Follow Up Actions and Decisions from 12/16 MB Meeting

MB approved path forward for PSC Decision 3:

The MB charges the WQ GIT to work with other partnership groups as appropriate to:

3) Work with the Watershed Technical Workgroup and others as appropriate in the development of a policy for the partnership regarding safeguards, triggers, and protocols to prevent future data analysis variations and how they are applied. (Addresses PSC 8/29/22 Decision #3)

August 29 PSC Action & Decision #3: Narrative Overview & Purpose

- **Decision**: The partnership will **update the process for incorporating data into CAST <u>to include additional safeguards to prevent data analysis errors</u>** and **<u>to assess reasonability of modeling results after CBP protocols are applied</u>. [underline added]**

- **Action**: The Management Board will determine the appropriate existing GIT and/or workgroup, to develop proposed solutions including additional safeguards to prevent data analysis errors and to assess reasonability of modeling results after CBP protocols are applied **WQGIT → WTWG, STAR, STAC and other WG's as needed**

- **Break Charge into two parts**: PRE (Track 1) and POST data processing (Track 2)
  - **<u>Pre/Track 1</u>**: Safeguards and protocols to prevent and protect against data input errors
  - **<u>Post/Track 2</u>**: A process/protocols to assess reasonability ("after protocols are applied" means "when we see results")

August 29 PSC Action & Decision #3: Narrative Overview & Purpose

Decisions Apply to Phase 6:

- **Process steps and timeline for resolving this PSC decision item in time for CAST release and review**

  Timeline: Recommendations made to WQGIT- June 2023

  Track 1: Vigilance and protection against potential errors in data inputs: QA and SOP frameworks in place for CAST Bay Program data input processing

  Track 2: Scoping a proposed process for identifying and addressing "illogical" results after data updates occur- CAST Bay Program partner data review

  WTWG recommendations June 2023→ WQGIT approval→ MB approval →September 2023

August 29 PSC Action & Decision #3: Narrative Overview & Purpose

Outline Of Steps:

- **Track 1: Vigilance and protection against potential errors in data inputs: QA & SOP frameworks for data input processing**
    a. Inventory overall existing modeling inputs and key inputs/areas of focus in our Bay Program QA framework
    b. Identify weak spots in key data inputs – focus there and acknowledge the existing procedures/documentation elsewhere
    c. Determine appropriate staff/WG to address the QA/QC procedures/processing for these inputs
    d. Appropriate staff/groups develop QA/QC procedures to address identified weaknesses
    e. Procedures approved by key WG's, WQGIT, MB for CAST model input review

- **Track 2: Scoping a process for identifying and addressing "illogical" results after data updates occur**
    a. Identify and define key terms: ex. "reasonable", "illogical", "real on the ground conditions"
    b. Determine appropriate staff/WG to develop criteria or a process for the QA of model results
    c. Appropriate staff/WG to develop criteria or a process for the QA of model results
    d. Procedures approved by key WG's, WQGIT, MB for CAST model results review

Summary: Suggested Steps for Completion

- Divide the PSC Decision 3 Charge into 2 main objectives- Track 1 and Track 2
- Timeline for Completion: WTWG- June 2023 → WQGIT→MB September 2023
  - **Feedback: Process, Timeline and Steps- February 2023****
  - **Assign tasks to ensure we meet the deadline:** Feb/March 2023

Track 1	Track 2
Inventory of CBP QA/QC documentation	Identify and define key evaluative terms
Identify areas of weakness in documentation for key inputs	Identify appropriate groups to develop parameters
Identify appropriate groups to address weaknesses	Develop parameters for determining validity of results
Develop additional QA/QC protocols	
Approval by WTWG- June 23→ WQGIT	Approval by WTWG- June 23→ WQGIT

- Summarize Documentation- Track 1 model input QA protocols as well as Track 2 model results reasonability procedure on the CAST and CBP websites

**Feedback- please within one week via email- to Jackie, Cassie, or Ruth

Step 1 of Track 1: Data Input Quality Control Quality Assurance Inventory- (posted on the calendar page)

1. **CBPO Quality Assurance Manual Final 4-8-20:** https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/CBPO_Quality_Manual_Final_08April2020.pdf
   - **Describes general quality assurance requirements for all data collection within Bay Program Framework**

2. **Nonpoint Source Data Analysis Quality Assurance Program Plan- revised 11-22**
   - **Intended for CBP grantees who receive, process, and enter data into CAST**

3. **Phase 6 Model Documentation- Part 3 Terrestrial Inputs:** https://cast.chesapeakebay.net/Documentation/ModelDocumentation
   - **Describes in detail the methodology and processes for applying data inputs in the model**
   - **Key Terrestrial inputs** – atmospheric deposition, legume fixation, fertilizer, manure, biosolids, and residual soil nutrients

4. **Additional QA/QC Documents that deal specifically with the submission and verification of BMP data to the CBP for annual progress**

Additional Issues for consideration:

- **Who reviews existing documentation?**
- **For what inputs? What criteria will be used to determine "weak spots"-** suggested by Cassie- **the QA/QC process for inputs** that are identified as weak spots will be developed using existing Chesapeake Bay Program Office Quality System framework (pg. 6) **- feedback****
- **Jamboard Input Document-** Track 1, 2, Who, Timeline- Posted to calendar page for reference

**Feedback- please within one week via email- to Jackie, Cassie, or Ruth

Chesapeake Bay Program Office Quality System: Framework pg.6

2.2 MODELING PROGRAMS: The CBPO Quality System covers the environmental models and related decision-making support tools developed and used by the CBP Partnership.

- The quality and transparency of each model component is assured at various stages of development.
- Input data must be of known quality; model codes are tested and documented in permanent records; models are calibrated, and the output verified.
- All modeling activities, assumptions and management applications are subject to scientific, independent external peer reviews, and can be found on the CBP Modeling Team website.

Examples of CBP model protocols and assessments are contained in the following documents:

- Airshed Model – estimates nitrogen deposited by vehicles, power plants etc.
- Land Use Change Model – predicts impact of urban pollution and development on sewer and septic systems
- Phase 6 Watershed Model – estimates nitrogen, phosphorus, and sediment reaching the Chesapeake Bay
- Estuary Model – examines effects of pollution load on water quality