



*promoting responsible environmental,
health, and safety decision-making*

**THE ANNAPOLIS ACCORDS
FOR BENEFIT- COST
ANALYSIS**

Executive Summary

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THE ANNAPOLIS CENTER

The Annapolis Accords For Benefit-Cost Analysis

Growing concern over the effect of environmental, health and safety policies on the economy has lead to increased consideration of the benefits and costs of such policies. Benefit-cost analysis has been used as a means of comparing the positive impacts, benefits, with the negative impacts, costs. Benefit-cost analysis can result in improved environmental, health and safety decision-making and prioritization, if decision-makers are to apply it appropriately.

The purpose of the *Annapolis Accords For Benefit-Cost Analysis* is to provide guidelines on how benefit-cost analysis can be used more effectively to evaluate proposed policies. Policy alternatives cannot be compared, and management decisions should not be made, unless the risks associated with a particular hazard are identified and the benefits and costs of regulating that hazard are quantified. The *Annapolis Accords For Benefit-Cost Analysis* have been developed for decision-makers, and others, to use to understand how risk assessment and benefit-cost analysis can be incorporated in the decision-making process for the development of legislation, regulations, or operational policy.

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The *Annapolis Accords For Benefit-Cost Analysis* are based, in part, on two earlier documents produced by The Annapolis Center: the "Annapolis Risk Accords" and the "Benefit-Cost Analysis Principles." These accords are not the work product of the authors of those earlier documents. The *Annapolis Accords for Risk Analysis: A Citizen's guide to Risk Assessment and Risk Management* was the result of a workshop sponsored by The Annapolis Center in May, 1994. Workshop participants included a broad spectrum of prominent scientists, economists and risk managers. *The Benefit-Cost Analysis in Environmental, Health and Safety Regulation: A Statement of Principles* was the result of workshop funded by The Annapolis Center, and sponsored jointly with the American Enterprise Institute and Resources for the Future in September, 1995. Workshop participants included a group of leading economists.

BENEFIT-COST ANALYSIS AS A DECISIONMAKING TOOL

Benefit-cost analysis should be an integral part of the decision-making process. Decision-makers should consider the benefits and costs of proposed policies during the decision-making process. Benefit-cost analysis should be used to provide information to decision-makers and the public on the benefits and costs of policies to protect public environmental, health and safety quality. Decision-makers should not be bound by a strict benefit-cost test, but they should be able to justify

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decisions where expected costs exceed expected benefits, or where costs are uncertain or in dispute.

Benefit-cost analysis should be used to identify the distributional consequences of a policy. Benefit-cost analysis should be used to compare the negative impacts of policy decisions, such as job losses or increased costs to an industry in a local economy, with the positive impacts, such as improved health. As a decision-making tool, benefit-cost analysis allows decision-makers to consider the positive and negative impacts of a policy before it is implemented.

Benefit-cost analysis should be used to design policy strategies that achieve a desired goal at the lowest possible cost. In the past, environmental, health and safety policies have relied on a one-size-fits-all or command-and-control approach. Benefit-cost analysis can highlight the extent to which cost savings can be achieved using alternative, more flexible approaches, such as performance standards and market-based approaches, that reward compliance at a lower cost to society.

Policy makers should attempt to incorporate benefit-cost analysis in the decision-making process at all levels of government. Decision-makers at all levels of government should be encouraged to consider the benefits and cost of proposed policies. The scale of the benefit-cost analysis should depend on the risks involved, the timeframe of the decision-

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making process, and the available scientific and economic information. Although a comprehensive benefit-cost analysis may not be warranted in all cases, a rough benefit-cost analysis can be useful in providing decision-makers with an estimate of the benefits and costs of a proposed policy.

Whenever possible, decision-makers should rely on more than one benefit-cost analysis to consider, and weigh, a variety of regulatory options. To increase the amount of information available to decision-maker(s), a variety of policy alternatives for achieving a desired goal should be considered. To accomplish this, more than one benefit-cost analysis should be performed so that the benefits and costs associated with various alternatives can be estimated and compared.

ASSESSMENTS OF BENEFITS AND COSTS

A quality benefit-cost analysis depends on the availability of a scientifically sound risk assessment. A scientifically sound risk assessment of a hazard should include all relevant peer-reviewed, up-to-date information which takes into consideration all potential consequences for human health, quality of life, and health of ecosystems. A risk assessment should clearly communicate sources, assumptions, limitations and uncertainties in the available scientific data. (See *The Annapolis Accords for Risk Analysis: A Citizen's Guide for Risk Assessment and Risk Management.*)

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Risks need to be estimated qualitatively and quantitatively before benefits and costs can be measured. Assessments of risk should use all relevant information necessary to characterize a potential health or environmental hazard. Both quantitative and qualitative estimates of risk should be based on clear definitions of hazards, types and amounts of exposures, the variability of response among affected populations, and effects over time. The benefits and costs of protecting the public from a hazard cannot be estimated until the risks of that hazard and the uncertainties are qualitatively and quantitatively identified.

All key assumptions should be spelled out clearly and, whenever possible; uncertainties should be identified and discussed. A core set of economic assumptions should be used in calculating the benefits and costs associated with environmental, health and safety regulations. Key assumptions include the social discount rate, the value of reducing risks and accidents and premature death, and the value associated with other improvements in health. If uncertainties exist in the available scientific and economic information, estimates based on this information should be clearly identified and discussed.

Benefits and costs should be quantified whenever possible. Not all impacts of a regulatory policy can be quantified, or expressed in monetary terms. The available information may imply ranges of possible values for estimating benefits and costs, and

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not single numbers, which makes quantification difficult. When this occurs, best estimates of the costs and benefits should be included along with a description of the uncertainties. This will prevent qualitative factors that are not easily quantified from being ignored in a benefit-cost analysis.

Peer review is a necessary part of a complete benefit-cost analysis. Given the uncertainties inherent in benefit-cost analysis, the results of a benefit-cost analysis should be peer-reviewed by an outside panel of economic and scientific experts. Before a benefit-cost analysis is performed, guidelines should be established by an outside review body for agencies to follow in conducting benefit-cost analysis. These guidelines should be revised periodically on the basis of new scientific and economic information.

MISSION

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The Center disseminates information and conducts activities which foster impartial, non-partisan, results-oriented dialogue among scientists, decision-makers, journalists, opinion leaders and the general public.

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