

# Cumulative Effects Analysis Pursuant to the National Environmental Policy Act (NEPA)

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Preparers of environmental documentation pursuant to the National Environmental Policy Act (NEPA) must take a step back and view the action from a broader perspective (or “on a broader scale.”). You charter your project; define your action; develop your alternatives; and charge forward with your analysis. But, this is the point when you should also define what else is going on in the area. What is happening downstream? Who is moving in next door? What else is on the horizon? What happened recently that may be relevant to your action? As seen in the courts, cumulative effects analysis has been a target for those who wish to bring a legal challenge (Smith, 2005; Swartz, 2010). This paper focuses on the steps practitioners can take to fulfill the NEPA requirements for cumulative effects analysis and thereby make their environmental documentation less susceptible to successful challenge and more defensible.

## Background

Consideration of cumulative effects was not included in the original 1970 NEPA Statute. The statute did however establish the Council on Environmental Quality (CEQ) to oversee the NEPA process. The regulations we follow today were developed by the CEQ in 1973 and substantially revised in 1978. CEQ defined a cumulative effect as “an 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). While the regulations gave little detail on what past, present, and reasonably foreseeable mean, they do distinguish cumulative effects from direct effects – those which are caused by the project action and occur at the same place and time – and indirect effects – those also caused by the project action but occur at a later time and/or farther removed in location (40 CFR 1508.8). Cumulative effects, by contrast, encompass the direct and indirect effects of the project action and other past, present or reasonably foreseeable actions that are related in the sense that they may affect the same resources as the project action.

Table 1 introduces a hypothetical project with examples of direct effects, indirect effects, effects of other related actions, and cumulative effects. As shown, the project action may have incrementally minor impacts, but the cumulative impact may be severe. The opposite can also be the case.

TABLE 1  
Examples: Types of Impacts and Cumulative Effects  
Project Action: A branch of the military proposes to relocate units and construct and operate a training center on a base.

Direct Impact	Indirect Impact	Impact of other Actions	Cumulative Effects
Relocation of staff and their families results in additional traffic in the area.	Off-base road conditions are more quickly degraded.	A superstore is being constructed in the same town, increasing traffic on the same roadways.	There will be more traffic congestion and wear on the roads than anticipated from either approach.
Construction of the facility increases the area of impervious surface, resulting in increased stormwater runoff.	Stormwater on the base flows into an adjacent river through a system of natural drainages that are currently at capacity. The additional construction will cause flooding.	An on-base road widening project requires replacement of the drainage system.	If the cumulative change in stormwater flow is not considered, the drainage system replacement will not address the potential for flooding associated with the new operations center.
Construction of the training center involves clearing 100 acres of woods, reducing the area available for hunting by 50%.	There is additional hunting pressure on the remainder of this tract and the other forested tracts on the base.	A corridor is being cut for a new transmission line in the same tract impacted by the training center. In addition, approximately 20% of the area was logged within the last year.	The cumulative effect is elimination of 90% of the area available for hunting in the tract impacted by the training center and additional hunting pressure on other forested tracts on the base.

The regulations pertaining to cumulative effects are unclear. Through the 1980s, reasonably foreseeable was defined as “including catastrophic events, even if the probability of occurrence is low.” Obviously this did not help clarify the range of potential future actions that should be included. Through subsequent case law, it was clarified that reasonably foreseeable future actions need to be considered even if they are not specific proposals or defined projects. The criterion for excluding future actions is whether they are “speculative” (EPA, 1999). Speculative is to be defined in the EIS, often drawing upon Agency guidance or precedence.

In 2006, the 5<sup>th</sup> Circuit reiterated in *Gulf Restoration Network v. United States Department of Transportation* that a cumulative impact analysis need not consider future actions that are too speculative. The court considered whether other port projects which had filed applications, but did not yet have draft environmental documents prepared, should have been included in the analysis. The court ruled that “Under the facts presented to us . . . we find that the Secretary did not abuse his discretion or act arbitrarily or capriciously in concluding that the three ports were not “reasonably foreseeable future actions,” or, as this court has put it, actions that “a person of ordinary prudence would take into account in reaching a decision”

In 1997, CEQ published *Considering Cumulative Effects Under the National Environmental Policy Act* with the caveat that the handbook was not to be considered formal guidance but rather the first in a succession of policy interpretations (CEQ, 1997). This document attempted to clarify cumulative analysis under NEPA by defining basic standards of cumulative effects analysis and establishing a stepped approach to evaluating cumulative effects. Then, in 2005, CEQ issued a memorandum clarifying what should be included in a cumulative evaluation and what should not (CEQ, 2005). The following guidance was given.

- Agencies should focus their analysis on what information is relevant to reasonably foreseeable significant adverse impacts, essential to a reasoned choice among alternatives, and can be obtained without exorbitant cost.
- Agencies need not analyze the effects of individual past actions unless such information is necessary to describe the cumulative effect of all past actions combined.
- Agencies should clearly distinguish the direct and indirect effects resulting from past actions from a cumulative effects analysis on past actions.

Although these guidance documents provide clarity and direction on adequate cumulative effects analysis, the lead agency still has the discretion to determine what actions to include and what level of detail is relevant to the analysis of the effects of a proposal for agency action and its reasonable alternatives.

So, what are agencies doing to further define how they address cumulative effects? The answer is very little. In general, agencies either agree with the CEQ’s stance on allowing for flexibility in developing the cumulative scope as it pertains to each project or continue to struggle with the most appropriate and reliable approach to cumulative analysis. Historically, Agency implementing procedures have all too often simply reiterated the level of detail given in the CEQ statutes, without providing additional guidance.

While the federal lead agency is the decision maker, CEQ has given the U.S. Environmental Protection Agency (EPA) the role of providing NEPA oversight and review of all Environmental Impacts Statements (EISs). So what is the EPA looking for? The EPA gives a rating to each draft EIS based on the “Environmental Impact of the Action” and the “Adequacy of the Draft EIS.” EPA published a guidance document in 1999 with the purpose of informing NEPA practitioners and reviewers of this approach and to advocate for “accurate, realistic, and consistent” review before submittal (EPA, 1999). EPA will typically not focus on analysis conclusions but rather on policy compliance and analysis approach. With regard to cumulative effects, EPA reviews whether a resource is particularly vulnerable to incremental effects, if historical resource impacts have been significant, if environmental documentation for other federal activities in the area identified cumulative effects of concern, and if the analysis has been clearly defined and conducted. Furthermore, EPA will look at the geographic and temporal boundaries set on the project to confirm that each is logical and sufficient to capture relevant cumulative effects.

## What's New?

In 2010, 540 EISs were filed with the EPA. Forty-three cases involving implementation of NEPA went to federal court, and of these, five (12 percent) were based on cumulative impacts (Swartz, 2010). The five 2010 cases and relevant cumulative effects analysis findings are summarized in Table 2.

TABLE 2  
2010 NEPA Cases Pertaining to Cumulative Effects Analysis

Federal Case	Finding
<i>Habitat Education Center v. U.S. Forest Service</i> , 609 F.3d 897 (7th Cir. 2010)	Reasonably foreseeable future projects that do not have enough information for a meaningful analysis do not need to be included in a cumulative analysis.
<i>League of Wilderness Defenders – Blue Mountains Biodiversity Project v. Allen</i> , 615 F.3d 1122 (9th Cir. 2010)	The cumulative effects analysis was found to be adequate even though detail was not provided on time, type, place, and scale for past actions because the agency used an “aggregate effects approach.” The analysis was consistent with CEQ guidelines.
<i>Te-Moak Tribe of Western Shoshone of Nevada v. U.S. Department of the Interior</i> , 608 F.3d 592 (9th Cir. 2010)	The cumulative effects analysis was found to be insufficient because it assumed all direct impacts would be avoided or mitigated and that all existing, proposed, and reasonably foreseeable future activities would avoid or mitigate all known and discovered resources. The analysis did not adequately justify its conclusions.
<i>Theodore Roosevelt Conservation Partnership v. Salazar</i> , 616 F.3d 497 (D.C. Cir. 2010)	A project need not be final to be “reasonably foreseeable.” Interestingly, the court concluded that projects in the EIS Notice of Intent phase were “too preliminary to meaningfully estimate their cumulative impacts.”
<i>Sierra Club North Star Chapter v. LaHood</i> , 693 F. Supp.2d 958 (D. Minn. 2010)	The agency set forth the geographic and temporal boundaries, summarized the existing condition of each potentially affected resource, summarized the impacts of the proposed project on each resource, identified other current and reasonably foreseeable future actions and their possible impacts on those resources, and discussed the potential for cumulative impacts on the resources and mitigation measures. The cumulative impact analysis was found to be adequate and met all the necessary steps of proper analysis.

Source: Swartz, 2010.

The fact remains that the “practical” definitions and guidance pertaining to cumulative effects analysis have and continue to evolve through CEQ guidance and case law. Courts typically do not rule against the conclusions of the analysis but rather whether procedural requirements were followed and adequate analysis was conducted with respect to CEQ regulations and guidance.

## Nine Principles for Cumulative Effects Analysis

We have developed nine principles that we believe are critical for producing a defensible cumulative effects analysis. Giving proper consideration to these principles early in your project will reduce vulnerability in the cumulative effects analysis.

### Principle #1. Start early and continue to assess the adequacy of the cumulative effects analysis.

The cumulative effects analysis should be started at the beginning of the EIS process, with the framework revisited for necessary revision on a frequent basis. This will enable changes to be made as additional information is gathered, avoiding costly delays and ensuring a comprehensive analysis.

### Principle #2. Cumulative effects only need to be considered for resources that are affected by the project action.

If the project action does not contribute to air quality emissions, a neighboring project’s contribution to greenhouse gas emissions does not need to be considered in a cumulative effects analysis. If your project does not generate new traffic, but road conditions and traffic flow in the area are at a failing level of service, your project has no cumulative impact. Early identification of the resources that are not affected by your project or that are cumulatively insignificant can help streamline the cumulative effects analysis process. Actions affecting other resources, or with cumulatively insignificant effects on the target resources, do not add to the value of the analysis (EPA, 1999).

### **Principle #3. Establish the temporal and geographic boundaries of the cumulative effects analysis early in the process.**

Cumulative impacts result when the effects of an action are added to or interact with other effects in a particular place and within a particular time. It is a combination of these effects and the resulting environmental degradation that should be the focus of the cumulative effects analysis (EPA, 1999). To this point, it is critical to define the temporal and geographic boundaries of the analysis early in the process. The timeframe not only extends to a reasonable point in the past but also a reasonable point in the future. The geographic boundary may be, and often is, different than the boundary used for the evaluation of direct and indirect effects of the project action. While an agency may consider the environmental effects of a project based on the project footprint or project area, the area of consideration for the cumulative effects analysis should be defined from a resource perspective. In addition, the area considered for the cumulative effects analysis may vary by resource category and should not be constrained by political boundaries. There is no prescription for the appropriate temporal and geographic boundaries. However, because they frame the cumulative effects analysis, they are a key focus of the EPA and the courts, should a legal challenge be brought.

### **Principle #4. Thresholds for significant cumulative effects may be different than thresholds for the project action.**

Cumulative significance thresholds may differ from those defined for the project action. A significant project impact may not lead to a significant cumulative effect and vice versa. For example, a project action may result in the loss of habitat. However when considered on a regional basis the loss may be inconsequential when compared to the total acreage of that habitat. Conversely, seemingly minor traffic impacts caused by a construction event could be cumulatively important if numerous construction activities occur simultaneously.

### **Principle #5. Define “speculative” in the context of your cumulative effects analysis.**

As discussed, EPA’s criterion for excluding future actions is whether they are “speculative” (EPA, 1999), but the courts have not defined the term. For each EIS, how the term speculative was defined for the purposes of that document should be included in the Administrative Record. As an example, the US Army uses the seven year funding plan, termed the Program Objective Memorandum (POM), when discussing the impact of future construction. If the project is not in the POM, it is speculative and not discussed.

### **Principle #6. Sources of actions that may contribute to cumulative effects need to be considered.**

There may be another agency, a municipality, or a private party with an activity not subject to environmental review. There may not even be a single agent, but rather an environmental trend that is attributable to many sources. An example is global climate change where the number of contributors is extensive and their specific identities unimportant for the evaluation of project contributions. Another example may be population growth, which may not be accounted for in regional development plans. Regional growth can have a wide range of cumulative effects and should be considered in project planning.

### **Principle #7. Clearly delineate the difference between project direct and indirect impacts and the impacts of other actions that contribute to cumulative effects.**

Realizing the level of impact, or lack thereof, resulting from the project action is relevant in determining the level of significance when adding the effects of cumulative activities. A significant project impact on a resource does not necessarily mean that the cumulative effect will also be significant. Likewise, a seemingly minor project impact may contribute to a significant cumulative effect.

### **Principle #8. Cumulative effects should be considered in the development of alternatives and mitigation.**

CEQ states that “if it is determined that significant cumulative effects would occur as a result of a proposed action, the project proponent should avoid, minimize, or mitigate adverse effects by modifying or adding alternatives” (CEQ,

1997). The guidance goes on to note that, although NEPA does not require all impacts to be fully mitigated, the proponent should also identify opportunities to mitigate impacts even when they are not necessarily significant. As a result, to efficiently and properly meet environmental documentation requirements, it is imperative to consider cumulative effects early in the process. Early identification may result in new alternatives, new alternative components (e.g., design options, siting, or timing), or mitigation that will reduce cumulative effects and potentially lower them or the effects of single actions to a level that is not significant. More than ever, agencies are open to coordinating mitigation efforts to optimize resource protection and recovery potential. Early consideration of cumulative effects may help identify opportunities for this type of cross-agency cooperation.

### **Principle #9. Obtain legal sufficiency review throughout the process.**

Given the rapidly developing case law and changing regulations, as appropriate, engage a legal sufficiency reviewer familiar with cumulative analyses throughout the process. This will help identify flaws that if not corrected could result in a success legal challenge. It is far better to address such issues as the EIS is prepared, than to learn of an omission in a court challenge.

## **Summary**

The 1997 CEQ handbook on the consideration of cumulative effects (CEQ, 1997) states 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.” The approach to clearly evaluating and presenting this collective impact analysis remains a conundrum among NEPA practitioners. After forty years of guidance and case law, practical direction pertaining to this part of the policy continues to develop.

There is no cookie-cutter approach to the perfect cumulative effects analysis. Likewise, there is no perfect format for presenting the information. The ultimate goal of environmental impact analysis is to provide the decision-maker with the necessary information to make an informed decision. Without looking at the full picture, which includes cumulative impacts, a fully informed decision cannot be made.

Courts do not typically rule against conclusions. They determine whether the process that lead to the conclusions was consistent with procedural requirements and the analysis was conducted was adequate supported. Adherence to the principals outlined in this paper will help ensure a productive and defensible cumulative effects analysis, thereby reducing the vulnerability of the project to challenge, and thereby saving time and cost.

## **References**

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