



# Schedule for 2021 Progress Scenario

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Watershed Technical Workgroup Meeting  
April 1, 2021



# Model-Related Schedule

## 2021 Progress Scenario

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- Due June 1, 2021
  - Completed review – by CBP sector workgroup and WTWG – of jurisdictions' unique resource improvement practices for inclusion in the NEIEN Appendix



# Model-Related Schedule

## 2021 Progress Scenario

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- Due July 31, 2021
  - Requests to modify NEIEN Schema or Plug-In





# Model-Related Schedule

## 2021 Progress Scenario

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- Due July 31, 2021
  - 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
    - New or updated BMPs, their effectiveness values, and implementation costs currently in Expert Panel
      - Animal mortality
      - Oysters
      - Non-urban stream restoration



# Model-Related Schedule

## 2021 Progress Scenario

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- Due Aug. 31, 2021
  - Approval of changes to the NEIEN Appendix by the WTWG
  - NEIEN Appendix and DET are posted and final for 2021 Progress scenario



# Model-Related Schedule

## 2021 Progress Scenario

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- Due Aug. 31, 2021
  - Construction acres; Jurisdictions + CAST Team
  - Harvested forest areas; Jurisdictions
  - Permitted/Non-permitted animal fractions; Jurisdictions
  - Animal fraction of county in land-river segments; Jurisdictions



# Model-Related Schedule

## 2021 Progress Scenario

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- Due Aug. 31, 2021
  - Manure nutrient concentrations (last three years); Jurisdictions
  - Manure or litter mass produced per animal (last three years); Jurisdictions
  - Animals per Animal Unit; Jurisdictions
  - USDA-NASS annual poultry sales; CAST Team



# Model-Related Schedule

## 2021 Progress Scenario

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- Due w/ land cover-land use updates
  - County-level and/or Census zone population, housing, and employment projections; Jurisdictions + CBPO GIS Team
  - MS4 area boundaries; Jurisdictions + CBPO GIS Team
  - Zoning; Jurisdictions + CBPO GIS Team





# Model-Related Schedule

## 2021 Progress Scenario

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- Due w/ land cover-land use updates
  - State-specific land use data, especially where it relates to land use by agency type; Jurisdictions + CBPO GIS Team
  - Septic system numbers and projections, related to sewer service area boundaries; Jurisdictions + CBPO GIS Team



# Model-Related Schedule

## 2021 Progress Scenario

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- Due w/ agricultural sector updates
  - USDA-NASS crop yield data, e.g. bushels per acres; CBPO CAST Team
  - AAPFCO for fertilizer sales and use data for farm (crop) and non-farm (urban turfgrass) entities; Jurisdiction fertilizer data due June 30, 2021; Jurisdictions + CBPO CAST Team
  - Soil phosphorus data by crop type and county; Jurisdictions + CBPO Modeling Team



# Model-Related Schedule

## 2021 Progress Scenario

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- Sept. 1, 2021
  - 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 Dec. 1, 2021 data submissions are QA/QC'd and final



# Model-Related Schedule

## 2021 Progress Scenario

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- Oct. 1, 2021
  - Federal agencies submit their data jurisdictions so they can incorporate federal submissions w/ overall submission





# Model-Related Schedule

## 2021 Progress Scenario

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- Due Dec. 1, 2021
  - Final QA/QC'd 2021 Progress scenario BMP data including revisions to reported BMP history from jurisdictions



# Model-Related Schedule

## 2021 Progress Scenario

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- Due Dec. 1, 2021
  - Wastewater data
    - Significant, non-significant, municipal, industrial – flows and concentrations, loads
  - CSO connections and pass-through data
  - Location, year, mass or volume, concentrations:
    - Biosolids
    - Spray irrigation (agriculture and urban)
    - Rapid infiltration basins
    - Large monitored onsite septic systems



# Model-Related Schedule

## 2021 Progress Scenario

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- Due Dec. 1, 2021
  - Updates to BMP Verification Program Plans (QAPPs) describing new data sources and changes to methods of tracking – both wastewater data and non-wastewater BMPs
  - Outstanding verification issues from EPA's assessment of 2020 Progress data and/or the jurisdiction's QAPPs to be addressed with 2021 Progress BMP data and QAPP submission



# Model-Related Schedule

## 2021 Progress Scenario

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- Dec. 1 – Jan. 31, 2022
  - Additional revisions to the jurisdictions' QAPPs may be necessary after Dec. 1 as a result of EPA's review of each jurisdiction's 2021 Progress submissions





# Model-Related Schedule

## 2021 Progress Scenario

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- Mid-December, 2021
  - Submission period reopened for jurisdictions to make corrections to their data
- Early-January, 2022
  - All jurisdictions' data re-submissions are considered final with the exception of changes prompted by CBPO BMP verification review



# Model-Related Schedule

## 2021 Progress Scenario

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- Mid-January, 2022
  - Findings of CBPO verification of BMP and wastewater data provided to jurisdictions
- January 31, 2022
  - VA wastewater data



# Model-Related Schedule

## 2021 Progress Scenario

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- February 7, 2022
  - Deadline for jurisdictions to address all outstanding data issues and comments on their BMP Verification Program Plans from EPA (including previous years) to ensure full credit of quality data
  - 2021 Progress scenario complete w/ the exception of final BMP and wastewater data verification



# Model-Related Schedule

## 2021 Progress Scenario

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- February – April, 2022
  - Final CBPO verification assessment and publication of Reducing Pollution Indicator





# Cutoff CBP Watershed Model

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April 1, 2021



# Cutoff

## CBP Watershed Model

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- Most recent detailed discussions of cutoff were at the WTWG September and October meetings



# Cutoff

## CBP Watershed Model

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- “Cutoff” (aka “excess” in CAST’s “BMP submitted versus credited” report) identifies that the implementation level of a BMP within the submitted spatial scale of the BMP – exceeds a 100% implementation level.
  - For example, the acres of BMP submitted or planned in a county exceeds the land use acres in that county that are available for the BMP.





# Cutoff

## CBP Watershed Model

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- For a progress scenario, cutoff is typically due to:
  - Over-reporting of BMPs
  - Inaccuracies in the land use acres or animal populations or systems that the BMPs apply to
    - There will be improvements in land use/land cover with new high-resolution data, more so for non-agricultural land uses





# Cutoff Land BMPs

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Annual:Cumulative	Unit	AmountSubmitted	AmountBackedOut	AmountBackedOut (%)	AmountCutOff	AmountCutOff
Annual	Acres	10,259,744	0	0.0%	346,474	3.4%
Annual	Systems	10,202	0	0.0%	108	1.1%
Cumulative	Acres	5,977,272	247,184	4.1%	147,464	2.5%
Cumulative	Feet	1,414,485	0	0.0%	267	0.0%
Cumulative	Systems	83,079	48,247	58.1%	236	0.3%



# Cutoff Land BMPs

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Cumulative	Feet	1,414,485	0	0.0%	267	0.0%
Cumulative	Systems	83,079	48,247	58.1%	236	0.3%

- For the annual BMP acres, of the 346K acres cut off:
  - 19% Tillage Management-Low Residue
  - 18% Tillage Management-Conservation
  - 17% Tillage Management-Continuous High Residue
  - 13% Nutrient Management Core N
  - 13% Nutrient Management Core P
  - = 79% from these five practices



# Cutoff Land BMPs

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Cumulative	Feet	1,414,485	0	0.0%	267	0.0%
Cumulative	Systems	83,079	48,247	58.1%	236	0.3%

- For the cumulative BMP acres, of the 147K acres cut off:
  - 69% are Conservation Plans
  - 17% are Wetponds & Wetlands
  - = 86% of total cutoff



# Cutoff Animal BMPs

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StateAbbreviation	BMP	Unit	AnimalName	AmountSubmitted	AmountCutOff	AmountCutOff (%)	
AllStates	AllBMPs	Animal Units	AllAnimalTypes	9,430,665	3,900,907	41%	
StateAbbreviation	BMP	Unit	AnimalName	AmountSubmitted	AmountCutOff	AmountCutOff (%)	
MD	Mortality Composters	Animal Units	broilers	825,361	757,186	19%	of total cutoff
MD	Animal Waste Management System	Animal Units	broilers	2,037,534	675,022	17%	of total cutoff
DE	Mortality Composters	Animal Units	broilers	688,480	642,457	16%	of total cutoff
VA	Animal Waste Management System	Animal Units	broilers	1,372,689	557,465	14%	of total cutoff
						67%	of total cutoff



# Cutoff

## Manure Treatment BMPs

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GeographyFrom	GeographyTo	BMP	Unit	AnimalName	AmountSubmitted	AmountCutOff	AmountCutOff (%)	
All	All	Manure Transport	dry tons	AllAnimalTypes	176,416	39,183	22%	
GeographyFrom	GeographyTo	BMP	Unit	AnimalName	AmountSubmitted	AmountCutOff	AmountCutOff (%)	
Adams, PA	Carroll, MD	Manure Transport	dry tons	dairy	16,141	10,278	26% of total cutoff	
St. Marys, MD		Manure Transport	dry tons	broilers	10,178	10,118	26% of total cutoff	
Adams, PA	Carroll, MD	Manure Transport	dry tons	dairy	12,011	7,649	20% of total cutoff	
Frederick, MD	Washington, MD	Manure Transport	dry tons	broilers	2,727	2,719	7% of total cutoff	
							79% of total cutoff	





# Cutoff

## CBP Watershed Model

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From the WTWG October, 2020 meeting, listing of units and percent of cutoff for the 2019 Progress scenario by jurisdiction for BMPs with the most cutoff (see material for April, 2021 meeting):

- 2019 Agricultural BMPs Cutoff – LRseg in CBWS
- 2019 Agricultural BMPs Cutoff by State – LRseg in CBWS
- 2019 Animal Unit BMPs Cutoff – entire CB watershed
- 2019 Animal Unit BMPs Cutoff by State
- 2019 Urban and Other BMPs Cutoff – entire CB watershed
- 2019 Urban and Other BMPs Cutoff by State



# Cutoff

## CBP Watershed Model

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- Greatest degree of cutoff, generally, are BMPs measured in Animal Units + Manure Transport
  - Mortality Composters
  - Animal Waste Management Systems
- Others
  - Tillage Management
  - Nutrient Application Management
  - Erosion & Sediment Control
  - Septic BMPs



# Cutoff

## Possible Solutions

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- Animal Unit BMP cutoff
  - Due Aug. 31, 2021
    - Permitted/Non-permitted animal fractions;  
Jurisdictions
    - Animal fraction of county in land-river segments;  
Jurisdictions
  - Ensure BMPs are reported correctly as CBWSOnly or not
  - Alternatively, report BMPs for the entire county, including the portion outside the CB watershed and model will proportionally distribute



# Cutoff

## Possible Solutions

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- Manure transport cutoff
  - Transporting more tons than are generated by the animal type in the county
  - Due Aug. 31, 2021
    - Manure or litter mass produced per animal (last three years); Jurisdictions
  - Ensure wet versus dry
    - Dry is with “0” moisture content, not dry poultry litter versus wet cattle manure



# Cutoff

## Possible Solutions

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- High-resolution landcover-land use may help with current inaccuracies in the land use acres
- Revisions to sewer boundaries + accurate population counts could help with septic system count
- On-the-ground BMP verification
- Introduce more local data





# Cutoff

## Possible Solutions

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### CBP Grant Guidance Attachment 6: Chesapeake Bay Program Wastewater Facility and BMP Implementation Data Submission Specifications and Requirements

*"Jurisdictions are to report BMPs as they occur on the landscape at the most site-specific scale that conforms with legal and programmatic constraints, and at a scale compatible to data input for the Chesapeake Bay Program partnership modeling tools."*



# Cutoff Discussion

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- “Are there circumstances where a jurisdiction could provide information so that cutoff procedures could be ignored for specific BMPs?”
- Other discussion