



# CAST Planning

Updates as of February 2024

# CAST Timeline

\*contingent on funding and staff availability

2022 2022 2023 2024 2025 2026 2027 2028 2028

Today

Spatially Explicit Maps and Planning

Establish Contract and Subcontracts

Feb 4 Mar 26



Data Center and Contractor develop mapping display within CAST

Apr 2 Dec 29

Evaluation of additional spatial functionality needs

Jan 3 Apr 3

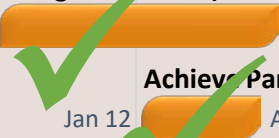
Development of additional functionality

Apr 4 Aug 27

BMP Reporting Transparency

Design Solutions (Multiple Options)

May 9 Aug 31



Achieve Partnership Consensus on Solution

Jan 12 Aug 1



Reengineer the BMP reporting process

Sep 1 Aug 31

CAST-General

Multiple user interface updates

Nov 1



Documentation of CAST

Jan 3 Aug 31

EcoSystem Services & Co-Benefits

EcoHealth Relationship Browser

Jan 4 Aug 31



# Primary Needs

- BMP Reporting and Rewrite
  - Time consuming for the Data Center
  - No option to miss the deadline of August 2024 because of the states' deadlines in their grant guidance
  - Will need to have review and testing by the jurisdictions
- Spatially Explicit CAST
  - 2024 objective is to prototype part 1: A BayFAST type workflow with information for user
  - 2025 and beyond, (a) address how to store GIS data files, not through UI add of points for BMPs; and (b) output, reports.
  - Drexel has the backend methods and approach
  - Data Center will undertake the UI
    - A mapping development team member would be beneficial to help with this.
    - This person could be a **new hire or training** for the existing Development Team staff

# Ongoing Activities

# Ongoing Program and Partnership Support

- Post 2025 base conditions for Phase 6
- Conduct analysis to support Phase 7 model development by working with the Dynamic Watershed Modeling Team and the Agriculture Modeling Team members. This includes modifying Phase 6 in anticipation of Phase 7
- Support annual progress assessment toward meeting the 2010 Bay TMDL for water quality; includes NEIEN support and the Point Source Data Application
- Provide CAST support to users
  - Create CAST monthly newsletter and monthly webinars, including recruiting guest speakers and promoting the webinars
  - Create features in response to users and the partnership members
- Create data products and analyses including data tables, graphs, and maps for users
- Interface between states and localities using sound data to find areas of agreement where there is ambiguity about implementation and load estimates. Build consensus about resolving those ambiguities within the Partnership structure.
- Participate in meetings as requested, and we are requested frequently
- Maintain development environment for CAST to prototype requirement changes for the partnership
- Data Center supports all CAST activities

# 2024 Planned Phase 7 Model Development Support

- USDA's 2022 Agricultural Census data will be released in February 2024. Data compilation and processing (Joseph Delesantro and Jessica Rigelman)
- Determine with the partnership the calculation of:
  - Federal harvested forest land acres so federal agencies can get credit for the forest harvesting practice BMP
  - Federal construction land acres so federal agencies can get credit for the erosion and sediment control BMPs
  - Stream miles, especially D.C. where there was a significant underestimate
  - Nitrogen fixation process including adding a maximum limit if process remains the same
- Harvested forest
  - State reported harvested forest acres are the permitted acres in the year the permit is issued, not the years the forests are harvested. Those acres perhaps should persist for three years post permit issuance, per Peter Claggett. Perhaps the loading rate accounts for this?
  - Reevaluate the default amount used to determine acres when states do not submit the acres
- Point source
  - Wastewater load in non-physical land river segments should not be included in the stream bed and bank nonpoint source load calculations. The LA and WLA are separate allocations attributed to source generation.
  - Wastewater tidal flags should have the delivery factor of 1
  - Drinking water discharges (i.e.: sediment) to be evaluated by the Wastewater Treatment Workgroup

2024  
Planned  
Phase 7  
Model  
Development  
Support—  
*Continued*

- All animal calculations and source data should be reviewed
  - Source of animal manure data, i.e.: Hillandale
  - Animal systems to animal unit calculations should be reviewed
  - Sales vs. inventory numbers may not be accounted for correctly in all animal manure-related calculations
- Stream to river factors for 14365754 per emails with Dave Montali and Isabella Bertini
- Inorganic fertilizer data source. The Fertilizer Expert Group agreed to acquire state data in a timelier fashion. However, there were outstanding questions about data source and methodology that should be explored in Phase 7 development (an emphasis of MDA).
- Evaluate the differences in loads among counties and the varying load reduction capacity that can make a few counties drivers for the entire state (VADEQ request from looking at Northampton County)
- The trend between increasing implementation and increasing loads is problematic since it implies that there are not enough BMPs to decrease the loads. MDA requested assistance with understanding and explaining this. A fact sheet on increasing inputs and how business-as-usual BMPs will not address both the expected load and the increasing nutrient inputs.
- BMP expert panels. Few are anticipated. However, they would not go into CAST until there is a new release, presumably Phase 7.

# 2021 to 2023 Phase 7 Model Development Support

- Data development
  - Published peer reviewed, downscaled input data at NHD scale on USGS's ScienceBase, (Olivia D. and Andy F.)
  - Provided downscaled data to Gopal and Isabella for developing calCAST (Jessica R.)
- AMT support
  - Creating specialized scenarios to evaluate CAST methods (Jessica R.)
    - Crop yield (e.g.: bushels per acre)
    - Nutrient management BMP
    - Animal numbers, including different data from Hillandale
    - Nutrient applications using the Phase 5.3.2 method
  - Providing presentations and support on BMPs and eligible land uses (Helen G.)
- Point source data (Jessica R.)
  - Refining QA/QC process in the Point Source App
  - Detecting inaccurate records and providing recommendations for improvements for jurisdictions to correct those data, especially where there are large swings in loads
- Fertilizer data support (Olivia D., Helen G., and Jessica R.)
  - Comparisons and analyses
  - Communication with AAPFCO and jurisdictions about data differences
  - Importing original AAPFCO data (2013-2016)
  - Working with Integrated Analysis Team on communication pieces