April 23, 2020

Dr. Shaunta Hill-Hammond
Designated Federal Officer
EPA Science Advisory Board (1400R)
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: Public Meeting of the Science Advisory Board Economic Guidelines Review Panel,
Revised document "Guidelines for Preparing Economic Analyses" April 3, 2020 version

Dear Dr. Hill-Hammond and Review Panel Members

I was unable to attend the public meeting today but did want to provide you several comments on the past and currently proposed Guidelines, as well as on future EPA actions using or referring to economic analysis of regulations or other public policies.

I am writing in my expert capacity as the former Director of the Division of Policy and Regulatory Analysis in the Office of the Secretary, Department of Health and Human Services (HHS), and as the author or reviewer of hundreds of Regulatory Impact Analyses (RIAs). I led either the regulatory policy development, or RIA drafting, or both, on many of the HHS rules that have had major life-saving benefits or major cost reductions in the last four decades. I participated in drafting both Executive Orders 12291 and 12866, as the lead HHS representative. I led the government-wide task force under then OIRA Administrator Sally Katzen that created electronic rulemaking, subsequently adopted and centralized through regulations.gov. I have studied regulatory impact analysis and procedures extensively (see, for example, my analysis of Regulatory Flexibility Act compliance at http://www.sba.gov/sites/default/files/files/rs215tot.pdf), and participated in the preparation of the official HHS *Guidelines for Regulatory Impact Analysis* (https://aspe.hhs.gov/system/files/pdf/242926/HHS_RIAGuidance.pdf). In sum, I bring to my review of this matter considerable expertise in the purposes and methods of good economic analysis of the benefits and costs of government regulatory policies and programs. I consider myself an expert in both the use and misuse of economic analysis, having seen many examples of both. My comments on this document do not represent the views of any former or current employers.

EPA is to be commended for seeking outside input into these important Guidelines. Despite my criticisms below, I believe the Guidelines are an important and useful tool that, with minimal editing, can be improved enough to be a useful government-wide model in preparing benefit-cost and related economic analysis.

Comment 1. Value of a Statistical Life Year

For decades EPA's published Regulatory Impact Analyses (RIAs) have estimated the life-saving benefits of its rules using the concept of Value of a Statistical Life (VSL). It has rarely if ever

included an estimate of benefits using the primary alternative concept, Value of a Statistical Life Year (VSLY) or its close cousin Quality-Adjusted Life Year (QALY). The current draft Guidelines include brief discussions of all three measures but no analysis of their comparative merits in actual economic or regulatory analysis. Moreover, the draft Guidelines incorrectly state that QALYs are inconsistent with valid benefit-cost analysis (at page 7-51). To the contrary, QALYs are a valid and useful tool in analyzing any regulatory policy with any effects on human lives, particularly those that affect persons disproportionately at either end of the age and wellness spectrums. Their utility is not limited to health measures. I believe it is now the prevailing standard among expert practitioners of benefit-cost analysis to strongly prefer the use of VSLY to VSL in estimating the life-saving benefits of regulations. The superiority of the VSLY concept was most ably and persuasively described in Cass Sunstein's *Lives, Life-Years, and Willingness to Pay*, Coase-Sandor Institute for Law and Economics, University of Chicago Law School, 2003 (at https://chicagounbound.uchicago.edu/law_and_economics/311/). The official guidance on regulatory impact analysis of the Department of Human Services (HHS) strongly endorses the use of VSLY or QALY as a superior measure. It is not the purpose of my comments on the draft EPA guidelines to make the case for the superiority of the VSLY measure. Sunstein does that more ably by far than I could, and I rest my case on his arguments and especially on his accurate and powerful conclusion that "a focus on statistical lives is a more plausibly a form of illicit discrimination than a focus on life-years, because the idea of statistical lives treats the years of older people as worth far more than the years of younger people" (page 1).

I strongly recommend that the EPA draft be revised to include the arguments for use of VSLY and state that the future policy of EPA will be to use VSLY, or both VSLY and VSL, or VSLY and QALY and VSL, but never VSL only. I note that the use of VSLY stirred up considerable public controversy several decades ago, and that OIRA backed off proposing its use as a government-wide standard. Although the HHS guidelines have created no controversy over the last four years, and the ethical arguments in favor of VSLY or QALY are compelling, this could prove controversial at the present time, given the age distribution of those dying from the coronavirus. EPA should nonetheless take the position that the ethically and analytically better positions should not be rejected for public relations purposes.

Comment 2. Reanalysis of Past EPA Regulatory Impact Analyses

Past EPA RIAs totally dominate all historical tabulations of the costs and benefits of federal regulation, such as the annual OMB *REPORT TO CONGRESS ON THE BENEFITS AND COSTS OF FEDERAL REGULATIONS.* This is because EPA regulations are quite atypical in often having benefits (and sometimes costs) that are much larger than those of other federal agencies. In fact, the benefit totals for EPA rules are higher than those of all other agencies combined in the latest OMB tabulation (published in 2017). Yet the benefit dominance of EPA rules in such tabulations reflect little more than the use of a VSL measure rather than a VSLY or QALY measure. This essentially arbitrary (at best) and in reality inferior measure massively distorts the historical record, quite apart from its possible distortion of regulatory choices in particular rules (for example, a QALY measure would demonstrate the importance of far more rapid and effective actions to reduce lead in drinking water supplies). Most if not all EPA rules are demonstrably cost-beneficial no matter what methodology is used, but only the use of VSL estimates make

benefits exceed costs five- to twenty-fold (low and high estimate range) as shown in the 2017 OMB tabulation.

I therefore recommend that EPA develop in collaboration with OMB a new historical analysis that converts all past VSL estimates to VSLY or QALY estimates. This can readily (though roughly) be done by using the age distributions of lives saved in each major rule and then converting these estimates to current dollars. (While EPA is at this task, it would be useful to ensure that all RIA documents created over the last four or five decades are compiled online for future research use.)

Comment 3. Using Complete Benefit Cost Estimates, Honest Modeling Assumptions, and Uncertainty Estimates: The Cost of Carbon Case

The official and deeply flawed interagency "cost of carbon" estimates created in the last Administration had a substantial number of analytic and estimating problems. Avoiding three of them are vital to all valid benefit-cost analysis and should be explicitly addressed in the Guidelines as examples of analytic errors that EPA will neither commit nor countenance by participating in creating or using any such invalid and incomplete estimates in the future (whether on "cost of carbon" or another topic). Identification and correction of these errors and preventing their occurrence in all future regulatory impact analysis on any rule, the economic analysis of any public policy issue, or economic analysis in any official government report is separate and distinct from dealing with improvements in modeling and estimating techniques related to CO2, such as those addressed in the National Academies of Sciences report.

(a) The first problem is that those estimates did not include an explicit or complete estimate of offsetting benefits as well as costs. Only one of the "Integrated Assessment Models" (IAMs) on which the cost of carbon estimates relied even allowed for the possibility of benefits, and those only for increases in agricultural productivity due to increased availability of CO2 to plants. While those increases are very substantial, there is another set of environmental benefits due to the reduced amount of land needed for agricultural production, and massive increases in "natural" areas as well as in overall plant growth, sometimes termed the "greening" of the earth (for a discussion of this phenomenon, see the NASA website at https://www.nasa.gov/feature/goddard/2016/carbon-dioxide-fertilization-greening-earth, and the Matt Ridley article "Rejoice In The Lush Global Greening" at the Global Warming Policy Forum (https://www.thegwpf.com/matt-ridley-rejoice-in-the-lush-global-greening/). **No valid benefit-cost estimate should omit an appropriately broad estimate of the positive side of the ledger**. Indeed, the interagency estimate did include some benefits since it averaged the results of three IAM models, one of which had a small benefit estimate for increases in agricultural productivity. But that essentially accidental inclusion was inherently a vast underestimate when divided by three, and itself did not address any of the environmental benefits, to say nothing of the sheer scale of the agricultural productivity increases shown in recent research. What is arguably worse is that all three of the models simply assumed by "guesstimate" major environmental harms without even allowing for major environmental benefits. These errors transformed what could have been an honest estimate of net costs into what was little more than a piece of propaganda.

(b) The second problem is that the underlying climate models and derivative IAM models themselves were based on the estimated effects of a false set of negative assumptions about future population growth, future economic productivity, and future fossil fuel use, as well as assuming that farmers and others do not adjust their behaviors to take advantage of climate changes (e.g., by extending the range of wheat farming to the north, as is already happening on a large scale). **No valid benefit-cost analysis should use false assumptions designed to exaggerate either benefits or costs**. And as required under OMB Circular A-4, if any assumptions dictate the analytic results, their validity should be carefully analyzed and justified. The invalid and arbitrary assumptions in the cost of carbon estimates, often termed falsely to be "business as usual", are included in a fantasy projection called RCP 8.5. RCP 8.5 should never have been used in modeling. But to use it without a sharp contrast to realistic projections of all the factors mentioned above is not only to lie by false labeling, but to lie by omission. There is a substantial literature on the falsehoods and fallacies in the climate models use of RCP scenarios, none of it mentioned in the draft EPA Guidelines. For a recent summary with extensive references to the refereed literature, see the just-published Roger Pielke, Jr. and Justin Ritchie, "Systematic Misuse of Scenarios in Climate Research and Assessment" at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3581777.

(c) The third problem is that the despite the OMB Circular A-4 requirement, these estimates did not include a range of estimates (high and low) to encompass the uncertainty in the estimates of both benefits and costs. (This is an analytic requirement quite separate and apart from use of two discount rates, and should have led to the presentation of six estimates, one each for the best, highest, and lowest estimate, at each interest rate.) Presenting those ranges is the basic purpose of the "accounting table" requirement in Circular A-4. The cost of carbon estimates included no such range. **No valid benefit-cost analysis should neglect to provide a range of possible results depending on alternative behavioral or factual assumptions along with some kind of probabilistic assessment.** (in the case of HHS agency CMS, for example, it is common to use an estimate of plus or minus 25% as a range for costs or benefits that are reasonably likely to be near the best estimate.)

The current draft of the EPA Guide contains no references to these kinds of errors either generically or with respect to cost of carbon and other climate estimates in which EPA economists have participated in drafting. (The Fourth as well as earlier National Climate Assessments both rely heavily on the invalid RCP 8.5, even though it is impossible for that scenario to be reasonably applied to a USA with a massive switch from coal to natural gas, a negligible population growth rate, and a continuing decrease in the energy intensity of the economy.)

I therefor recommend that the draft Guide be amended to include a brief discussion of these three kinds of errors with respect to avoiding them in all benefit-cost analyses, and as an excellent example a brief discussion of their presence and importance in IAMs generally and the estimates published (or omitted) in the previous Administration's cost of carbon estimates and in the National Climate Assessments. Especially since the draft already discusses IAMs, explanation of their weaknesses and errors is essential to a balanced Guide. Appropriate citations to the relevant literature on such errors should be added to the Guide. As it happens, some state and

local government and some judges have been misled to believe that the existing cost of carbon estimates are expert and reliable and valid to be used in making energy and other decisions. Accordingly, the discussions to be added should explicitly conclude that the existing cost of carbon estimates are invalid and incomplete, violate these three principles of valid benefit-cost analysis, and should never be used in making public policy decisions of any kind.

Conclusion

The draft Guidelines contain a substantial number of debatable and arguably invalid assumptions and examples with little or no serious presentation of better or essential alternatives. They are therefore misleading as well as biased on some key dimensions of economic analysis and benefit-cost analysis in particular. I strongly recommend that the problems discussed above be rectified by appropriate editing of the document. That said, I certainly recognized and agree that most of the discussion and analysis in the draft Guide is valid and appropriate. These are easily remedied problems.

It is doubly important that these corrections be made so that in the future EPA economists and policy analysts can politely and resolutely decline to participate in any economic analyses that seek a veneer of universal agreement by government experts when they are in fact deliberately producing biased estimates. There is a temptation in every Administration to produce estimates that support policy preferences, and the integrity and independence and EPA analysis can be strengthened by using these changes in the draft Guidelines as “markers” limiting the use of EPA in biased analysis.

Sincerely,

Walton Francis, M.A., M.P.A, M.P.P.