use data, especially where it relates to land use by agency type
- Construction acres
- Manure nutrient concentrations
- Manure or litter mass produced per animal
- Permitted/Non-permitted animal fractions
- Soil phosphorus data by crop type and county
- AAPFCO for fertilizer sales and use data for farm (crop) and non-farm (urban turfgrass) entities – as well as other supplemental sources of data



Workplan for CAST21

- Key Action: Continue with updates to data and methods for the following that typically occur every two years:
- Crop yields, e.g. bushels per acre
- Harvested forest areas
- USDA-NASS crop yield data
- Biosolid and spray irrigation mass and nutrient concentration applications
- Rapid infiltration basin load data
- Large monitored onsite septic system load data
- CSO connections and pass-through data



BMP Verification Ad-Hoc Action Team Tasks

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BMP Verification Ad-Hoc Action Team Tasks

1) Revisit credit duration

- What is the best available information to determine BMP credit duration?
- What multiple lines of evidence can be used to update BMP-specific credit durations?
 - More up-to-date data
 - Lessons learned during preceding years
 - Best professional judgement for how best to use the evidence



BMP Verification Ad-Hoc Action Team Tasks

2) Explore alternatives to BMP re-verification

- What is the potential for partial credit, or variable credit through time?
- An important component of this exploration should include a primer on the purpose of the watershed model.



BMP Verification Ad-Hoc Action Team Tasks

- 3) Explore lesser-used approaches to BMP verification
 - As outlined in the Partnership's BMP Verification Framework, there are several approaches to verifying BMPs that are not being used to their full potential.



BMP Verification Ad-Hoc Action Team Tasks

- 4) Review recommendations from ongoing BMP verification work being undertaken by the CBP, largely WTWG and source workgroup recommendations
- Timing of updates for jurisdictions' BMP Verification Program Plans (QAPPs)
 - Ensuring transparency in how verification is treated in terms of credit duration
 - Quality requirements of BMP data and QAPPs
 - Back-out and cut-off procedures
 - Incorporating verification costs into CAST



BMP Verification

Issue Addressed by Watershed Technical Workgroup

Timing of Updates for Jurisdictions BMP Verification Program Plans (QAPPs)

- Issue: What works best for the jurisdictions in submitting updates to the QAPPs as part of the annual BMP progress and verification reporting?
- WTWG Action Taken: Updated QAPPs are due with the BMP data Dec. 1 so EPA verification analysis can begin and Bay Program can keep to schedule for finalizing annual progress scenario. EPA will provide final comments on verification analysis within two months of progress scenario completion. Jurisdictions have until Dec. 1 to update historic BMP data and QAPP in response to EPA final comments.



BMP Verification

Issue Addressed by Watershed Technical Workgroup

Ensuring Transparency in How Verification is Treated in Terms of Credit Duration

- Issue: NEIEN error reports are not readily available to broader implementation partners beyond the jurisdictional progress and verification contacts.
- WTWG Action Taken: Validation and error reports are being made available through CAST for the final versions of the Progress scenarios.



BMP Verification

Issue Addressed by Watershed Technical Workgroup

Quality Requirements of BMP Data and QAPPs

- Issue: Requirements of verification program plans BMP data may not be consistently applied across jurisdictions.
- Action Taken: EPA wrote Standard Operating Procedures for the annual BMP review and jurisdictions provided comments.
 - Further review is needed by WTWG about grouped inspection dates



BMP Verification

Issue Addressed by Watershed Technical Workgroup

Back-out and Cut-off Procedures

- Issue: If jurisdictions have data at a scale finer than at the county level, they may be subjected to more cut off.
- WTWG Action Taken: Looked for WTWG member to lead effort at 3/5/20 and 5/7/20 WTWG meetings. Item will be closed at Nov., 2020 WTWG meeting if jurisdictions can't provide alternatives and leadership to revisit back-out and cut-off procedures



BMP Verification

Issue Addressed by Watershed Technical Workgroup

Incorporating Verification Costs into CAST

- Issue: Dependent on jurisdictions supplying verification cost data to CBPO
- Action Taken: CBP office can identify what specific data is needed from the jurisdictions for inclusion with CAST as well as any constraints; Resource intensive for jurisdictions



Schedule for TMDL-Related Scenarios

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18-19 Milestone (CAST17) and 20-21 Milestone (CAST19)

- EPA Milestone evaluations published 7/29/20 at <https://www.epa.gov/chesapeake-bay-tmdl>
 - Both 18-19 Milestones (CAST17) and 20-21 Milestones (CAST19)



Model-Related Schedule

2019 Progress (CAST17)

- Release of “official” 2019 Progress (CAST17) model scenario with the Bay Program Reducing Pollution Indicator (<https://www.chesapeakeprogress.com/clean-water/watershed-implementation-plans>) – expected week of Aug. 10th



Model-Related Schedule 2020 Progress (CAST19)

- ~~• July 31, 2020 — BMP listing, descriptions, and mapping due from jurisdictions for any proposed BMPs that will be submitted for that year's progress assessment that are NOT included in the NEIEN Appendix.~~
- ~~• July 31, 2020 — Requests to modify the NEIEN Schema or Plug-In due~~
- NEIEN Appendix and DET are posted and assumed final unless we hear otherwise before 8/31/20



2020 Progress Scenario Data Needs

- Previous year's data is assumed for the following if no state data is received. Previous year is 2013 for most jurisdictions AND for most of these seven data requests:
 - construction - defaults except VA and WV
 - harvested forest - defaults except VA
 - biosolids - previous year's data will be used
 - ag and urban spray irrigation - previous year's data will be used
 - RIB - previous year's data will be used
 - large monitored septic - previous year's data will be used
 - CSO pass thru factors - previous year's data will be used



Model-Related Schedule

2020 Progress

- September 1, 2020 – Jurisdictions are encouraged to begin submitting their BMP implementation to NEIEN for the progress assessment. Ongoing review of submissions will occur between September and December, with the expectation that December 1 submissions are final.
- December 1, 2020 or – outstanding verification issues from EPA's assessment of 2019 progress BMP data and/or the jurisdiction's BMP Verification Program Plan (QAPP) should be addressed with the BMP data and QAPP submission for 2020 progress.



Model-Related Schedule

2020 Progress

- December 1, 2020 – QA/QC'd final data to be submitted by jurisdictions, including any updates to BMP Verification Program Plans describing new data sources and changes to methods of tracking to CBPO – both wastewater data and non-wastewater BMPs.
 - Wastewater data includes the categories CSO, bio-solids, spray irrigation, large onsite systems, and rapid infiltration.
 - Additional revisions to the jurisdictions' QAPPs may be necessary after December 1 as a result of EPA's review of each jurisdictions 2020 Progress submission.



Model-Related Schedule

2020 Progress

- February 8, 2021 – Final progress run information for progress available to jurisdictions – needed for outside reporting of progress on commitments and to keep results relevant.