



CHESAPEAKE BAY FOUNDATION

Saving a National Treasure

September 18, 2023
The Honorable Richard Revesz
Administrator
Office of Information and Regulatory Affairs
Office of Management and Budget
725 17th Street, NW
Washington, DC 20503

Re: Request for Comments on Proposed Guidance for Assessing Changes in Environmental and Ecosystem Services in Benefit-Cost Analysis (88 Fed. Reg. 50912 (August 2, 2023))

Dear Administrator Revesz:

The Chesapeake Bay Foundation (CBF) is a 501(c)(3) non-profit organization with over 200,000 members, whose mission, carried out from offices in Maryland, Virginia, and Pennsylvania, is to restore and protect the ecological health of the Chesapeake Bay, the nation's largest and one of its most vital estuaries. The Chesapeake Bay watershed spans six states and the District of Columbia and is 64,000 square miles with 11,684 miles of shorelines. Home to more than 17 million people and 3,600 species of plants and animals, the Chesapeake Bay is an extraordinary system that provides valuable ecosystem services. From water quality that supports abundant fisheries to healthy wetlands that reduce storm impacts, ecosystem services are critical to guiding Chesapeake Bay protecting and restoration.

We are pleased to see, and are supportive of, the Office of Management and Budget's (OMB) efforts to develop guidance for understanding and considering impacts of agencies actions to ecosystem services. The guidance document provides many useful examples and narrative about the importance of ecosystem service valuation in government decision making. The guidance¹ is aimed to inform regulatory decisions, but should be applied in other government decisions such as direct funding of major projects that effect ecosystem services and grant programs that support development or

¹ [Draft for Public Review: Guidance for Assessing Changes in Environmental and Ecosystem Services in Benefit-Cost Analysis](#) (Published August 2, 2023)

ecosystem restoration. The guidance document outlines five steps, which we evaluate more closely below in response to the Request for Comments notice²:

Step 1: Ensure the scope of the analysis is sufficiently broad to reflect important ecosystem services in the baseline across alternatives

CBF applauds the guidance document's emphasis on establishing a baseline and realizing that baseline ecosystem services may be a flow, rather than a stock. For example, within the Chesapeake watershed, many projects that have some empirical studies on certain ecosystem services like nutrient loading removal from the application of certain Best Management Practices (BMPs) have been memorialized into "look-up tables" with services shown as a single number of pounds per year. While useful to track progress in the Chesapeake Bay Watershed Model³ under the Total Maximum Daily Load⁴ paradigm, doing so ignores the current (pre-project) nutrient loading removal service. The existence of such tables assists with the kind of analysis outlined in Step 3 of the guidance document, but should not be used to fully account for services or costs.

CBF also frequently comments on both development and restoration proposals that the limit of disturbance is too narrow geographically to fully account for changes in ecosystem service, both positive and negative. For example, the clearing of trees from riparian areas, while outside the jurisdictional limits of streams or wetlands covered by Clean Water Act permits, still affects the hydrology of those streams and wetlands. CBF supports this guidance that offers a route for agencies to address impacts to ecosystem services that are currently out of their jurisdiction.

Similarly, the financial commitment to project monitoring is generally truncated leaving service changes (positive or negative) that take time to develop out of the analysis. The document's emphasis on building conceptual models is helpful in preventing that oversight.

In the guidance document it is stated "Accounting for likely changes in ecosystem services in the future is important in assessing an alternative's certainty-equivalent benefits and costs, including how future changes may affect current asset valuations". Limiting spatial and temporal service

² 88 Fed. Reg. 50912 (August 2, 2023)

³ <https://www.chesapeakebay.net/what/programs/modeling>

⁴ [Chesapeake Bay Total Maximum Daily Load \(TMDL\)](#)

analysis at the outset of the project often results in project failures which need to be adaptively managed. In those cases, the ecosystem service benefit may not have accrued at all or only partially, yet the cost has increased based on the need to “fix” the project. Accounting for likely changes should inform agencies that failure happens and should be a scenario considered under Step 1.

Step 2: Describe the links between regulatory alternatives and likely changes to ecosystem services, and preliminarily determine which ecosystem services should be included in the analysis

The guidance document asks regulatory agencies to “capture relevant pathways leading to additional benefits and costs along with direct effects”, which would be a unique and valuable approach. CBF often engages at the earliest regulatory step in commenting on development proposals. By the time public comment is sought, however, a site for the project has been purchased or otherwise chosen preventing a full analysis of alternatives. In the fisheries example above, there are forums to air alternative policies, but these are less informed by benefits analyses and more by stakeholder opinions.

CBF is also supportive in the suggestion that agencies utilize conceptual diagrams to describe impacts. Use of conceptual diagrams helps decision-makers consider flows of ecosystem services over time rather than just existing and future states. These models can even be the basis for the architecture of a more quantitative model that predicts magnitudes of change in certain important services.

We applaud the inclusion of the importance of analyzing impacts to underserved communities. In our work, CBF has witnessed increasing evidence of this issue, as we become aware of past inequities in environmental enforcement, facility siting, and improper design. Providing guidance to agencies to consider these past inequities and prevent further disproportionate impacts to underserved communities is critical.

Step 3: To the extent feasible and appropriate, monetize, quantify, or qualitatively describe the important effects of the regulatory alternatives on ecosystem services, and address uncertainty

The guidance in this section refers to numerous other sources of ecosystem valuation methodologies similar to the guidance document itself, but more concrete examples could be provided that offer guidance on how to monetize benefits or even case studies that use a monetized service as an

example. Although EnviroAtlas is mentioned in the beginning of this section, it should be highlighted again as a resource in section 3a.

Another source to consider is: Data and Modeling Infrastructure for National Integration of Ecosystem Services into Decision Making: Expert Summaries⁵.

While overall, Step 3 is still helpful, this section could be improved by providing links to current tables that monetize common ecosystem services on a unit basis, like acreage, linear feet or a unit of volume. Sources for unit costs seem to be more available. While we realize prices may not be durable, they can serve as a placeholder for the year they were calculated and then adjusted for market forces in the meantime. If it truly is a priority for this step to monetize first before defaulting to other quantitative and qualitative characterization methods, then the guidance should directly provide such data and warn agencies to use caveats about how the prices of those services may change over time.

From the guidance document: *Because many regulatory alternatives cause both positive and negative changes in ecosystem services, analyzing both is important.*

The guidance does a good job of outlining that some benefits only accrue to certain communities. This is important as agencies consider addressing environmental justice as a result of inequitable investments and regulations in the past. The use of property values, for example, may detract from monetizing ecosystem services because so many other variables affect property values. A history of environmental injustice has affected property values in underserved communities making them less valuable. So, if property value increases are applied as a way to monetize an ecosystem service, the increase is likely to be more valuable where land prices are already high.

From the guidance document: *“Other aspects that can be important to analyze include the ways in which alternatives shift how a service is provided (e.g., moving from providing a service artificially to relying on nature, or moving from one natural asset to another), as well as interactions between different natural assets and ecosystem services”.*

⁵ <https://hdl.handle.net/10161/26485> (2017)

In most cases, CBF prefers to rely on natural services that are long-lasting rather than practices that need to be artificially sustained either by built infrastructure or repeated funding cycles for the same practice. For example, we envision the lesson from step 3 in our work would be to invest in practices like riparian buffer planting on farms which propagate ecosystem services for decades into the future over annual practices that require continual investment, like cover crops. While consistent investment in cover crops improves soil health over time, it may not be the best investment from the government's standpoint. Agencies that distribute these funds should look closely at this aspect of the guidance document.

Step 4: Aggregate estimated ecosystem-service changes and report them in a table, along with other benefits, costs, and transfers

The first two premises of Step 4 seem logical as CBF has witnessed numerous occasions where a change in natural capital can yield multiple quantifiable benefits.

The third premise in this section, however, is debatable.

From the guidance document: *Third, including the values of processes that occur along the causal chain from a system change to a welfare outcome (e.g., valuing an intermediate service and the associated final service) can lead to double-counting.*

CBF's experience with regenerative agriculture and oyster reef restoration both provide examples of where valuing both the intermediate service and the associated final service should not be considered double-counting. In regenerative agriculture, the improvement of the soil has multiple ecosystem benefits such as flood and drought resilience, carbon sequestration, improved biodiversity and pollinator support as well as improved water quality. These services accrue to the ecosystem as a whole completely separate from crop production. Similarly, our oyster restoration efforts both rebuild oyster stock and habitat complexity in sanctuaries where they provide increased biodiversity, nutrient cycling and water filtration. Oyster larvae exported from sanctuary reefs to support wild oyster populations outside the sanctuary could be considered an associated final service. Indeed, even the oyster restoration and aquaculture conceptual models in Appendix II underscore this dynamic. Government grant programs and

restoration permit reviews should acknowledge this reality and not simply consider the final service value when evaluating restoration or agricultural cost share program investments.

Step 5: Incorporate monetized, quantified, and qualitatively described ecosystem-service benefits and costs into a narrative describing all benefits, costs, and transfers

Producing the Accounting Statement step is a logical way to “teach” decision makers about the multiple costs and benefits of decisions, especially ones where the agency has had a narrower analysis in the past of both costs and benefits. In fact, it’s likely to be the first -and perhaps only - part of an analysis that is read by decision makers because it is summarized in narrative form.

As the guidance suggests, identification of research gaps will be necessary as many of the ecosystem services are only recently being considered and may lag behind more traditional methods of valuation. Interactions between human welfare outcomes as explored in Appendix I can be both positive and negative, as well as accrue differently to traditionally advantaged and underserved populations. The narrative should be explicit about this issue. Especially as climate adaptation becomes more widespread in both regulatory and funding paradigms, benefits based on the value of waterfront property, for example, can favor privileged communities and perpetuate environmental injustice.

Appendices

Appendix I – Types of Rules with Potential Effects on Ecosystem Services and Causal Pathways

This appendix is useful for identifying different aspects of a regulation and causal pathways which affect valuation. However, the tables in Appendix I are only helpful where clear positive or negative outcomes are indicated for each of the human welfare endpoints. Otherwise, it is difficult to know how analyzing the possible causal pathways will produce decision support if both

positive and negative endpoints are likely without additional analysis of the magnitude of those changes relative to each other.

Appendix II – Advice on Conceptual Models

Many of the conceptual model examples in this appendix are directly relevant to CBF policy objectives and policies being debated by administrative agencies and elected officials within the watershed. However, while the flow arrows show connectedness of components, the appendix lacks guidance on how to quantify flows or magnitude of outcomes. The semi-quantitative step of indicating whether there is a strong or weak connection to outcomes is helpful to consider. If Step 3 had provided more complete guidance on monetization and quantification, these models could be applied more readily.

Appendix III – Avoiding Potential Accounting Pitfalls—Hypothetical Examples

Interestingly, the hypothetical examples used in this appendix all came with monetization or other quantified benefits to allow the pitfalls to be illustrated. The weakness of the guidance previously mentioned for Step 3 makes this appendix of little value as it does not illustrate how non-monetized outcomes can be compared and weighted against one another.

Appendix IV – Mapping Ecosystem-Service Endpoints

CBF has been developing GIS capabilities for nearly a decade now and has both internal and public facing story maps, visualizations, and decision-support tools that guide our restoration, education, research and advocacy. We even produce tools to share with policy makers that could assist them in the very decision support Appendix IV illustrates. The GIS capabilities of many state and federal agencies responsible for Chesapeake Bay protection and restoration are highly variable, both within and between agencies.

As mentioned previously, agency regulatory treatment of alternatives analysis rarely includes alternative sites as the agencies are responding to applications where siting decisions have already been made through land purchase. Appendix IV outlines reasonable development of layers which optimize different ecosystem services in a geographic context that can be overlaid to support complicated analysis of alternatives with costs and monetized benefits where they exist. The guidance document should

emphasize the need for agencies to develop their own GIS programs or contract with vendors who can provide geospatial analysis as a fundamental building block of ecosystem service evaluation.

We would recommend that the federal government lean on organizations such as CBF who have experience in understanding complex impacts to ecosystem services and can support agencies as they work to consider those. We are thankful for the opportunity to weigh in on the Proposed Guidance on Ecosystem Services look forward to supporting considerations of ecosystem services in agency decisions.

Sincerely,

A handwritten signature in black ink that reads "Annabelle Harvey". The signature is written in a cursive, flowing style with a long, sweeping tail on the letter "y".

Annabelle Harvey
Federal Policy Coordinator
Chesapeake Bay Foundation