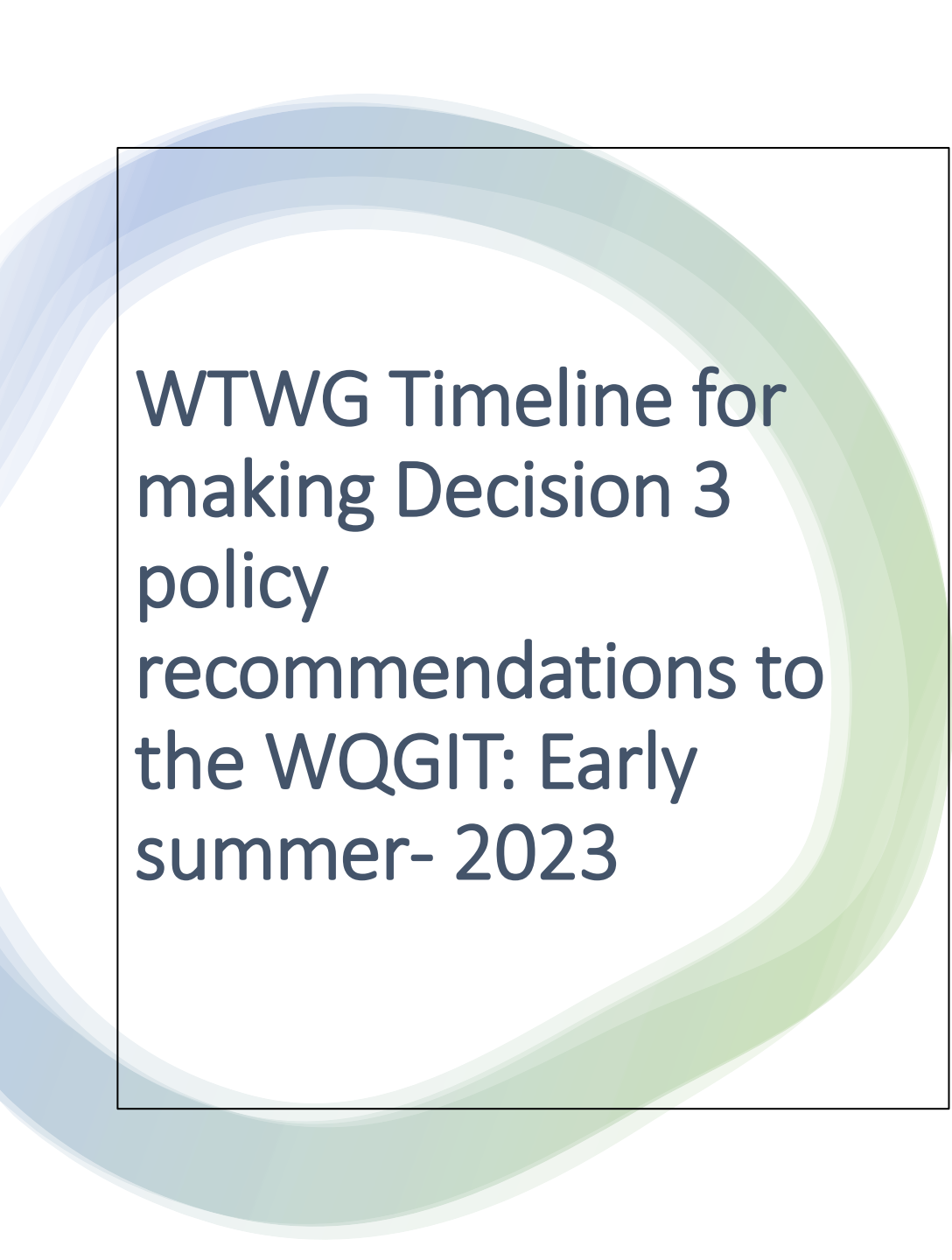


# Follow Up Actions and Decisions from 12/16 MB Meeting

## **PSC Decision 3 was approved:**

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)



## WTWG Timeline for making Decision 3 policy recommendations to the WQGIT: Early summer- 2023

- The Watershed Technical Workgroup will prioritize fulfilling the charge from the MB over the next several months- starting with discussion on Decision 3 at the Feb WTWG meeting.

**\*\*Please review the Decision 3 Jamboard summary- from the Special CAST meeting on 10/19/22 (posted to the calendar page and in the following slides) and be prepared for a “next steps” discussion on the suggestions presented at our next meeting**

# PSC Decision 3:

Refine the process to include additional safeguards to prevent data analysis variations and to assess reasonability of modeling results after CBP protocols are applied.

## CHARGE CONSIDERATIONS (PART ONE)

Public notification of changes in CAST should be made very clear and built into the overarching process.

Provide time in the CAST update process (2-3 months) after input of new data under partnership approved protocols to examine model results.

I don't think that you can predefine illogical, unreasonable....(you know it when you see it) but the oversight group could first decide if they agree with the illogical claim

If the change results are illogical, the process should afford time to reconsider. If illogical can't be resolved, don't change.

There should be boundaries on what is reviewed and what is not. Whichever group is selected may not have expertise in every aspects of the model and data inputs.

Establish data acceptability criteria.

Establish a standard for acceptable data quality...85% +/- 10% MOE

is the charge for only developing the process or does it include signing off on the developed process

Consider having the WQCIT review and approve the QAPP for data management to have oversight of the process.

Agree on data and information that can be used to resolve a result that is unreasonable

Realistic timing is key, especially with multi-workgroup involvement and the time that is required to make any changes, and retest to determine if modification are doin

Publish QAPP and revise on an annual basis, akin to expectations for states.

Establish screening criteria to identify significant shifts in sector and geographic loads with updated CAST versions.

Include expectations when data does not "fit" within the model framework

Procedural activity--how can additional information or data or both resolve the problem after CAST review.

Consideration of third-party review process outside of CBP Partnership

opportunity for local data to inform unreasonable result

Ensure support is available for any kind of process determined as a result of this decision

Eliminate single points of failure by having process of verification spot checks on every input

Should we reserve the right in our decision today to let the people most intimately familiar with CAST to make gut calls on data outside of guidelines as long as they explai

"Unreasonable" should be defined. Part of the definition should include what % change in loads triggers a pause and review

parameters around the time or ability to adjust methods between the assessment/review and release; limit to iterations of adjustments or cutoffs for release

Be systematic about making changes to CAST so that the individual impact of each change can be quantified and evaluated

Consider the cost, time, and source of resources.

Should reflect on what worked and what didn't work with CAST-21 review and evaluation. Adjust as needed.

Consider creating data usability review/report for individual datasets

Agree with the statement of "% change in loads triggers a pause and review" - much like how EPA "flags" BMP progress, a similar "flagging" process should be included

CAST/model input should match what's on the ground locally as much as possible (rather than basin-wide assumptions)

Consider longer intervals for model updates given the time needed to vet datasets and to resolve variations adequately.

Establish a process for defining what is "reasonable."

Process flow diagram/decision making tree for defining what is reasonable

Consider how model results can be evaluated in light of monitoring observations as a reasonability check.

come up with objective criteria to accept data. If it doesn't meet the criteria, it is not considered "reasonable"

what types of data and what types of supporting information

Consider whether confidence intervals can be established for the model outputs to understand whether changes in loads are significant or simply within the "noise" of the model.

Establish in the expectations what triggers a change to processes to be consistent in future years. Clearly define who decides what results in a change to protocols.

Clarify what is "preventing data analysis variations." Data is variable. Are we referring to CAST when we say "analysis?"

considering how other data might be used to adjust projections when we have gaps or lags in our primary data sets

# PSC DECISION 3: CONTINUED

## CHARGE CONSIDERATIONS PART TWO

It's essential to establish an iterative processes between data development, QA/QC and modeling to improve data quality (and models' structures) over time.  
- K.B.

**Robust system of checks and balances.**

Consider constraints on forecasting. Could be based on historical variability, data reliability, etc

Review current process for acquiring/accepting data, what is missing? why did we miss the VA fertilizer data in CAST19? what happened and how we can avoid that

**Agree with concept of QAPP for CAST process**

Use State BMP reporting and verification processes as a guide for QA/QC standards for all other model inputs

Allow anyone to make a claim that the change is illogical, unreasonable, not representative of real on the ground change.

Define/identify uncertainty in the datasets used and assumptions applied, and how to deal with changes and/or updates in model inputs (e.g. Ag Census method changes).

**Revise the framework for how we resolve differences in model inputs.**

should there be some consideration of data limitations or caveats? Should there be no consideration without those descriptions?

charge needs to include some information on expectation of whether consensus based recommendations are needed or not.

Develop process for data transparency...fully document process, show your work, allow partnership review of input data, incorporate approved data, review outputs...

illogical, unreasonable, not representative of real change needs to be considered at State scale

identify what are the additional safeguards

a result is a CAST output or something different?



# PSC Decision 3:

Refine process to include additional safeguards to prevent data analysis variations and to assess reasonability of modeling results after CBP protocols are applied.

## WHO WOULD WORK ON THE CHARGE?

STAR and/or STAC participants if the group gets into specifics about how we define outliers, significance, or applying stats/math to determine "unreasonable"

Ask the Watershed Technical Workgroup develop a policy to be approved by the Management Board that will clarify as to when the technical workgroup would be engaged on issues

such as data abnormalities, unrealistic results and triggers for action. Would also suggest a review of how long we should lock out the model (e.g. moving from 2 yr to a 5 yr).

Didn't we just form a "Watershed Technical Workgroup"? That seems like the logical lead to begin these discussions

Workgroups/WQGIT do not approve QAPPs. But those groups can certainly discuss/approve methods or improvements to what's documented.

WQGIT decides which WGs in particular work on this. Identify roles and responsibilities of other entities (USGS, modeling team, etc.) to clarify expectations - J.W.

a collaboration of pertinent workgroups, STAR, and STAC

WQGIT with advice from STAC/STAR

WHO: Watershed Technical Workgroup oversight of CAST/Modeling Team work

Watershed Technical Workgroup, individual STAC/STAR experts, WQGIT and MB

**STAC**

whoever works on this, governance should be included in the charge

With relatively short timeline, driven by having recommendations approved and in place for CAST23 development, a F/T Team will likely need to be assigned

WQGIT should have an oversight role with input/guidance from workgroups, STAC/STAR

# PSC Decision 3:

Refine process to include additional safeguards to prevent data analysis variations and to assess reasonability of modeling results after CBP protocols are applied.

## TIMEFRAME FOR CHARGE

This applies to all 3 of these decisions - regardless of how long it takes to resolve this, we need to report out/provide update at the next PSC meeting.

This ought to be iterative- as in go back to today's guidelines and edit if necessary as we refine CAST and learn from our guidelines and from the data

With relatively short timeline, driven by having recommendations approved and in place for CAST23 development, a F/T Team will likely need to be assigned

until charge is more fully developed, difficult to suggest a timeline

Governance component should be included in the timeline. It takes time to get things approved throughout the partnership at varying levels - E.D.

Ideally this is completed before going into next development cycle for CAST23 (September 1, 2023) - J.M.

6 months

timeline will need to reflect capacity and governance process. revisit timelines and adjust if needed after we have charge/timeline for all 3 decisions

If timeline is short, then group needs to be solely focused on this. -E.D.