



Schedule for TMDL-Related Scenarios

Jeff Sweeney
Environmental Protection Agency
Chesapeake Bay Program Office
sweeney.jeff@epa.gov
410-533-6617

Watershed Technical Workgroup Meeting
January 7, 2021



Model Scenario Schedule

2020 Progress

- The December 10, 2020 – CAST webinar reviewing different ways to check for both validation and logic errors in submitted data + wastewater app; posted to CAST under Scenario Analysis
- December 18, 2020 – Submission period reopened for jurisdictions to make corrections to their data
- December 25, 2020 – NEIEN and CAST validation reports provided to jurisdictions
- January 1, 2021 – NEIEN and CAST validation reports again provided to jurisdictions
 - All jurisdictions' data re-submissions are considered final with the exception of changes prompted by CBPO BMP verification review



Model Scenario Schedule

2020 Progress

- January 8, 2021 – Findings of CBPO verification of BMP and wastewater data (submitted to NEIEN by January 1st) provided to jurisdictions
- January 22, 2021 – Jurisdictions re-submit data and respond to verification comments
- February 8, 2021 – Final verification is completed for jurisdictions that made changes to the original data; progress scenario information available to jurisdictions – needed for outside reporting of progress on commitments and to keep results relevant



BMP Verification 2020 Progress

- Along with QA/QC'd data, updates to BMP Verification Program Plans (QAPPs) describing new data sources and changes to methods of tracking were due December 1
- Outstanding verification issues from EPA's assessment of 2019 progress BMP data and/or the jurisdiction's QAPPs should have been addressed with the BMP data and QAPP submission for 2020 progress
- Additional revisions to the jurisdictions' QAPPs may be necessary as a result of EPA's review of 2020 Progress submissions



CAST21 Workplan

Jeff Sweeney
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sweeney.jeff@epa.gov
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Workplan for CAST21

Task 2

- 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 and double-crops
- Participating Entities: Agriculture Workgroup, Land Use Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: March, 2021



Workplan for CAST21

Task 2 Status Update

- CBPO CAST Team investigating 4+ alternative projection methods for animals and agricultural lands
 - November 19, 2020 AgWG: CBPO presentation on 4 methods of forecasting; seeking feedback
 - Return to AgWG March, 2021 for decision
- Agricultural land forecast are also affected by high-resolution land cover and Cropland Data Layer (CDL)



Workplan for CAST21

Task 2 Status Update

- In July, 2020, USDA-National Agricultural Statistics Service (NASS) personnel examined 2012-2017 data for full-season soybeans and did not identify errors with data, no additional insights
- Double-crop issue is in Task 5



Workplan for CAST21

Task 3

- Key Action: Investigate 2012-2017 Ag Census change for crop types “Cropland in cultivated summer fallow” and “Cropland idle . . . ” and attempt to determine if reported increases are reflective of on-the-ground change. To the extent that information becomes available that demonstrates that census-reported changes are not reflective of real change, explore mechanisms by which model inputs for CAST 2021 might be adjusted . . .
- Participating Entities: Agriculture Workgroup, Land Use Workgroup, Watershed Technical Workgroup, WQGIT, CBPO technical staff
- Timeline: August, 2021



Workplan for CAST21

Task 3 Status Update

- NASS investigation of WV land data, fallow and idle:
 - Changes are in line with historical data
 - No questionnaire changes
 - WV ag land ↑2% from 2012
 - Large ↑ for cropland idle & cropland failed
 - Large ↓ for woodland pastures & permanent pasture
 - No NASS methodology changes since 2012



Workplan for CAST21

Task 3 Status Update

- Presented to AgWG Sept 17, 2020; no new information; no further action
- Possible resolution with landcover data; WV lead



Workplan for CAST21

Task 4

- 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

Task 4 Status Update

- CBPO GIS and CAST Teams discussed w/ NASS use of the Cropland Data Layer (CDL) in the future.
- CDL combined with National Land Cover Database (NLCD) will improve on total agriculture areas (crop and pasture) and improves recent history and forecast of acres of most land use types. This could affect acres of:
 - Soybeans (Task 2)
 - Double-crops (Tasks 2 and 5)
 - Fallow and idle (Task 3)



Workplan for CAST21

Task 4 Status Update

- October 15, 2020 AgWG presentation by USGS and Chesapeake Conservancy; seeking feedback
 - Agricultural Acres @
https://www.chesapeakebay.net/channel_files/40307/agwg_20201013_updated.pdf
 - Mapping & Forecasting Agriculture @
[https://www.chesapeakebay.net/channel_files/40307/forecasting_agriculture_\(1\).pdf](https://www.chesapeakebay.net/channel_files/40307/forecasting_agriculture_(1).pdf)
 - CBP Land Use Classification Scheme 2013–2021 @
https://www.chesapeakebay.net/channel_files/40307/lc_classification_proposedfinal_092420.pdf
- Return to AgWG in January, 2021 for brief review
- February, 2021 for decision



Workplan for CAST21

Task 5

- 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

Task 5 Status Update

- In July, 2020, USDA-National Agricultural Statistics Service (NASS) personnel communicated w/ CBPO CAST Team that we are using data from Agricultural Census appropriately for calculating double-cropped acres.
 - Again, suggested use of looking into the Cropland Data Layer (CDL) with the National Landcover Database for possible improvements.
- This information presented the AgWG October 15
- Calculation for double-crops will remain the same but CDL may be new source of total acres



Workplan for CAST21

Task 6

- 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

Task 6 Status Update

- Currently discussing at AgWG Ad Hoc
 - Outreach to members of the Nutrient Management (NM) Expert Panel and Ag Modeling
- No science provided yet to change approved Expert Panel recommendations



Workplan for CAST21

Task 7

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



Workplan for CAST21

Task 7 Status Update

- CBPO acquired layer population data from facility and checking on the quality
- CBPO to move item forward through presentation to AgWG Ad Hoc about process of accommodating data and potential ramifications of making the change



Workplan for CAST21

Task 8

- Key Action: Build in Partnership-approved products of the BMP Verification Ad-Hoc Action Team as it relates to credit duration
- 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

Task 8 Status Update

- BMP Verification Ad-Hoc Action Team is focused on BMP credit durations and partial credit; next meeting Jan. 14
 - 1) Practices to be addressed by the Forestry Workgroup (recommendation come from FWG to BMP Action Team)
 - Ag Riparian Forest Buffers
 - Exclusion Fencing with Forest Buffer
 - Exclusion Fencing with Narrow Forest Buffer
 - Narrow Forest Buffer
 - Urban Forest Buffers
 - Urban Narrow Forest Buffer



Workplan for CAST21

Task 8 Status Update

2) Practices to be addressed by the Ad Hoc Group

- Animal Waste Management Systems
- Barnyard Runoff Control
- Loafing Lot Management
- Grass Buffers
- Narrow Grass Buffers
- Exclusion Fencing with Grass Buffers
- Exclusion Fencing with Narrow Grass Buffers
- Urban Tree Planting
- Ag Tree Planting



Workplan for CAST21

Task 8 Status Update

- Chain of approval follows 3-stage formal review process outlined in the Framework document under the BMP Review Protocol and includes:
 - 1) Relevant source sector workgroups review scientific basis of recommendation, ensuring all pollutant source loading or BMP pollution reduction mechanisms have been included
 - 2) Watershed Technical Workgroup analyzes technical components of the recommendation
 - 3) WQGIT reviews the process used and the recommendation's consistency



Workplan for CAST21

Task 8 Status Update

- Watershed Technical Workgroup
 - Detailed discussions of “cut-off” and “back-out” began in September, 2020, including presentations by NY and WV, and CBPO discussions with individual jurisdictions
 - These model procedures were part of WQGIT memo to the Management Board



Workplan for CAST21

Task 8 Status Update

- Watershed Technical Workgroup
 - The following will be going to the BMP Verification Team for consideration:
 - Timing of updates for BMP Verification Plans
 - Consistently apply requirements of BMP verification (annual progress data) across jurisdictions.
 - Transparency in how verification is treated in terms of credit duration = NEIEN error reports



Workplan for CAST21

Task 8 Status Update

- Cutoff – WTWG members should continue to present examples from progress scenarios
 - Cutoff w/ animals (Animal Units, systems)
 - States should be providing county:land-river segment splits
 - Grant Guidance expectation is that jurisdictions report BMPs at the finest scale and protect landowner privacy



Workplan for CAST21

Task 8 Status Update

- Backout – Joint Land Use and Forestry Workgroup meeting on December 2, 2020 w/ one topic “Verifying presence/absence of tree plantings”
 - Groups are looking at aerial imagery of riparian buffers with known planting dates and other information to decipher when and how they appear – for extension of backout of tree-related BMPs



Workplan for CAST21

Task 1

- 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, Urban Stormwater, Wastewater Treatment, Wetlands), BMP Expert Panels, BMP Verification Ad-Hoc Action Team, Watershed Technical Workgroup, WQGIT, Jurisdictions, CBPO technical staff
- Timeline (Findings Presented to Lead Participating Entity for Decision):
June, 2021



Workplan for CAST21

Task 1 Status Update

- 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 – current Expert Panels and ad-hoc groups:
 - Urban and non-urban stream restoration
 - Animal mortality
 - Oysters
 - Recommendations, reports approved by Sept. 1, 2021 in CAST21
 - Revised reported BMP history from jurisdictions – final QA/QC data due from jurisdictions Dec. 1, 2021



Workplan for CAST21

Task 1 Status Update

- Key Action: Continue with updates to data and methods for the following that typically occur every two years:
 - County-level and/or Census zone population, housing, and employment projections – Jurisdictions + CBPO GIS Team
 - The number of septic systems and their projections, related to sewer service area boundaries – Jurisdictions + CBPO GIS Team
 - MS4 area boundaries – Jurisdictions + CBPO GIS Team
 - Zoning – Jurisdictions + CBPO GIS Team
- Data and methods approved by Sept. 1, 2021 in CAST21



Workplan for CAST21

Task 1 Status Update

- 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 – Jurisdictions + CBPO GIS Team
 - Construction acres – Jurisdictions + CAST Team, due 8/31/21
 - Manure nutrient concentrations – Jurisdictions + CAST Team, 8/31/21
 - Manure or litter mass produced per animal – Jurisdictions, due 8/31/21
 - Permitted/Non-permitted animal fractions – Jurisdictions, due 8/31/21
 - Soil phosphorus data by crop type and county – Jurisdictions + CBPO Modeling Team
 - AAPFCO for fertilizer sales and use data for farm (crop) and non-farm (urban turfgrass) entities – Jurisdictions + CBPO CAST Team



Workplan for CAST21

Task 1 Status Update

- Key Action: Continue with updates to data and methods for the following that typically occur every two years:
 - USDA-NASS crop yield data, e.g. bushels per acres – completed w/ CAST19
 - Harvested forest areas – due Aug. 31, 2021
 - Biosolid and spray irrigation mass and nutrient concentration applications – Dec. 1, 2021
 - Rapid infiltration basin load data – Dec. 1, 2021
 - Large monitored onsite septic system load data – Dec. 1, 2021
 - CSO connections and pass-through data – Dec. 1, 2021



Additional Requests from Other Workgroups

- WQGIT, WTWG, etc. (DC DOEE)
 - Suggesting two months for jurisdictions to evaluate potential issues; sufficient time for the states to compare the outputs of both models together
- Want to make sure that every [work]group that has data due in August, for example, has initiated the data effort to collect the necessary data several months in advance so that they can accomplish the task on time.



Additional Requests from Other Workgroups

- Wastewater Treatment and Land Use Workgroups (DE DNREC)
 - The number of septic systems and their projections, related to sewer service area boundaries
 - DE monitoring/updating septic permitting databases and should get better/more accurate data for the program
- Land Use Workgroup (Chesapeake Conservation Partnership)
 - Strengthen or expand Land Policy BMPs
 - Include growth and land-use trends in addition to current zoning at least to be able to compare the growth trends to current zoning as we proceed



Additional Requests from AgWG

- AgWG Ad Hoc meeting monthly about additional concerns with CAST data or methods
- Unlikely these will be resolved by September 1, 2021, the deadline for approved changes to CAST21



Additional Requests from AgWG

- **Animal Data – Improve animal population estimates**
 - Explore other estimating options: Dairy, Equine, Beef
 - Accounting for partial CBW counties.
- **Crop Production Data – Improve annual crop estimates**
 - Annual Implementation Reports (AIR-MD)
 - USDA-FSA crop reporting
 - National Commodity Crop Productivity Index (NRCS)
- **Nutrient Assumptions - Fertilizer Sales and Use**
Data: engaging state chemists
 - State & industry partners work w/ state chemist to improve submission to AAPFCO



Additional Requests from AgWG

- Dairy Precision Feeding
- Heavy Use Area Protection
- “Winter Crop” Category
- Manure Transport/ Manure Treatment Technologies