

## **ATTACHMENT 4**

Considering Cumulative Effects Under the National Environmental  
Policy Act

COUNCIL ON ENVIRONMENTAL QUALITY (CEQ)

Booklet CH. 1, p. 1

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## INTRODUCTION TO CUMULATIVE EFFECTS ANALYSIS

Evidence is increasing that the most devastating environmental effects may result not from the direct effects of a particular action, but from the combination of individually minor effects of multiple actions over time.

Some authorities contend that most environmental effects can be seen as cumulative because almost all systems have already been modified, even degraded, by humans. According to the report of the National Performance Review (1994), the heavily modified condition of the San Francisco Bay estuary is a result of activities regulated by a wide variety of government agencies. The report notes that one mile of the delta of the San Francisco Bay may be affected by the decisions of more than 400 agencies (federal, state, and local). William Odum (1982) succinctly described environmental degradation from cumulative effects as "the tyranny of small decisions."

The Council on Environmental Quality's (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) define cumulative effects as

the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions (40 CFR § 1508.7).

The fact that the human environment continues to change in unintended and unwanted ways in spite of improved federal decisionmaking resulting from the implementation of NEPA is largely attributable to this incremental (cumulative) impact. Although past environmental impact analyses have focused primarily on project-specific impacts, NEPA provides the context and carries the mandate to analyze the cumulative effects of federal actions.

NEPA and CEQ's regulations define the cumulative problem in the context of the action, alternatives, and effects. By definition, cumulative effects must be evaluated along with the direct effects and indirect effects (those that occur later in time or farther removed in distance) of each alternative. The range of alternatives considered must include the no-action alternative as a baseline against which to evaluate cumulative effects. The range of actions that must be considered includes not only the project proposal but all connected and similar actions that could contribute to cumulative effects. Specifically, NEPA requires that all related actions be addressed in the same analysis. For example, the expansion of an airport runway that will increase the number of passengers traveling must address not only the effects of the runway itself, but also the expansion of the terminal and the extension of roadways to provide access to the expanded terminal. If there are similar actions planned