



CAST21 Workplan

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Watershed Technical Workgroup Meeting
November 5, 2020



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

- 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
- CBPO CAST Team investigating 4+ alternative projection methods for animals and agricultural lands
 - Informational briefings will be provided to the AgWG starting in November, 2020
 - Agricultural land forecast are also affected by high-resolution land cover and Cropland Data Layer (CDL)



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



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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 methodology with the NASS data changes since 2012
- WV presented questions to the AgWG Sept.17, “Are reported increases reflective of on the ground change?”
- AgWG to decide how to proceed



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



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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)



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Task 4 Status Update

- Determinations of agriculture acres presented to the AgWG October 15
 - 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



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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



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Task 5 Status Update

- In July, 2020, USDA-National Agricultural Statistics Service (NASS) personnel communicated w/ the CBPO CAST Team that we were using data from the Census of Agriculture 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 10/15/20 to decide how to move forward.



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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



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Task 6 Status Update

- Idea listed for the AgWG who, along with the CAST Ad-Hoc group will be discussing further at Nov. and Dec. meetings.
- There has been outreach to members of the Nutrient Management Expert Panel



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



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Task 7 Status Update

- Acquired layer population data from facility and checking on the quality
- CBPO CAST Team running model assessments of the benefits of the Manure Treatment Technology at Hillandale



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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



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Task 8 Status Update

- BMP Verification Ad-Hoc Action Team is focused on BMP credit durations and partial credit
 - Next meeting is Thursday, Nov. 12th
- Watershed Technical Workgroup
 - Ongoing discussions of “cut-off” and “back-out”



Workplan for CAST21

Task 8 Status Update

- Watershed Technical Workgroup (continued)
 - The following will be going to the BMP Verification Team for approval:
 - 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



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Task 8 Status Update

- WTWG has had ongoing discussion of cutoff and backout, including presentations by NY and WV, and CBPO discussion with individual jurisdictions
- 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



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Task 8 Status Update

- Backout – Looking to Forestry Workgroup and GIS Team to provide estimate of time between planting and detection. This applies to:
 - Riparian Forest Buffers
 - Tree Plantings – ag and urban
 - Forest Plantings



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
 - Impervious cover removal and floodplain restoration
 - 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



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Additional Tasks Identified by WQGIT Workgroups (Partial)

Agriculture Workgroup + CAST Ad-Hoc will be addressing for CAST21 (higher priorities):

- 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)



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Additional Tasks Identified by WQGIT Workgroups (Partial)

- **Nutrient Assumptions - Fertilizer Sales and Use Data:** engaging state chemists
 - State & industry partners work w/ state chemist to improve submission to AAPFCO
- **Nutrient Assumptions – Nutrient Management**
 - Request inclusion of soybeans and small grains as “manure eligible” to better reflect real-world management and relieve pasture of excess manure applications.
 - States request an adjustment to nutrient spread curves for manure based on updated understanding of agronomic applications of manure.



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Additional Tasks Identified by WQGIT Workgroups

- WQGIT, WTWG, etc. (DC DOEE)
 - Suggesting two months for jurisdictions to use both CAST19 and CAST21 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.



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Additional Tasks Identified by WQGIT 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
- Prioritize



Schedule for TMDL-Related Scenarios

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Model-Related Schedule

2020 Progress

- Ongoing review of submissions will occur between September and December, with the expectation that December 1 data submissions are QA/QC'd and final.



Model-Related Schedule

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 the following data requests:
 - Deadline has passed
 - Construction - defaults except DC, DE, PA, VA and WV
 - Harvested forest - defaults except VA and WV
 - CAFO/AFO animal splits



Model-Related Schedule

2020 Progress Scenario Data Needs

- Due Dec. 1
 - Biosolids
 - Ag and Urban Spray Irrigation
 - Rapid Infiltration Basins
 - Large Monitored Septic Systems
 - CSO Pass-Through Factors



Model-Related Schedule

2020 Progress

Point Source Data Submission app

- Along with facility data, the information includes the categories CSO, spray irrigation, large onsite systems, and rapid infiltration which continue to be submitted via spreadsheets using the templates provided at (<https://archive.chesapeakebay.net/VT/> Filename: WWTP_CSO_Biosolid_Irrigation_LargeOnsite_RIB_In put_Templates2016).



Model-Related Schedule

2020 Progress

- Federal agencies should have submitted their BMP data to states (NEIEN node) by October 1, 2020 so the states can incorporate the federal data into their overall submission.
 - New templates are posted to CAST in the federal agency section.
 - Federal agencies should check with states to ensure that those are the preferred templates.



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.



Model-Related Schedule

2020 Progress

- 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.
- Additional revisions to the jurisdictions' QAPPs may be necessary after December 1 as a result of EPA's review of each jurisdiction's 2020 Progress submissions.



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.