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To: Lorraine D. Hunt OIRA BC RPT/OMB/EOP@EOP
cc: "Green, Kenneth" <keng@fraserinstitute.ca>, "Smith, Anne" <ASmith@crai.com>
Subject: Comments on Draft Guidelines Report on Costs and Benefits of Federal Regulation

To: OIRA, OMB

I would like to commend OIRA for an excellent report that should be useful in stimulating better methods for dealing with uncertainty, especially in dealing with the health impacts of reducing air pollutants such as fine particulate matter and ozone in ambient air. The summary Tables 1 and 2 show that the benefits and costs ascribed to reducing these air pollutants are the largest such numbers among the Federal regulations reviewed in this report. There should be a wide range of uncertainty ascribed to the health impacts of many federal regulations, and to regulations on these air pollutants in particular. Regulatory agencies should improve on using single fixed point estimates of benefits and costs by considering alternatives to key assumptions. Probabilistic methods should be useful to characterize uncertainties on benefits and costs and to convey a greater understanding of these uncertainties to decision makers and the public. Such improved methods should lead to better future decision making on important and costly Federal regulatory decisions.

I became very impressed with this report when I read footnote 8 on page 10. Recognizing the key importance of uncertainties in air pollution benefits assessment is overdue at both OMB and EPA. This footnote does a commendable job of raising major issues for attention. It is not a straightforward matter to deal with the issues raised in this footnote.

In November of 1998 both John Graham and I made presentations to the Environmental Economics Advisory Committee of the EPA Science Advisory Board. My letter to the committee chair can be found at www.epa.gov/sab/pdf/eeac1198.pdf on pages 14-17 of the pdf text. In the letter I asset that EPA's draft guidelines for cost benefit analysis need increased emphasis and better methods for considering uncertainty, and better coordination between risk assessment and regulatory impact analysis within EPA. I provided a number of references to reports of the National Research Council and other professional literature that address these issues. Please consider this letter from 1998 as an appendix to my comments.

A much longer report piece that addresses uncertainties in the health benefits from control of ozone and particulate matter is "Costs, Economic Impacts, and Benefits of EPA's Ozone and Particulate Standards," prepared for the Reason Public Policy Institute as Public Policy Study #226, June 1997, by Anne Smith, myself, and others from Decision Focus Incorporated of Mountain View, my employer of that time. Kenneth Green, now at the Frazier Institute in Vancouver, BC, was the project director for this report. This report is highly critical of the cost-benefit analysis in EPA's Regulatory Impact Analysis of the proposed revised NAAQS for ozone and particulate matter. The points on which this report criticizes the EPA analysis are similar to the 5 issues listed in Footnote 8. If OIRA staff are not already familiar with this report, I urge that they obtain it and read it as an example of the type of methodology being encouraged with the new Guidelines. A copy may be obtained from Dr. Smith, Dr. Green, or myself.

I have read part II, the Proposed Guidelines, and I believe it contains many commendable ideas that need to be tried in practice. In particular, I support the proposal for formal probabilistic analysis of the key scientific and economic uncertainties for rules with economic effects that exceed \$1 billion per year. However, characterization of uncertainty through formal probabilistic methods is not a simple and straightforward matter of implementing readily available methods. As OIRA notes on page 43, methods now in use in the regulatory agencies for

estimating costs and benefits are, indeed, "varied." It may take time, research, and training to enable regulatory agencies to learn how to carry out and communicate formal probabilistic analysis.

Section D beginning on page 127 of OMB's draft Guidelines describes the appropriate concepts, but this key section is broadly written and does not provide illustrative examples or extensive references to the professional literature. (See my 1998 letter, referenced above.) An ongoing, extensive research program is needed to develop and refine the needed methodology. Research on probabilistic methods and application of these methods to the ambient air lead standard have been done in the past by OAQPS, and current research is being carried out by leading university groups such as John Evans and his colleagues at Harvard and Granger Morgan and colleagues at Carnegie-Mellon University. I urge OIRA both to encourage the funding of such research by EPA and other Federal regulatory agencies and to monitor closely the progress of regulatory agencies in using formal probabilistic methods. Extensive peer review will be appropriate through such institutions as the EPA Science Advisory Board and similar bodies in other regulatory agencies, the National Research Council, and professional societies in risk analysis, decision analysis, and economics.

In summary, I congratulate OIRA on a good draft reports and on its willingness to encourage agencies to improve their methodologies for characterizing uncertainties in benefit cost analysis. I hope OIRA will continue this emphasis in months and years to come. Especially in Section D, the draft report needs more detail and references, in order to be more persuasive to the skeptics and to help agencies to learn how to improve their analysis with respect to characterizing uncertainties.

Please feel free to contact me if you have questions or desire clarification of any matter addressed in these comments. I will be away from my address and telephone numbers listed below, from March 31 to April 20. please use e-mail to communicate with me during that time.

Sincerely,

D. Warner North

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(Affiliations for identification purposes only):

President and Principal Scientist, NorthWorks, Inc.

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Past President, 1991-2, Society for Risk Analysis

Committee member for numerous National Research Council/National Academy of Sciences reports dealing with risks from environmental pollutants, including: Risk Assessment in the Federal Government: Managing the Process (1983), Science and Judgment in Risk Assessment (1994), and Understanding Risk: Informing Decisions in a Democratic Society (1996).

Past member of numerous committees of EPA's Science Advisory Board, including the Ozone Subcommittee of the Clean Air Scientific Advisory Committee (In a recent e-mail from SAB staff I was told that this committee is still "active" and I am still on it, although to my knowledge it has not met in more than 5 years).