



HUNTON & WILLIAMS LLP
RIVERFRONT PLAZA, EAST TOWER
951 EAST BYRD STREET
RICHMOND, VIRGINIA 23219-4074

TEL 804 • 788 • 8200
FAX 804 • 788 • 8218

BROOKS M. SMITH
DIRECT DIAL: 804-787-8086
EMAIL: bsmith@hunton.com

FILE NO: 29142.070315

August 27, 2012

SUBMITTED VIA REGULATIONS.GOV

US EPA Docket Center
Environmental Protection Agency
EPA-HQ-OA-2012-0033
Mailcode 28221T
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Comments of the Utility Water Act Group on EPA's Proposed Information Collection Request; Comment Request; Valuing Improved Water Quality in the Chesapeake Bay Using Stated Preference Methods (New)
77 Fed. Reg. 43822

Dear Sir:

Attached are the comments of the Utility Water Act Group on the proposed information collection request on valuing improved water quality in the Chesapeake Bay using stated preference methods.

Please call me if you have any questions.

Sincerely,

Brooks M. Smith

Attachments



**COMMENTS OF
THE UTILITY WATER ACT GROUP
ON EPA'S PROPOSED INFORMATION COLLECTION REQUEST;
COMMENT REQUEST; VALUING IMPROVED WATER QUALITY IN THE
CHESAPEAKE BAY USING STATED PREFERENCE METHODS (NEW)
77 FED. REG. 43822**

**Submitted to United States Environmental Protection Agency
Docket No. EPA-HQ-OA-2012-0033**

August 27, 2012

**COMMENTS OF THE UTILITY WATER ACT GROUP ON EPA'S PROPOSED
INFORMATION COLLECTION REQUEST; COMMENT REQUEST; VALUING
IMPROVED WATER QUALITY IN THE CHESAPEAKE BAY USING STATED
PREFERENCE METHODS (NEW)**

1-1

The Utility Water Act Group (UWAG)¹ welcomes the opportunity to comment on the Environmental Protection Agency's (EPA) proposed Information Collection Request (ICR) on valuing improved water quality in the Chesapeake Bay using stated preference methods. For the reasons described below, we do not believe that the proposed stated preference methods survey is necessary or appropriate.

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At the outset, we note that EPA first issued notice of this proposed ICR on January 27, 2012. However, EPA failed to provide any of the relevant supporting materials before the close of the first comment deadline on March 27, 2012. UWAG submitted comments to this effect on March 20. EPA ultimately issued a second notice of the proposed ICR on May 24, 2012, and provided the 60-day comment period required by the Paperwork Reduction Act, 44 U.S.C. § 3506(c)(2)(A). Unfortunately, EPA's second effort suffered from the same procedural defect as the first – the supporting record was incomplete. UWAG submitted comments to this effect on July 18. EPA issued a third notice of the proposed ICR on July 26, 2012, setting a new 30-day comment period. Still, however, the supporting record remains incomplete because the Agency has failed to provide much of the documentation underlying the development of its proposed survey. For example, EPA says it conducted at least eight

¹ UWAG is a voluntary, *ad hoc*, non-profit, unincorporated group of 183 individual energy companies and three national trade associations of energy companies: the Edison Electric Institute, the National Rural Electric Cooperative Association, and the American Public Power Association. The individual energy companies operate power plants and other facilities that generate, transmit, and distribute electricity to residential, commercial, industrial, and institutional customers. The Edison Electric Institute is the association of U.S. shareholder-owned energy companies, international affiliates, and industry associates. The National Rural Electric Cooperative Association is the association of nonprofit energy cooperatives supplying central station service through generation, transmission, and distribution of electricity to rural areas of the United States. The American Public Power Association is the national trade association that represents publicly-owned (units of state and local government) energy utilities in 49 states representing 16 percent of the market.

focus groups and twenty-six protocol or “cognitive” interviews in developing the survey, but the Agency provides no transcripts or other information regarding the results of those efforts. *See* Supporting Statement for the Information Collection Request for Willingness to Pay Survey for Chesapeake Bay Total Maximum Daily Load: Instrument, Pre-test, and Implementation, Part A (“Part A”), p. 10 and Part B (“Part B”), p. 3. The Agency also says the survey instrument was peer reviewed by three scholars (Part A, p. 12), but none of their comments have been included in the record. And EPA says it worked closely with modelers from the National Oceanic and Atmospheric Administration (NOAA) to examine “the ecological impacts of reducing nutrient and sediment loads to the Bay of the ecosystem-based fishery models [sic]” (Part A, p. 12), but EPA has not made available any of the information resulting from that collaboration, or any of the other “useful background” EPA says NOAA provided for the survey. It is important for EPA to provide all of this information to the public, in order to ensure a full and fair chance to evaluate the validity of the survey instrument and the proposed analytical framework for any survey results. Needless to say, a public comment process cannot be meaningful where an agency withholds the supporting record for its proposed action. It is fundamentally unfair to start the clock on the comment process before all of the supporting materials have been revealed. In this proceeding, these three procedural missteps alone make it inappropriate for the Agency to proceed with this ICR.

More fundamentally, we question whether the proposed ICR is necessary. The closest EPA comes to explaining the necessity of the proposed collection effort is as follows: “EPA has begun a new study to estimate the costs of compliance with the TMDL. It is important to put cost estimates in perspective by estimating corresponding benefits.” Part A, p. 3.

Apparently, this “new study” arises out of the FY2012 Action Plan for President Obama’s Executive Order 13508. This Action Plan, which was prepared by the Federal Leadership Committee for the Chesapeake Bay, makes vague reference to supporting a study of the “true costs” of water quality improvements and the role that nutrient trading can play in reducing these costs (FY2012 Action Plan, pp. 9, 28). However, there is nothing in the Action Plan about a corresponding study on benefits, and there is nothing in the proposed ICR that directly correlates with the Action Plan, Executive Order 13508, or any other regulatory driver that would make the proposed collection “necessary for the proper performance of the functions of the Agency” and have “practical utility.” 44 U.S.C. § 3508. Elsewhere, in EPA’s ICR Part B (p. 1), the Agency states that, “The overall goal of this survey is to examine public values (including non-use values) for improvements in water quality in the Chesapeake Bay and its watershed.” Again, this does not provide any legitimate regulatory impetus for the ICR.

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As EPA well knows, the regulatory proceeding that is most directly relevant to the proposed ICR has already occurred – EPA established a final total maximum daily load (TMDL) for nutrients and sediments in the Chesapeake Bay back in December 2010. At best, it appears that the ICR is intended to serve as a *post hoc* rationalization for the TMDL. At worst, it will impose significant burden and costs (*e.g.*, 13,801 hours and over \$1.2 million in costs). Part A, p. 27.

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Even assuming that the proposed ICR were properly supported and necessary (which we dispute above), it would involve a “stated preference” survey approach that is not generally accepted and that is prone to substantial bias and other limitations. As the Agency recently acknowledged, “The main disadvantage of stated preference methods is that they may be subject to systematic biases that are difficult to test for and correct.” National Center

for Environmental Economics, EPA Office of Policy, “Guidelines for Preparing Economic Analyses” of December 17, 2010 (“Guidelines”), p. 7-35. Examples of these biases include hypothetical bias, which occurs when respondents are asked about situations that are systematically different from what individuals would actually face if policies were implemented; non-response bias, occurring when non-respondents would have answered questions in a fashion systematically different from those who did answer; and “yea-saying,” which refers to respondents overstating their true willingness to pay to show support for a situation described in the survey questions. *Id.* at pp. 7-40, 7-42 to 7-43.

For these reasons, UWAG believes (and the literature suggests) that stated preference or “willingness to pay” surveys should be used only where the information is needed in order to inform important policy decisions, and other, more reliable sources of information are unavailable. Here, EPA has already made its decision and steps towards implementation are already well underway at the federal and state level. And other, far more reliable sources of information are available for estimating direct and indirect use values. Thus, EPA’s only reason for pursuing this survey approach is to estimate so-called “non-use” values (*i.e.*, purely subjective values that individuals place on knowing that a resource is protected, even if they do not use it or even see it), which EPA claims are likely to be appreciable. But the only evidence supporting that claim is provided by a single paper by Boekstael et al. (1989), cited in Cropper and Isaac (2011), which suggests that non-use values associated with improving the quality of the Chesapeake Bay for swimming would be less than one-third of the use values associated with such improvements. Furthermore, use of a stated preference survey to measure “non-use” benefits is particularly inappropriate where, as here, the Agency has not shown indicator resources (*e.g.*, water clarity and aquatic grasses) to be unique or limited and

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the impacts to be substantial or irreversible. “Comments on EPA’s Notice of Data Availability for §316(b) Stated Preference Survey,” prepared by NERA Economic Consulting for UWAG (“NERA Report”), July 2012, p. 7 (a copy of which is attached). Thus, there is little evidence that non-use values are likely to be great enough to warrant a survey of this type or an appropriate means of studying the selected indicators.

Given the lack of information made available by the Agency regarding the proposed methodology for the survey, it is difficult to assess the magnitude of survey limitations as specifically applied to the proposed collection. However, based on the limited information that has been provided, we have a number of concerns, as summarized below.

First, it is not clear that the benefits respondents are asked to value bear any relationship to the benefits likely to occur as a result of loading limitations for nitrogen, phosphorous, and sediments imposed by the Chesapeake Bay TMDL. The validity of a stated preference survey depends on the accuracy of the “options” respondents are offered. For example, EPA’s proposed survey options look at various input (*i.e.*, dissolved oxygen, water clarity, aquatic grasses, lake condition, and change in cost of living) and endpoint (*i.e.*, water clarity, blue crab abundance, oyster abundance, lake condition, and cost of living) benefit variables. EPA’s analysis of the connection between these variables and compliance with the Bay TMDL is not apparent from the record currently available, however. EPA appears to have selected these options as “indicators of ecosystem improvements” based on state and federal agency use of such indicators to “develop Bay water quality goals.” Part A, p. 17. Evidence that compliance with the Bay TMDL will likely result in the range of improvements in EPA’s chosen indicators is not provided. Rather the EPA states that the Agency selected indicators “assumed” to represent ecological and water quality conditions in the Chesapeake

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Bay watershed. Part A, p. 14. Demonstrating a correlation between the biological indicators and Bay TMDL is particularly important given the wide range of natural and man-made variables, not all affected by the Bay TMDL, with potential to impact such indicators such as blue crab and oyster abundance. Furthermore, (a) there is insufficient explanation in the record to determine how EPA arrived at the cost of living indicators it proposes to use and whether those indicators take into account sufficient cost variables to be representative of those associated with the Bay TMDL; (b) the survey fails to provide respondents with information on other potential trade-offs, such as employment impacts, that are not easily reduced to household income; and (c) we question whether the metrics chosen for the Bay (both as to type and range of specific impacts) are relevant to waters outside the Bay itself, as well as, in turn, EPA's proposal to apply the survey to states outside the Chesapeake Bay.

Second, the Agency has not provided sufficient support in the record that the policy effects described in the proposed survey sufficiently enable respondents to "comprehend the potential implications of their hypothetical choices" as required for effective stated preference surveys. See 77 Fed. Reg. 39,930, col. 1. EPA's proposed survey asks respondents to choose how they would vote if presented with two regulatory options or a status quo option. The options were characterized by five environmental impacts (*e.g.*, percent of Bay area meeting dissolved oxygen goals and feet of visibility in Bay). Again, however, there is nothing in the record to show that these hypothetical policy options provide respondents with sufficiently representative policy context to enable the Agency to obtain meaningful data using the proposed survey. Additionally, the validity of the "status quo" baseline option is questionable because it does not appear to factor in potential improvements to environmental conditions

(e.g., those that might result from efforts by watershed states to improve Bay conditions prior to the Bay TMDL).

Third, even if the Agency were to demonstrate that survey indicators and policy effects (currently identified or later revised) are correlated with Bay TMDL benefits, we question whether meaningful data can be obtained due to cognitive shortcuts taken by respondents faced with complex survey subject matter. It is likely that, in order to provide sufficient policy-relevant information to demonstrate the correlation between survey options and the Bay TMDL, EPA would need to present respondents with complex and detailed information on various potential biological benefits, as well as explain and acknowledge the enormous uncertainties involved in developing such information. The vast majority of respondents would have no prior knowledge of these biological issues or experience comprehending such information and the related uncertainties. Academic literature on the cognitive processes involved in survey responses indicates that when the information provided to respondents is inadequate and/or the burden on respondents to determine a reasoned response is high, respondents tend to take shortcuts in answering the survey questions. NERA Report, p. E-5. These shortcuts – such as substituting an easier heuristic question or providing an apparently satisfactory answer (“satisficing”) instead – do not reflect true willingness-to-pay for environmental gains. *Id.* This suggests that EPA’s proposed survey is not likely to develop valid benefits information that reflects actual willingness-to-pay.

Fourth, there is more to a stated preference survey than the survey instrument. Such a survey also involves survey implementation and econometrics analysis procedures. EPA does not appear to have sufficiently developed these stages of the proposed survey to allow for

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meaningful opportunity for comment at this time. For example, while the survey instrument apparently has been peer reviewed (Part A, p. 12), EPA does not yet appear to have submitted the proposed survey implementation and econometrics analysis approaches for peer review in accordance with Agency guidance (*e.g.*, EPA's Peer Review Handbook, 3rd Ed.). Thus, any revisions from peer review of these procedures cannot be considered and commented on at this time. EPA may not have submitted these survey procedures for peer review yet because these stages of the survey appear relatively preliminary and subject to change. For example, EPA proposes an "experimental design *framework*" but then states that the "experimental design *will be developed by Abt Associates Inc.*" (Part B, p. 23) and that the Agency "*anticipates* that four attributes will be incorporated in the vector of variables describing attributes of the pollution reduction programs..." (Part B, p. 21). We encourage the Agency to make available, as further developed, these other aspects of the proposed survey, along with any results from the proposed subsequent pilot study (Part B, p. 14), to allow an opportunity for meaningful comment on the full proposed ICR. Without such additional information, it is not yet possible to assess to what extent the inherent weaknesses associated with stated preference surveys mentioned above, such as hypothetical bias, might influence the results of the proposed survey.

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Fifth, the "Information Quality Act" requires EPA to issue guidelines for ensuring and maximizing the "quality, objectivity, utility, and integrity" of information (including statistical information) it disseminates. Pub. Law 106-554 § 1(a)(3) [515]. EPA's Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity for Information Disseminated by the Environmental Protection Agency (EPA/260R-02-008 December 2002) are the Agency's attempt to meet this requirement; see also EPA Quality Manual for

Environmental Programs (5360 A1 (May 5, 2000)). The point of the Information Quality Act and applicable guidance is to ensure that the agencies do not move forward in cases where the information on which they will rely is too inadequate or unreliable for the task at hand. With its stated preference survey, EPA is attempting to measure people's attitudes with a survey instrument method that is – at best – controversial due to, as discussed above, the procedural flaws associated with the proposed survey and systematic biases associated with the proposed stated preferences survey approach. We believe that any data obtained through the proposed survey would be contrary to the purpose of the Information Quality Act to ensure and maximize the “quality, objectivity, utility, and integrity” of information disseminated by federal agencies. See 44 U.S.C. § 3516.

Finally, there are multiple errors in the draft survey instrument. For example, on p. 16 of the Endpoint/Constant Baseline Version (May 22, 2012), the Agency presents an example hypothetical choice between no further regulatory action and an alternative regulatory program, “Program B.” EPA describes the “no further action” scenario as not changing the average Bay water quality of 3 feet visibility. EPA then describes Program B as improving Bay water quality by 67% but also resulting in 3 feet visibility. Either the 67% increase or 3 feet visibility description must be inaccurate. Similarly, on p. 17 of the Input/Constant Baseline Version (May 22, 2012), EPA describes 3 feet of visibility as a 67% increase in water clarity as compared to the 3 feet of visibility associated with the no further action scenario. In the same chart on p. 17 of the Input/Constant Baseline Version (May 22, 2012), 150,000 acres is inaccurately described as a 50% increase in comparison with the 80,000 acre no further action baseline scenario. In yet another example, on p. 22 of that same survey version, 80,000 acres of aquatic grasses is mistakenly described as a 50% increase in

comparison with the 80,000 acres of aquatic grasses associated with the no further action baseline scenario, and 130,000 acres of aquatic grasses is mistakenly described as a 25% increase in comparison with the same 80,000 acres baseline.

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We urge the Agency to abandon the proposed ICR because it is unnecessary, burdensome, and unlikely to provide meaningful data.

RESPONSES TO COMMENT SET 1: Utility Water Act Group

- 1-1 Thank you for the detailed comments.
- 1-2 EPA extended the comment period by 30 days in order to accommodate review of supporting materials.
- 1-3 See Section 2a of Part A this ICR for a discussion of the purpose of the study.
- 1-4 Again, see Section 2a of Part A of this ICR for a detailed discussion of the purpose of the study.
- 1-5 EPA recognizes that hypothetical bias is a potential concern in stated preference (SP) surveys and takes this concern seriously. In general, SP methods have “been tested and validated through years of research and are widely accepted by federal, state, and local government agencies and the U.S. courts as reliable techniques for estimating nonmarket values” (Bergstrom and Ready 2009, p. 26). A recent meta-analysis of the stated preference literature also concludes that hypothetical bias may not always be a significant concern (Murphy, et al. 2005).

To reduce the potential for hypothetical bias in this survey EPA has consulted with experts and drawn from peer reviewed literature to address it in the survey design. For example, the survey explicitly incorporates elements that allow mitigation of hypothetical bias, such as the use of reminders about budget constraints (akin to the cheap talk language in Cummings and Taylor 1999; List 2001). These features of survey design are shown to minimize hypothetical bias in experimental settings. The text used in this survey has undergone thorough testing with participants in focus group and one-on-one interviews. EPA believes that the steps taken during survey development and testing have largely mitigated the potential for hypothetical bias. See Section 2d of Part B of this ICR for more information on how we address hypothetical bias.

Similarly, EPA recognizes the potential for households to exhibit yea-saying and to overstate or understate their true WTP in order to influence decisions informed by survey data. Survey and study design choices can mitigate yea-saying. The use of mail survey rather than face-to-face interview has been shown to decrease the social pressure that may influence a respondent to provide a response deemed desirable (Dillman 2000). This survey also employs a conjoint choice framework, where respondents must consider the trade-offs between a status quo and two policy options. Respondents are asked to make a discrete choice among three unranked options rather than a simple yes or no. These options vary in terms of the levels of five environmental attributes (plus cost). In this choice experiment framework it has been shown that the likelihood for yea-saying and strategic responses is less prominent (Blamey and Bennett 2001, Collins and Vossler 2009).

EPA also recognizes the potential for non-response bias and the impacts it could have on the data analysis. First, EPA is taking steps to obtain the highest possible response rate, thereby mitigating non-response bias. Specifically, EPA is using focus group-tested design choices to encourage participation. EPA is also following the Dillman tailored design method (Dillman 2008) for mail surveys which includes an introduction letter preceding the survey, a reminder post card, and second mailing of the survey, and a reminder letter following the second survey.

EPA will also administer a non-response follow-up survey (Attachment 11) in both the pre-test and full survey in order to examine whether or not respondents are systematically different from non-respondents (see OMB 2006). In the non-response follow-up survey, households that do not return the survey will be randomly sampled to receive a short questionnaire by priority mail. The questionnaire will elicit basic demographic information as well as a few short questions regarding awareness and the reasons they did not complete the survey. Responses to these questions will be used to examine whether respondents are systematically different from non-respondents. See Section 2c of Part B of this Information Collection Request for a description of the non-response follow-up survey.

In addition, in order to identify such respondents EPA includes debriefing questions at the end of the survey to identify respondents who might believe that protecting the environment is important no matter the cost. Sensitivity analysis will be used to examine if and how responses to these debriefing questions influence responses. Again, Section 5b of Part B of this ICR provides a detailed response.

- 1-6 It is impossible to know the magnitude of nonuse values prior to conducting this study. While information is available in Bockstael, McConnell and Strand (1989) on the potential value of water quality improvements in the Watershed, the study is based on a small sample of Bay-area residents, and provides limited information on a broader set of benefits attributable to water quality improvements.
- 1-7 Standard survey development protocols have been used to develop the survey. See Section 3c of Part A for a discussion of background information.
- 1-8 In response to peer review comments from academic experts in stated preference methods, EPA is now only modeling willingness to pay for improvements in bay water clarity, striped bass, blue crab, oyster populations, and the quality of lakes in the watershed. This was previously referred to as the “endpoint” version of the survey. These attributes were chosen based on extensive focus groups and interviews as the environmental features that are most salient to the general public. Furthermore, EPA and NOAA models predict that these features will be impacted by the TMDL. The stated preference survey outlined in the ICR does *not* estimate the benefits of the TMDL directly; rather this survey is designed to value generic status quo and policy options that result in changes in the environmental attributes. As part of the experimental design, respondents are presented with hypothetical changes in these attributes and cost. In other words, the hypothetical levels associated with each of the attributes and costs in the survey vary across respondents (see Section 2d of Part B). This allows us to identify the

parameters and estimate a range of values associated with different scenarios. The variation in costs across programs is not intended to reflect the costs of the TMDL, but rather the likely range of values respondents hold for the options, as found in extensive focus groups and interviews. The parameters estimated from respondents' choices to these hypothetical scenarios will then be used to estimate the benefits of the TMDL incremental to the baseline.

- 1-9 The survey does remind respondents to consider other things they may spend their money on, like food, clothing, etc., so that they fully consider their budget constraint before making choices. However, respondents are also reminded several times that all other factors (including employment) are held constant across options. In other words, the survey only assesses the value people hold for the attributes specified in the choice experiments. EPA believes that focusing on this subset of factors will lead to a conservative but more reliable estimate of total benefits. EPA proposes to administer three versions of the survey - an increasing baseline, decreasing baseline and constant baseline - in order to estimate benefits of environmental improvements relative to a range of baseline scenarios.
- 1-10 EPA conducted 10 focus groups and 72 cognitive interviews with individuals within and outside the Watershed in order to test their level of understanding of the materials included in the survey (OMB Control Number 2090-0028). We used this standard survey design protocol to identify the most salient environmental endpoints that will be affected by the TMDL.
- 1-11 See Sections 2b and 5b of Part B of the ICR for the survey implementation and econometric analysis approach to be used in the survey project.
- 1-12 Again, the EPA disputes the idea that the stated preference method does not have the ability to collect information with, "quality, objectivity, utility, integrity" on the foundation that these methods are largely accepted as a valuable tool among those seeking to understand the benefits of changes to nonmarket goods. The use and nonuse willingness-to-pay estimates generated from this research will provide a more well-rounded evaluation of future pollution reduction programs in the Chesapeake Bay, contributing to the quality, objectivity, and integrity of information the EPA will disseminate.
- 1-13 We appreciate the attention to these details addressed by UWAG and can assure them that any errors within the experimental design have been rectified.
- 1-14 EPA believes this study will allow public values and opinions to be included in the decision-making process for the Chesapeake Bay. Using current econometric methods, this study will provide unique, policy relevant information about what, if any, further actions are called for in the Chesapeake Bay.

Attachment 13
Responses to Comments

July 23, 2012

Office of Environmental Information
Environmental Protection Agency
Mailcode 28221T
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460
(filed online using <http://www.regulations.gov>)

Re: **Docket ID No. EPA-HQ-OA-2012-0033**

The undersigned organizations are pleased to file comments on the Environmental Protection Agency's (EPA's) proposed Information Collection Request (ICR) for a survey on "Valuing Improved Water Quality in the Chesapeake Bay Using Stated Preference Methods."

2-1

The undersigned organizations represent the nation's business, construction, manufacturing, housing, agriculture, forestry and energy sectors, all of which are vital to a thriving national economy, including providing much-needed jobs.. All of these important economic interests operate within the 64,000 square mile Chesapeake Bay watershed. These sectors and their employees and customers will be greatly impacted by the Total Maximum Daily Load issued by EPA in December 2010 for the Chesapeake Bay. However, the scope of these impacts are not fully known because EPA has not conducted an analysis of the costs that the TMDL. According to the Federal Register notice seeking comment on this ICR, "EPA has begun a new study to estimate costs of compliance with the TMDLs." 77 Fed. Reg. 31006, 31008 (May 24, 2012).

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According to EPA: "It is important to put cost estimates in perspective by estimating corresponding benefits." *Id.* Therefore, the purpose of this ICR is to provide "benefits analysis of improvements in Bay water quality under the TMDLs, as well as of ancillary benefits that might arise from terrestrial measure taken to improve water quality." *Id.* The undersigned do not believe that the proposed ICR can meet this objective.

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As the Agency knows, the Paperwork Reduction Act sets forth certain standards that EPA must satisfy in order to obtain ICR approval from OMB. *See* 44 U.S.C. 3506(c)(3)(A) (Agency certification) and 44 U.S.C. 3508 (OMB determination). Among other things, EPA must demonstrate that any proposed ICR:

- Is of "practical utility;"
- Is written in plain, coherent and unambiguous terminology, and is understandable to those who are to respond; and
- Sets forth an effective and efficient statistical survey methodology appropriate to the purpose for which the information is to be collected.

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2-4

As discussed below, the four surveys that EPA is proposing do not meet these criteria.¹ First, a stated preference survey cannot provide rigorous, reliable information that accurately reflects the benefits of the Bay TMDL in a meaningful way. As EPA knows, a stated preference survey relies on data drawn from people's responses to hypothetical questions. As such, this method of estimating benefits is subject to systematic biases, which are difficult to test for and correct.² See EPA, National Center for Environmental Economics, Guidelines for Preparing Economic Analyses, Dec. 17, 2010, at 7-35. These biases include "hypothetical bias" resulting from the fact that people are not actually asked to make the investments they claim to be willing to make. These surveys also suffer from non-response biases, where persons who have little or no interest in the subject matter simply fail to respond, while persons with a higher willingness to pay are more willing to respond to a survey. Finally, it is difficult to draft a valid survey that accurately captures the concept being evaluated. See generally *id.*, section 7.3.2. For these reasons, "a non-trivial fraction of economists are skeptical of the results elicited from stated preference surveys." *Id.* at 7-36.

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No stated preference survey can overcome these fundamental methodological faults. Even if a hypothetical survey could do so, the survey that EPA is proposing to use to estimate the benefits of the Bay TMDL fall far short of the level of confidence that would meet the requirement of the Paperwork Reduction Act that a survey have practical utility. The proposed survey also falls far short of the requirements of OMB's information quality guidelines for utility, integrity and objectivity. In fact, we do not believe EPA can demonstrate that the proposed surveys will "result in information that will be collected, maintained and used in a way consistent with the OMB and agency information quality guidelines." See "Questions and Answers When Designing Surveys for Information Collection," OMB, Jan. 2006, at 9. As noted by OMB: "A stated preference study may be the only way to obtain quantitative information about non-use values, though a number based on a poor quality study is not necessarily superior to no number at all." OMB 2006, at 75.

In support of our conclusion that EPA's proposed surveys are of no practical utility, are ambiguous, and are not based on an appropriate statistical methodology, we offer the following specific comments:

1. The scope of the benefits to be evaluated by the surveys exceeds the scope of the TMDL.

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According to EPA, "[t]he findings from this study will be used by EPA to estimate the total value of economic benefits of the nutrient and sediment TMDLs designed to meet the requirements of Executive Order 13508." Supporting Statement for Information Collection Request for Willingness to Pay for Chesapeake Bay Total Maximum Daily Load: Instrument, Pre-Test, and Implementation,

¹ The four surveys proposed by EPA are as follows: (1) a survey that asks questions based on a willingness to pay for reduced inputs to the Bay, such as dissolved oxygen levels, water clarity and acres of aquatic grasses, with a constant baseline that assumes no change in the Bay by 2025 if additional action is not taken, (2) the same "input" survey but with a declining baseline that assumes that the Bay gets worse by 2025 if additional action is not taken, (3) a survey that asks questions based on a willingness to pay for reduced outputs in the Bay, such as tons of blue crabs or oysters with a constant baseline that assumes no change if additional action is not taken, and (4) the same "output" survey but with a declining baseline that assumes that the Bay gets worse if additional action is not taken.

² Indeed, this methodology is the same as the contingent valuation methodology that has been roundly criticized in the context of monetizing damages to natural resources under the Superfund statute.

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Part A, at 5. However, the proposed surveys cannot be used for such a purpose because they fail to identify what actions are attributable to the Bay TMDL. Thus, even if the survey results provide some information on how persons value water quality, the survey results cannot be used to estimate the use and nonuse benefits of the Bay TMDL.

a. The surveys fail to identify the baseline of reductions that would occur without the TMDL.

When conducting an economic evaluation of an action, it is important to first identify the baseline that would occur absent the action. For example, when the Army Corps of Engineers evaluates the benefits of a water resources project, it first identifies the “without project condition.” Only benefits that would not accrue absent the project can be attributable to the project.

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In the context of its proposed benefits study, EPA has not identified the “without project condition” or even what actions will occur as a result of the Bay TMDL. Instead, EPA proposes to simply ask respondents to state their willingness to pay for generic improvements in water quality, expressed as inputs or outputs. The surveys do not differentiate between water quality improvements that would occur absent the Bay TMDL from water quality improvements that would occur as a result of it. In fact, the baselines are identified as conditions that would occur “if no further action is taken to reduce nutrients and sediment.” *See, e.g., Chesapeake Bay Stated Preference Survey, Input Version, Constant Baseline, May 22, 2012, at 10.*³ That is very different from a baseline that would occur if the Bay TMDL was not implemented.

For example, the generic water quality improvements described in the surveys could occur due to reductions in the deposition of nitrogen resulting from planned Clean Air Act regulations⁴, from reductions in nutrients resulting from controls on combined sewer overflows, from reductions in nutrients as a result of prolonged drought in the crop and pasture production areas of the region, from pre-existing agreements to upgrade wastewater treatment plants, or from pre-existing programs to address non-point source pollution.

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Most significantly, EPA’s surveys do not acknowledge the reductions that were already planned by watershed states as part of their Chesapeake Bay Tributary Strategies. In 2003, each state in the Chesapeake Bay Watershed agreed to nitrogen, phosphorus and sediment caps and, between 2004 and 2006, developed specific strategies to reduce loadings to achieve those caps.

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All of these previously planned reductions in nitrogen, phosphorus and sediment must be considered part of the “without project” or baseline conditions, that would occur without the TMDL. An

2-10

³ Other than the differences in whether the assumed benefits are based on inputs or outputs and the different future baselines discussed in footnote 1, the surveys are almost identical so the issues identified in these comments apply to all 4 surveys.

⁴ The TMDL acknowledges that nitrogen loading to the Bay will be reduced as a result of the Clean Air Interstate Rule and the Clean Air Mercury Rule, the Regional Haze Rule and guidelines for Best Available Retrofit Technology, the On-Road Light Duty Tier 2 Rule; the Clean Heavy Duty Truck and Bus Rule, the Clean Air Non-Road Diesel Tier 4 Rule, the Locomotive and Marine Diesel Rule, the Non-road Large and Small Spark-Ignition Engines Programs, and the Hospital/Medical Waste Incinerator Regulations. *See Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus, and Sediment, Dec. 29, 2010, at 6-28.* These reductions are the result of the Clean Air Act, not the TMDL.

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analysis of the benefits of the TMDL should be based only on any further reductions beyond this baseline.

- b. The surveys inappropriately include benefits associated with hypothetical lake improvements that cannot be attributed to the TMDL.

Another significant example of benefits unrelated to the Bay TMDL is EPA's proposal to ask respondents to include improvements to lake conditions, as well as improvements to the Chesapeake Bay and its tidal waters when considering their willingness to pay.

The Chesapeake Bay TMDL allocates total loadings of nitrogen, phosphorus, and sediment that reach the Chesapeake Bay to upstream sources based by subdividing loads reaching the Bay into the loads coming from the major rivers that feed the Bay. Those loads are then further divided into sub-basins, associated with smaller tributaries. The plans for implementing those allocations are based on modeled loadings of nitrogen, phosphorus, and sediment from rivers and streams with at least 100 cubic feet per second (cfs) mean annual flow (or 50 cfs if the subwatershed is gauged). *See* Feb. 20, 2008, Scientific and Technical Advisory Committee, Chesapeake Bay Watershed Model Phase V Review, at 2. Thus, the implementation plans are designed to reduce the amount nitrogen, phosphorus, and sediment that reach the rivers and streams that feed the Bay. Unless a lake is part of the tributary system of the Chesapeake Bay, nothing in the TMDL or in the TMDL implementation plans address nitrogen, phosphorus or sediment loadings to that lake.

This means that hypothetical benefits to lakes do not belong in a survey of hypothetical benefits of the Chesapeake Bay TMDL unless those benefits are limited to lakes that are part of the tributary system of the Bay. However, the proposed surveys fail to make that distinction. In fact, the survey questions do not even distinguish between lakes in the watershed and lakes outside of it.

The narrative part of the surveys (before the questions are asked) inform the respondents that the Chesapeake Bay Watershed includes thousands of lakes. Further, the surveys inform respondents that "[m]eeting the goals for water quality in the Chesapeake Bay would also affect freshwater bodies of the watershed." *See, e.g.,* Chesapeake Bay Stated Preference Survey, Input Version, Constant Baseline, May 22, 2012, at 12. In addition, each survey states: "[r]educing the amount of nutrients entering lakes will improve the appearance of the water and change the ecological conditions," and a table in each survey "shows the current condition and conditions in 2025 that scientists predict for lakes in the part of the watershed in your state if no further actions are taken to reduce nutrient and sediment pollution." *Id.* These statements imply that there is a relationship between the conditions of all lakes in the watershed and the TMDL, but that is a false assumption. EPA cannot count a person's willingness to pay for lake improvements as benefits resulting from the TMDL unless the survey questions clearly limit lake benefits to the very small subset of lakes that are part of the Bay's tributary system.⁵

⁵ EPA reference the "Northeast Lakes Model" developed by the EPA Office of Research and Development (ORD) as the basis for assumptions about lake conditions. However, no citation or link is provided and we were unable to find what lakes are included in that model. We do note, however, that the October 2011 report issued by ORD on "An Optimization Approach to Evaluate the Role of Ecosystem Services in Chesapeake Restoration Strategies,"

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2. The surveys fail to distinguish between respondents who live in the Chesapeake Bay Watershed and respondents who live outside of it.

2-12

EPA proposes to send the survey to a random sample of persons living in states that directly border the Chesapeake Bay, states that include portions of the Chesapeake Bay Watershed and other East Coast States. However, neither the surveys nor the proposed letters in attachments 6-12 of Part B of the Supporting Statement inform respondents whether or not they are residents of the watershed. This failure will introduce significant bias into the surveys. Direct costs associated with increased utility rates and storm water fees will be borne by persons living in the watershed. To reduce the “hypothetical bias” the surveys should inform people if these costs will actually fall on them.

3. The policy scenarios posed by EPA are misleading and unrealistic.

2-13

EPA states that its surveys “were designed by EPA based on the goal of illustrating realistic policy scenarios.” Part B of the Supporting Statement, at 23. However, EPA’s surveys are both misleading and unrealistic.

First, in the background information of all the survey versions, EPA fails to inform respondents that air deposition from power plants and automobiles are additional sources of nutrients in the Chesapeake Bay, but are not addressed by the Bay TMDL. EPA fails to inform respondents that sediments already in streams are a significant source of both sediment and nutrients to the bay, but are not addressed by the Bay TMDL. Finally, EPA fails to inform respondents that factors such as hurricanes and ocean currents also will greatly affect water quality in the Chesapeake Bay, irrespective of the Bay TMDL. *See, e.g., Chesapeake Bay Stated Preference Survey, Input Version, Constant Baseline, May 22, 2012, at 6-7.*

2-14

In all survey versions, EPA also tells the respondents that: “All forecasts for the year 2025 are based on monitoring data from the Chesapeake Bay Watershed and Estuary Models Developed by the Chesapeake Bay Program Office of the EPA in conjunction with state and federal partners.” *See, e.g., id.* at 10. This statement may have some validity for current conditions, but cannot apply to future conditions in 2025. First, as EPA well knows, 2025 is the target date for full Bay TMDL implementation, but EPA’s models cannot estimate the water quality at that time because the sequence of implementation actions is not known. Second, this statement is contradicted by the surveys themselves, which propose different outcomes in 2025 in the constant baseline and declining baseline surveys. It cannot be a true statement that both sets of outcomes are predicted by EPA’s models. EPA should replace this assertion with the admission that EPA does not, in reality, know what the water quality outcomes of the Bay TMDL will be, and should the agency let respondents know that improvements will be realized only over the long term.

2-15

It is particularly important to inform respondents of the potential length of time before water quality improvements will be realized. Failure to do so will increase the hypothetical bias in the surveys. EPA is aware of this issue. Question 16 (or 17, depending on the version) of the survey includes a response: “The changes offered by the programs happen too far in the future for me to really care

(EPA/600/R-11/001) does not even mention lakes and no ecosystem services provided by lakes are considered to be services provided by Chesapeake Bay restoration. Thus, the draft surveys also appear to be inconsistent with ORD’s view of the scope of TMDL benefits.

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about.” If respondents knew that changes will take decades, more respondents may agree with that statement.

2-16 Finally, EPA’s hypothetical costs have no basis in reality. As EPA admits, it has not developed an estimate of the costs of implementing the Bay TMDL. However, the costs are likely to be very high. High costs are relevant to the survey answers. Question 16 (or 17) of the surveys includes an answer: “I am concerned that the programs would hurt the economy.” That concern would be increased and could affect survey responses if the full costs of the Bay TMDL were known.

4. EPA should include a survey with an increasing baseline.

2-17 As EPA knows, water quality improvements would continue under a variety of programs absent the Bay TMDL. Given this fact, the surveys also should include a version with a baseline that shows water quality improvements absent the Bay TMDL.

5. EPA cannot double-count benefits.

2-18 EPA acknowledges that its proposed surveys are designed to capture both use (economic) and non-use values. In fact, EPA proposes to send more surveys to persons who live in the Chesapeake Bay Watershed to capture use value, and to send the surveys to some persons who live outside of the watershed in an attempt to capture non-use values. Part B of the Supporting Statement, at 4. EPA cannot add any benefits resulting from these flawed surveys to benefits derived from economic studies to come up with a total value of the benefits of the Bay TMDL. To do so would double count use benefits because the same use benefits could be captured by both the surveys and by economic studies.

6. The questions contain errors.

2-19 The “conditions in 2025” in several of the questions contain errors regarding whether the change to the input or output is an increase or no change.

7. EPA does not adequately explain its sampling methodology.

2-20 EPA fails to explain which surveys it plans to use and whether a statistically relevant sample of households will receive each survey.

Conclusion

2-21 For all of the foregoing reasons, EPA’s request for approval of an ICR for a survey on “Valuing Improved Water Quality in the Chesapeake Bay Using Stated Preference Methods” should be abandoned. The flaws in the survey design are too significant to correct. The data from such a survey will have no practical utility and will not meet the requirements of OMB’s information quality guidelines for utility, integrity and objectivity. This is a case where “a number based on a poor quality study is not necessarily superior to no number at all.”

Sincerely,

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American Forest & Paper Association

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Associated General Contractors of America
Delaware Maryland Agribusiness Association
The Fertilizer Institute
International Council of Shopping Centers
National Association of Home Builders
National Cattlemen's Beef Association
National Chicken Council
National Council of Farmer Cooperatives
National Pork Producers Council
National Turkey Federation
Oregon Women In Timber
Treated Wood Council
United Egg Producers
Virginia Poultry Federation
The Western Business Roundtable
West Virginia Forestry Association

RESPONSES TO COMMENT SET 2: Coalition of 18 Interest Groups (C18)

- 2-1 A complementary study of the costs of the TMDL is being conducted by EPA's Chesapeake Bay Program Office and will be issued by EPA after a peer-review is complete.
- 2-2 No response required.
- 2-3 No response required.
- 2-4 EPA recognizes that hypothetical bias is a potential concern in stated preference (SP) surveys and takes this concern seriously. In general, SP methods have "been tested and validated through years of research and are widely accepted by federal, state, and local government agencies and the U.S. courts as reliable techniques for estimating nonmarket values" (Bergstrom and Ready 2009, p. 26). A recent meta-analysis of the stated preference literature also concludes that hypothetical bias may not always be a significant concern (Murphy, et al. 2005).

To reduce the potential for hypothetical bias in this survey EPA has consulted with experts and drawn from peer reviewed literature to address it in the survey design. For example, the survey explicitly incorporates elements that allow mitigation of hypothetical bias, such as the use of reminders about budget constraints (akin to the cheap talk language in Cummings and Taylor 1999; List 2001). These features of survey design are shown to minimize hypothetical bias in experimental settings. The text used in this survey has undergone thorough testing with participants in focus group and one-on-one interviews. EPA believes that the steps taken during survey development and testing have largely mitigated the potential for hypothetical bias. See Section 3(b) of Part A of this ICR for more information on how we address hypothetical bias.

EPA recognizes the potential for non-response bias and the impacts it could have on the data analysis. First, EPA is taking steps to obtain the highest possible response rate, thereby mitigating non-response bias. Specifically, EPA is using focus group-tested design choices to encourage participation. EPA is also following the Dillman tailored design method (Dillman 2008) for mail surveys which includes an introduction letter preceding the survey, a reminder post card, and second mailing of the survey, and a reminder letter following the second survey.

EPA will also administer a non-response follow-up survey (Attachment 11) in both the pre-test and full survey in order to examine whether or not respondents are systematically different from non-respondents (see OMB 2006). In the non-response follow-up survey, households that do not return the survey will be randomly sampled to receive a short questionnaire by priority mail. The questionnaire will elicit basic demographic information as well as a few short questions regarding awareness and the reasons they did not complete the survey. Responses to these questions will be used to examine whether respondents are systematically different from non-respondents. See Section 2c of Part B of this Information Collection Request for a description of the non-response follow-up survey.

EPA agrees that it is challenging to measure complex environmental commodities. Standard survey design protocols were followed in developing the survey. As such, EPA conducted 10 focus groups and 72 cognitive interviews with individuals within and outside the Chesapeake Bay Watershed in order to test their level of understanding of the materials included in the survey (OMB Control Number 2090-0028). We used this standard protocol to identify the most salient environmental commodities that will be affected by the TMDL. Limiting the survey to those policy outcomes (i.e., water clarity, striped bass, oysters, blue crabs, and lake water quality) is conservative but we can be confident in the benefits we do capture from the survey.

2-5 EPA believes the survey has practical utility, as required by the Paperwork Reduction Act. The results of the study will be made available to state and local governments which they may use to better understand the preferences of households in their jurisdictions and the benefits they can expect as a result of meeting the TMDL. Finally, stakeholders and the general public will be able to use this information to understand the social benefits of improving water quality in the Chesapeake Bay Watershed to accompany the cost information also being developed by EPA. EPA also believes that the survey meets OMB's information quality guidelines. We agree that a number based on a poor quality survey is inferior to no number at all. Therefore, EPA is using standard survey design protocols in the design and implementation of the survey, including extensive focus group and interview testing, a pre-test, and a non-response follow-up analysis.

2-6 The attributes on the survey (i.e., water clarity, striped bass, oysters, blue crabs, and watershed lake conditions) were chosen because water quality and ecological modeling show that they will be affected by the nutrient and sediment reduction targets in the TMDL. EPA's National Center for Environmental Economics has been working closely with water quality modelers in the EPA Chesapeake Bay Program Office and the Office of Research and Development to quantify the impact of the TMDL on the chosen attributes.

EPA has also been working closely with ecosystem modelers in NOAA's Chesapeake Bay Office and National Marine Fisheries Service's Office of Habitat Conservation. Specifically, NOAA's modelers have provided assistance with the eco-system based fishery models "Ecopath with Ecosim" and "Atlantis." These consultations have been instrumental in examining the ecological impacts of reducing nutrient and sediment loads to the Bay of the ecosystem-based fishery models and will allow EPA to more accurately translate the values people place on the various attributes of the Chesapeake Bay highlighted in the survey to benefits estimates associated with the TMDLs.

2-7 The survey is indeed framed in a way to elicit "willingness to pay for generic improvements in water quality." This allows EPA to estimate the parameters for a range of policy outcomes, which will then be used to estimate a "benefits curve." To allow for a range in outcomes, EPA describes conditions in 2025 with the current programs in place and have developed three survey versions with different hypothetical future baseline conditions (i.e., with no additional programs), where environmental quality is increasing, decreasing, or constant, as described in Section 5b of Part B of this ICR. The benefits

curve will be used to estimate the incremental benefits of the TMDL relative to the most accurate baseline as predicted by the water quality and ecological models developed by EPA and NOAA. Sensitivity analyses will be conducted on the results of the survey to examine the effect of uncertainty in future levels of the environmental conditions, under both the baseline (i.e., without the TMDL) and TMDL scenarios.

Flexibility in the baseline and policy outcomes are important in this case because the Chesapeake Bay TMDL allows for adaptive management and additional offsets if the required nutrient reductions are not being met. So as population in the watershed grows over the future and landuse patterns change, these survey data will still be useful in estimating the benefits of nutrient and sediment reductions in the Chesapeake Bay.


- 2-8 The EPA recognizes that there are other programs and activities that will affect water quality in the Watershed. For this reason we have included an increasing baseline version of the survey to reflect the fact that absent new programs it is plausible that conditions will improve in the Watershed under these existing programs.
- 2-9 Again, the improving baseline version of the survey captures this scenario.
- 2-10 See 2-9.
- 2-11 EPA agrees that improvements to lakes that are not in the Watershed should not be included in the survey. We have made several modifications to the survey instrument to make it clear that only lakes in the Watershed should be considered. First, we have enhanced the map at the beginning of the survey to identify major cities within and outside the Watershed and added the Finger Lakes to the map (which are clearly marked as being outside the watershed). This helps orient respondents who are considering whether or not they “use” (i.e., engage in recreation activities) the Watershed. Second, we clearly describe the Watershed as including lakes and state that water bodies outside of the Watershed will not be affected by the programs. Finally, we include a follow-up question designed to test their level of understanding that conditions in lakes outside the watershed will not be affected by the programs described by the survey.
- 2-12 In addition to providing an enhanced map of the Watershed we identify which sampled households are in the Watershed and which are not. Respondents will be told in the cover letter of the survey if their home address is inside or outside the watershed. See Attachments 5 and 6 for examples of the cover letters.
- 2-13 The survey scenarios were designed based on the goal of illustrating hypothetical but realistic policy scenarios that “span the range over which we expect respondents to have preferences, and/or are practically achievable” (Bateman et al. 2002, p. 259). In the survey these scenarios are framed as generic policies in order to estimate the range of benefits for water quality improvements. These benefit estimates will then be used to estimate the incremental benefits of the TMDL relative to the baseline (see response 2-7).

The survey provides examples of sources of nutrients, including fertilizers, livestock manure, and household wastewater. The list is not intended to be comprehensive. As

stated above, different versions of the survey have different baseline assumptions, which will be used in the statistical analysis to reflect the fact that future conditions in the Bay, absent new programs, are uncertain. EPA agrees that this baseline uncertainty stems, at least partially, from the fact that the TMDL does not impact other sources of nutrients and sediments, including air disposition from outside the watershed, sediments, and hurricanes and ocean currents.

- 2-14 While the sequence of implementation is unknown the experimental design allows EPA to estimate benefits for a range of outcomes.
- 2-15 We added information to the survey to inform respondents that programs will be implemented over time, with full implementation occurring in 2025.
- 2-16 A separate analysis of the costs of implementing the TMDLs is being developed by EPA's Chesapeake Bay Program Office and will be available upon the completion of peer review.
- 2-17 EPA agrees and a version of the survey with an increasing baseline is now included in the Information Collection Request.
- 2-18 EPA agrees and does not intend to add the total monetized benefit results from this study with results from other studies, such as those that use revealed preference methods. The results from this study can be used to isolate nonuse values or used alone as a measure of total monetized benefits.
- 2-19 EPA carefully reviewed the survey instrument and has corrected typos.
- 2-20 Please see Section 2b of Part B of the ICR for the sampling methodology.
- 2-21 EPA is using state-of-the-science methods to assess the benefits of the TMDL for the Chesapeake Bay. As such EPA believes that the results will provide useful information to the public and decision makers on how society values improvements in environmental conditions in the Chesapeake Bay.

Attachment 13
Responses to Comments

 Food & Water Watch • 1616 P St. NW, Suite 300 • Washington, DC 20036
T +202.683.2500 • F +202.683.2501 • www.foodandwaterwatch.org



Dr. Natalie Simon
National Center for Environmental Economics
Office of Policy (1809T)
Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, DC 20460

Electronically to: oei.docket@epa.gov

Re: Valuing Improved Water Quality in the Chesapeake Bay Using Stated Preference Methods

August 24, 2012

Dear Dr. Simon:

3-1

The non-profit consumer advocacy organization Food & Water Watch respectfully submits the following comments to the U.S. Environmental Protection Agency on the new proposal to collect information on Willingness to Pay (WTP) for Chesapeake Bay Total Maximum Daily Load (TMDL) implementation. Food & Water Watch opposes the proposed survey on WTP. We believe that WTP surveys are inherently problematic in environmental rulemaking, that collective decisions, as embodied in rulemaking, are incompatible with individual, independent valuations. Most important, since the Bay TMDL includes a Water Quality Trading component, the entire cleanup plan is so flawed that moving forward with this undergirding document is a misplaced and mistimed priority.

3-2

WTP surveys attempt to put a price on a hypothetical. In this case, the hypothetical product is a cleaner Chesapeake Bay. The proposed study would try to assess WTP from three different populations: one-third each from states and the District of Columbia lying on the Chesapeake Bay, states in the watershed, and additional East Coast states not in the Bay watershed.¹ Using survey responses, the Agency proposes to calculate WTP from the survey responses.²

3-3

Unfortunately, these calculations are subject to significant doubt. Asking about WTPs for complex items, such as environmental and public goods usually seen by respondents as free, is challenging, and can lead to misestimating WTP.³

3-4

Indeed, the very idea of a WTP determination via survey is problematic. In one survey, the WTP was the same no matter the size of the environmental problem being investigated. This suggests that, rather than measuring the willingness to pay, the survey was measuring primarily the “warm glow” effect of declaring support for an environmental goal.⁴

3-5

There are many examples of the absurdity of WTP. One paper estimated that, on average, households were willing to pay up to \$70 annually for protection of the spotted owl in 1993.⁵ In constant dollars, this amount represents almost \$109 in 2011.⁶ There are approximately 100 million U.S. households, which would imply a total U.S. willingness to pay of over \$10 billion just to protect the spotted owl. Given that the total FY 2012 budget

request of the EPA was only \$8.973 billion,⁷ which is to protect all environmental interests in the U.S., it's clear the results of WTP surveys don't actually represent what they claim to represent, and that the proposed survey will not measure what it claims to measure.

3-6

Moreover, WTP analyzes the goal of clean water from the wrong perspective. Clean water is a societal goal that has some personal impacts. It is qualitatively different from other purchasing decisions we might make. As Nobel Prize winning economist Amartya Sen points out, a consumer's decision on purchasing a brand of toothpaste has no bearing on what everyone else does, nor is it effected by everyone else's purchasing decision.⁸ In contrast, societal spending decisions, as on environmental policy, is inextricably bound with every other person's spending. One person's willingness to spend is contingent on everyone else spending that same amount, since it's unreasonable to think that one person could clean up the Chesapeake.⁹ Yet the WTP survey supposes that it's reasonable to make environmental policy from this skewed perspective.

3-7

Finally, the WTP survey is part of a plan to implement a water quality trading scheme for the Chesapeake Bay.¹⁰ It is the position of Food & Water Watch that this scheme is both bad policy and legally incompatible with the Clean Water Act (CWA). The CWA set a strong and simple standard that polluting is illegal, and that the national goal is *zero* discharge of pollution into our public waterways.¹¹ A water quality trading scheme, which trades pollution "rights," is incompatible with this national goal.

3-8

Moreover, nothing in the CWA allows this kind of trading. All discharges under the CWA must be authorized by a permit.¹² Water quality trading schemes undermine these permits. A WTP survey that is used to advance an illegal trading regime is a poor use of the resources of the EPA.

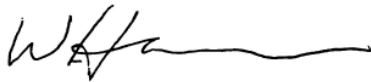
3-9

The Chesapeake Bay is the largest estuary in the United States.¹³ Its common value is immense. Clean water is a goal of the nation, not a commodity to be priced and sold according to the vicissitudes of a market survey.

3-10

Food & Water Watch commends the EPA for its focus on clean water for all, but requests that the focus remain on the steps that have already come so far in reducing pollution in the Bay: vigorous enforcement of existing Clean Water Act regulations and strengthening those regulations.

Sincerely,



Wenonah Hauter
Executive Director
Food & Water Watch

¹ “Supporting Statement for Information Collection Request for Willingness to Pay Survey for Chesapeake Bay Total Maximum Daily Load: Instrument, Pre-Test and Implementation: Part A.” Document number EPA-HQ-OA-2012-0033-0006. June 8, 2012, at 14.

² “Supporting Statement for Information Collection Request for Willingness to Pay Survey for Chesapeake Bay Total Maximum Daily Load: Instrument, Pre-Test and Implementation: Part B.” Document number EPA-HQ-OA-2012-0033-0009 June 22, 2012, at 16-18.

³ Brown, Thomas C. et al. “Which Response Format Reveals the Truth about Donations to a Public Good?” *Land Economics*. May, 1996, 72 (2) at 164.

⁴ Diamond, Peter A. and Jerry A. Hausman. “Contingent Valuation: Is some number better than no number?” *Journal of Economic Perspectives*. Vol 8, Number 4, Fall 1994, at 51.

⁵ Loomis, John B. and Douglas S. White. “Economic benefits of rare and endangered species: summary and meta-analysis.” *Ecological Economics*. Volume 18 (1996), at 199.

⁶ Food & Water Watch Calculation using US BLS - Bureau of Labor Statistics, Consumer Price Index, All Urban Consumers - 1913-2010, 1982-84=100.

⁷ United States Environmental Protection Agency. “FY 2012 EPA Budget in Brief.” Publication Number EPA-190-S-11-001. February 2011, at 1.

⁸ Sen, Amartya. “The discipline of cost-benefit analysis.” *Journal of Legal Studies*. Volume XXIX, June 2000, at 949.

⁹ Sen, Amartya. “The discipline of cost-benefit analysis.” *Journal of Legal Studies*. Volume XXIX, June 2000, at 950.

¹⁰ “Supporting Statement for Information Collection Request for Willingness to Pay Survey for Chesapeake Bay Total Maximum Daily Load: Instrument, Pre-Test and Implementation: Part A.” Document number EPA-HQ-OA-2012-0033-0006. June 8, 2012, at 3.

¹¹ Federal Water Pollution Control Act. (33 U.S.C. 1251 et seq., [As Amended Through P.L. 107-303, November 27, 2002]) Title I, Section 101 (a).

¹² See, e.g., Federal Water Pollution Control Act. (2002), Section 402, which lists acceptable permitting options for point source discharges.

¹³ Bratton, John F. et al. “Birth of the Modern Chesapeake Bay Estuary Between 7.4 and 8.2 Ka and Implications for Global Sea-Level Rise.” *USGS Staff-- Published Research*. Paper 285. January 1, 2003, at 1.

RESPONSES TO COMMENT SET 3: Food and Water Watch (FWW)

- 3-1 Thank you very much for the detailed comments. Stated preference surveys (or surveys to measure WTP) have been used by a variety of federal agencies to assess the benefits of regulations and federal activities (see, for example, NOAA 2002; USEPA 2008, 2009; U.S. Bureau of Reclamation 2012). The use of stated preferences studies (i.e., WTP studies) is consistent with EPA's peer-reviewed *Guidelines for Preparing Economic Analyses* (USEPA 2010) and OMB Guidelines, Circular A-4 (OMB 2003). The use of a choice experiment design is consistent with standard practice in the peer-reviewed literature for valuing environmental resources (see Freeman 2003; Bennett and Blamey 2001; Louviere et al. 2000). The individual choices reflected in each household survey response are aggregated with other household responses to estimate a total value for the resource. The stated preference survey is not part of a water quality trading plan, nor will the results of the survey be used to develop a trading plan. The survey is designed to estimate the welfare impacts of water quality improvements and will have no bearing on how those improvements are achieved.
- 3-2 No response required.
- 3-3 We agree that the Bay is a complex resource and estimating a total value is challenging. EPA conducted 10 focus groups and 72 cognitive interviews with individuals within and outside the Watershed. These standard protocols allowed for testing of individual's understanding of the materials included in the survey instrument. This approach was used to identify the most salient environmental resources that will be affected by the TMDL. Limiting the survey to those outcomes (i.e., water clarity, striped bass, oysters, blue crabs, and water quality of lakes in the watershed) is conservative, but means that we are more confident in the benefits we do capture from the survey.
- 3-4 The study that is referenced (i.e., a citation in Diamond and Hausman 1994 to Desvousges 1993) is almost 20 years old and uses methods that are no longer considered standard (e.g., use of convenience samples). It is standard to include debriefing questions to capture various biases that may appear in survey responses, such as "warm glow." As such we have included questions to capture respondents who may be responding in such a way.
- 3-5 The study that is referenced (i.e., Loomis and White 1996) is a meta-analysis based on older studies, many of which were unpublished or not peer-reviewed. While examples of implausible survey results exist, including appropriate debriefing questions, use of focus groups, and pre-testing reduces such occurrences. This project is based on current survey design methods reflecting careful design choices. In addition, the survey instrument will be pre-tested with a small sample to determine whether or not responses are plausible and consistent with economic theory.
- 3-6 Stated preference surveys capture individual preferences for public goods, that is environmental resources that are shared by all. The choices individuals make in the experimental setting reflect the trade-offs, or preferences, for that individual between environmental improvements and costs. By examining and aggregating individual

preferences or choices using the analytical methods described in Section 5 of Part B of this Information Collection Request, the researcher (i.e., EPA) is able to discern a value from the sample of individual choices for the various environmental improvements (also called “attributes”) in the survey. The survey clearly states that many households are being asked about their preferences and choices, and therefore does not imply that any one person would be solely responsible for the program choices.

3-7 and 3-8

The stated preference survey is not part of a water quality trading plan, nor will the results of the survey be used to develop a trading plan. The survey is designed to estimate the welfare impacts of water quality improvements and will have no bearing on how those improvements are achieved.

3-9 Stated preference surveys are routinely used in federal agencies to estimate the value of non-market goods (see, for example, U.S. EPA 2008, 2009; U.S. Bureau of Reclamation 2012). It is not a method to determine a “price” for a good to be sold, but rather a method to reflect society’s value of the resource. There are no plans to “sell” the Chesapeake Bay.

3-10 Enforcement remains an important and relevant goal of the EPA.

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Attachment 13
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