

Supplementary Material: Annotated Instrument

The Collaborative Policy Modeling Paradox: Perceptions of water quality modeling in the Chesapeake Bay Watershed

Since we interviewed people from many different agencies and jurisdictions our primary instrument was designed to provide general guidelines only. Preliminary tests of the template were conducted in November and December of 2020. While the general structure remained the same, phrasing and focus changed over the course of the interview period. In the following, Text in BLACK was read or paraphrased for all respondents, assuming time permitted. Text in GREY indicates questions that might be omitted depending on the respondent's area of expertise or the amount of time remaining for the interview. Text in BLUE provides information on how some of the text evolved as we learned from each interview.

Section 1: Background of Respondent

Thanks for agreeing to this interview. First, I'd like to verify that you were able to read our disclosure statement (if No, provide time to read it). Any questions or concerns before we get started?

We're very early in the model development process and are mainly trying to identify sources of information—after all, if we can't measure it, we can't model it. To that end we've collected a lot of publicly available data and have a solid understanding of the technical and legal aspects of the policy process. From these interviews, we're most interested in how “behind the scenes” activities affect policy making. We can use your help to identify political, economic, or social factors that are important determinants of policy design or implementation, but which are not easily observed by outsiders.

Because respondents seem to react negatively when questions asked were not in their area of expertise, we replaced the above statement with: *Since we are interviewing people who play many different roles in the CBP governance process, the questions I'll be asking are very general. Some will be right in your wheelhouse; others may be outside your area of expertise. For comparability I will be asking the same broad questions of everyone, but we'll spend most of our time on the topics that you know the most about.*

There are five sections of interview questions. First, we'll ask you a bit more about yourself. Second, we'll ask about the setting of the TMDL and division of loading goals among the state-level jurisdictions. Third we will ask about the development of the WIP(s). Fourth, we'll ask about the implementation of the WIPs. Lastly, we will ask some big picture questions about the program as a whole.

A.1. Name and Title of respondent [best to fill in in advance, then confirm]:

A.2. How would you describe your role in the governance of water quality for the Chesapeake Bay Watershed?

- a. How long have you held this role?
- b. How long have you been involved in Chesapeake watershed water quality management? *This included follow-up questions to get a good idea of the respondent's history in relation to the CBP.*
- c. What previous positions have you held in Chesapeake governance? In water quality governance elsewhere? *Follow-up questions as needed to discern pre-CBP background.*

A.3. Which of these committees have you served on, testified to, or observed?

- When respondents answered in the positive for any committee, we used follow up questions to get a more detailed understanding of the degree and timing of their involvement.
 - Because some respondents reacted negatively to being asked about committees that were far outside of their field, we began prefacing this question by stating that we were asking all respondents to go through the same list and that it was normal for people to be heavily involved in some committees but not at all involved with others.
 - Respondents with long histories at the CBP sometimes had difficulty with this section because of changes in the committee structure. When this came up, we made a note of it.
- a. Chesapeake Bay Commission
 - b. Chesapeake Bay Program Top
 - i. Executive Council
 - ii. Principle staff Committee
 - iii. Management Board
 - c. CBP Advisory
 - i. Scientific and Technical Advisory Committee
 - ii. Citizen’s Advisory Committee
 - iii. Local Government Advisory Committee
 - iv. Other Advisory Committees? [prompt to name]
 - d. CBP Internal
 - i. STAR Group (Scientific, Technical Assessment and Reporting)
 - ii. Water Quality Goal Implementation Team (GIT)

Follow-up questions used to determine involvement with any of the work groups.
 - iii. Other GITs? *Workgroup participation only recorded if volunteered.*
 1. Sustainable fisheries
 2. Habitat
 3. Maintain healthy wetlands
 4. Fostering Chesapeake stewardship
 5. Enhance partnering, leadership, and management
 - iv. Other internal groups, teams, committees?
 - e. Other relevant experience w/ policy-relevant organizations? We found that it was easier for respondents to answer if we asked them: “Do you frequently interact with _____”?, filling in the blank with each of the groups listed below and then prompting them to list the relevant entities or provide representative examples.

- i. NGOs? Because most respondents interpreted “NGOs” as “environmental organizations” we changed this to “Environmental, agricultural, or industry organizations”.
- ii. Federal or state agencies?
- iii. Federal or state legislatures? If yes, we would follow up to determine if the role was official, including testimony to the legislature or informal such as providing information.

Section 2: TMDL and Jurisdictional Allocations

There are four more sections of questions, each of which focuses on a different part of the policy process: 1) setting the TMDL and jurisdictional allocations/planning targets, 2) designing the WIPs, 3) achieving WIP goals, and 4) future challenges. Since we’re interviewing people with many different types of expertise in Chesapeake water quality governance, you may have more information on some questions than others. If a question falls outside of your area of expertise or you’d rather not answer it for any reason, feel free to decline to answer. [As per the note above, we revised this statement and moved it to the beginning of the interview.](#)

This section focuses on the creation of the TMDL and allocations among state-level jurisdictions.

- B.1. What (if any) role did you play in the setting of the TMDL or allocation of loading requirements among the state-level jurisdictions in 2010? [Initially we limited this question to 2010 to keep the interview time under 60 minutes. However, because we had such a wide variation in the length of involvement in the program and there have been various revisions of the TMDL/allocations since 2010, we eventually left the question more open, first asking respondents to identify WHICH of the phases/adjustments they were involved in and THEN asking how they were involved in each.](#)
- B.2. Can you briefly describe how the (Phase III) load limit for the Chesapeake watershed was set BASED ON recommendations from the CBP and CAST? [As above, we ended up asking people which Phases they were involved in \(usually eliciting this in Section 1\) and then asked them to talk about each phase/changes between phases. We frequently omitted the reference to CAST because it either produced highly detailed and technical descriptions \(from modelers\) OR shut down responses \(from non-modelers\).](#)
- B.3. Can you describe how the (Phase III) TMDL allocations were distributed among the state-level jurisdictions? [See above in re: different phases/adjustments.](#)

Section 3: Designing WIPs

- C.1. What (if any) is your role in the process of designing WIPs (e.g. selecting the BMPs) for one or more state-level jurisdictions? [Prompt to describe each phase separately/consider differences among phases if applicable.](#)
- C.2. How does the state translate its TMDL allocation into local planning targets? For instance, does the state first determine sectoral allocations (wastewater, stormwater, ag, etc.)? or does it start with watershed-level allocations?
- C.3. How are BMPs selected? We found it was more effective to ask:
 - a. [What are the main criteria that were used when selecting BMPs \(during the relevant phase\)?](#)
 - b. [Are there any BMPs that have been popular, but which are not very effective at reducing loads? \[Follow up for details/rationale\]](#)
 - c. [Are there any BMPs that are very effective but have been difficult to include in the WIP? \[Follow up for details/rationale\]](#)
 - d. [Is the BMP selection top-down or bottom-up?](#)

- e. How does the state use CAST when designing the WIP/selecting BMPs? Is it primarily used by only a few people or does it get used in stakeholder engagement? How much do they focus on cost effectiveness vs. meeting their planning targets? Given that there are so many possible BMPs in CAST, what did you take as your starting point (prompt if needed: WIP from previous phase, current status, best possible combination)?
- C.4. Can you describe how each of the factors listed below might facilitate or hinder effective WIP Design? This question produced interesting answers but ended up taking too much time and so was replaced by the questions in re: criteria above.
- a. Technical challenges or innovations
 - b. Economic costs or benefits of BMPs
 - c. Political will generally
 - d. Lobbying by powerful interest groups
 - e. Availability of funds
 - f. Availability of human resources
 - g. Other?

Section 4: On the ground implementation of WIPs

- D.1. What (if any) is your role in the process of ensuring that your jurisdiction achieves the goals set in the WIP design process described above—that is, making sure that the plans laid out in the WIP are actually put into practice on the ground? By this section, we usually had a good idea of the respondent's role and also were running short on time so would skip this question.
- D.2. Can you describe how the WIP goals have been achieved, either specifically from your experience or (if no experience) in general? It proved much more effective to ask respondents to describe BMPs that were successfully implemented and those that did not work as well as expected. Follow up questions were then used to get more information on the sources of success/failure.
- D.3. What (if any) is your role in the process of providing funding for WIP Implementation? Same as D.1.
- D.4. Can you describe how WIP funding is distributed either specifically from your experience or (if no experience) in general? Omitted for respondents with little involvement in funding or if time was running out. Usually paraphrased based on information already provided in previous answers to save time as well. For instance, if the person mentioned that grant-writing was an important part of their role in implementation, I would ask them about the grant-writing process, whether some types of BMPs were easier to fund via grants, etc.
- D.5. For the examples provided, was goal achievement limited or facilitated by any of these factors: Similar to C.4, interesting but we usually ran out of time to go through all of these. Many did still show up in other responses, however.
- a. Technical challenges or innovations
 - b. Economic costs or benefits of BMP
 - c. Political will generally
 - d. Lobbying by powerful interest groups
 - e. Availability of funds
 - f. Availability of human resources
 - g. Other?

Section 5: Effectiveness and Future Challenges

In the first few interviews, this section focused more specifically on how political pressures shaped the evolution of the CBP program and what might need to change in future. We found that these questions tended to be redundant (participants usually volunteered this information in earlier sections, if they had anything to say on it) and we were also struggling to stay within the 60 minute period, so we reduced the scope to the questions shown below.

- B.1. Do you think that water quality governance in the Chesapeake watershed is effective? Why or why not?
- B.2. What do you think are the biggest challenges for water quality governance in the Chesapeake over the next 25 years? [prompt on Climate Change if not raised; we also started prompting on Conowingo after it came up a few times]
- B.3. How might the policy process need to change to improve effectiveness and/or address those future challenges? Usually, this question was already answered in previous responses, so we dropped it.

Finally:

Thank you for your participation in this research project. We could not do this work without the important information provided by experts like yourself.

Would you be willing to be contacted again if we have any follow up questions?

Would you like to be added to a list of people who will receive updates on the progress of the project?

Would you be willing to recommend colleagues who might be willing to be interviewed for this project? We had hoped to use this question as the basis for network analysis to test the sample for potential biases but found that a more detailed set of questions would be needed to collect such information in a reliable way.