

Cumulative effects

Addressing future actions in cumulative effects assessment

J N Rumrill and L W Canter

Consideration of cumulative effects within the environmental impact assessment (EIA) process in the United States involves an analysis of the proposed action in view of past, present, and reasonably foreseeable future actions (RFFAs) in the related environs. In EIA practice in the US, over 40 court cases have involved cumulative effects, and many of them have hinged on RFFAs. This paper summarizes the lessons learned, including contradictions, and inconsistencies, from the relevant court cases. Such lessons can form the basis for systematic criteria to determine when any possible future action becomes a RFFA, thus necessitating its inclusion in cumulative effects considerations. An eight-step conservative determination method is proposed for delineating RFFAs for inclusion in studies which address cumulative effects. Although the method was based on principles and lessons derived from US court cases, it can be used internationally to help delineate RFFAs.

Keywords: cumulative effects assessment; reasonably foreseeable future action

J N Rumrill is a Graduate Student at the Environmental and Ground Water Institute, University of Oklahoma, 200 Felgar Street, Norman, Oklahoma, 73019-6152 USA. L W Canter holds the Sun Company Chair of Ground Water Hydrology, is a George L Cross Research Professor, and is Director of the Environmental and Ground Water Institute, University of Oklahoma, USA; Tel: +1 405 325 5202; Fax: +1 405 325 7596.

CUMULATIVE EFFECTS ANALYSIS is an important, yet often overlooked, aspect of the environmental impact assessment (EIA) process. In the United States, the National Environmental Policy Act (NEPA) requires, in spirit, that cumulative effects be addressed in stating a general policy that requires the protection, restoration, and maintenance of environmental quality for the use and enjoyment of present and future generations through the use of all practicable means that are consistent with other aspects of national policy (Kamaras, 1993).

The Council on Environmental Quality (CEQ) states that cumulative impacts (effects) result from

“the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (CEQ, 1996).

Adequate consideration of cumulative effects within the EIA process in the United States must, therefore, involve an analysis of the proposed action in view of past, present, and reasonably foreseeable future actions (RFFAs). One key difficulty in this analysis is the determination of what activities should be considered as RFFAs. For over two decades, the answer to the question, when does a contemplated action become ‘reasonably foreseeable?’, has been argued in the United States courts. In fact, over 40 court cases have involved cumulative effects, and many of them hinged on the determination of RFFAs.

One goal of the EIA process is to provide substantive and complete environmental information for decision-making. If the resultant environmental impact statement (EIS) or other environmental planning document (a preliminary study is called an 'environmental assessment') includes such significant information or analytic gaps as to provide project opponents with an opportunity to challenge the adequacy of the environmental study in a court of law, then possibly, the assessment process needs to be revised.

"In the last few years, the courts have been increasingly willing to scrutinize the analysis of the effects of the agency action, combined with other relevant actions, and reject NEPA documents because of inadequate cumulative impact analyses" (Herson and Bogdan, 1991).

The lack of clear, concise definitions and assessment procedures has resulted in decision-making that appears to conflict with the spirit and purpose of NEPA. Clear direction is needed as to what cumulative effects are, and when they must be addressed for the fundamental objectives of NEPA and other environmental planning and protection statutes to be achieved (Kamaras, 1993). A review of the court cases addressing the issue of RFFA determination provides insight into the nature of the problem and offers the opportunity to develop improved procedures to avoid future litigation.

This paper is presented in three main sections: an analysis of US court cases, a review of some existing methods for addressing RFFAs, and the presentation of a proposed method for determining RFFAs. The court case analysis addresses key issues such as: the controversy between formal and informal proposals; connection between actions; speculation; planning relationships; and adequacy determinations.

Overlaps can be found throughout the analysis between cases and issues. A single case will occasionally address multiple issues and, as finer points are revealed, the distinctions between the issues themselves become blurred. The methods review includes discussions on forecasting and an exclusion test developed within the court system. Finally, the proposed method incorporates the lessons learned in order to enhance environmental decision-making.

ANALYSIS OF COURT CASES

Formal vs informal proposals

A well known NEPA court case is *Kleppe v Sierra Club* (1976). In this case, the Supreme Court reviewed the US Department of Interior's past and contemplated actions with respect to coal development. The court found that, for activities to require a

"programmatic EIS," or one that encompasses the cumulative effects of several related past, present, and future proposed actions, it was necessary for those future actions to be formally proposed. In other words, if the future plans of the agency were not formalized into some type of program proposal, or regional development plan, they were not sufficiently foreseeable to trigger cumulative effects assessment (CEA) requirements (Herson and Bogdan, 1991).

This decision established a precedent that has been used to argue cases, successfully, for over two decades. For example, in *Hart & Miller Islands Area Environmental Group Inc v Corps of Engineers of United States Army* (1980), the court held that the Corps did not need to consider the cumulative effects of dredging an access channel and deepening a harbor related to the proposal for a diked spoil disposal facility in Chesapeake Bay because the actual dredging and deepening projects were not yet formal proposals.

The court cited *Kleppe v Sierra Club*, thus indicating that an agency could approve one project covered by an impact statement and reserve assessment of related projects until later when they were formally proposed (Mandelker, 1991). The court stated that actions that are merely contemplated did not have to be addressed (*Hart & Miller Islands*, 1980).

The contemplated action interpretation of reasonably foreseeable was used successfully again in 1990 and later in 1994. The 1990 case of *National Wildlife Federation v Federal Energy Regulatory Commission* (1990), involved a two-phase proposal to build a dam and increase the available water supply. The Federal Energy Regulatory Commission prepared an EIS to address Phase I of the project but did not include an assessment of the impacts from Phase II, even though it would significantly increase the water supply available from the reservoir.

The court found that, since the second phase had not yet been formally proposed, it would not inevitably follow from the first phase and therefore was only hypothetical and did not require analysis. Only the particular proposal at issue in the EIS and other pending or recently approved proposals needed to be addressed.

In 1994, the United States Air Force neglected to include the cumulative effects resulting from a related, formally proposed training range when developing the EIS for a proposed composite wing project at Mountain Home Air Force Base in Idaho. It was determined that, since the training range was connected to the composite wing project and EIS preparation began for the range as soon as the record of decision (ROD) for the composite wing was issued, the training range proposal was not speculative and its impacts should have been addressed in the original EIS (*Shoshone-Paiute Tribe v US*, 1994).

While these four cases, ranging from 1975 to 1994, support a narrow view of what is 'reasonably foreseeable,' other court actions, throughout the same time period, demonstrate the emergence of a broader

definition of a 'proposal.' For example, in *National Resources Defense Council v Callaway* (1975), the court made a direct ruling on the proper scope of cumulative effects analysis with respect to what projects or project proposals were reasonably foreseeable. The court determined that an agency was required to consider and include the cumulative impacts (effects) of the proposed project and any related projects that, although not approved yet, had reached a stage beyond speculation (Herson and Bogdan, 1991). Requiring the consideration of informal proposals contradicts the 'formal proposal only' decision in *Kleppe*.

Ten years later, in *Fritiofson v Alexander* (1985), the court relied on the CEQ definition of the term 'significantly' (40 CFR 1508.27), as related to NEPA, to direct a federal agency to conduct a cumulative effects assessment of a project which was not formally proposed (Herson and Bogdan, 1991). In this case, the Corps of Engineers had determined that it was not necessary to prepare an EIS for the approval of a permit authorizing a housing developer to construct a canal system for a housing project on a Galveston Bay island in Texas.

The court determined that the *Kleppe* ruling was not appropriate where an agency is "assessing the environmental significance of an action to determine whether an impact statement should be prepared" (Herson and Bogdan, 1991). The court determined that the CEQ regulations imply that the impact of other actions, in cases where those other actions are predicated on the original action, must be considered with the proposed action, even though they have not yet reached the proposal stage (Herson and Bogdan, 1991).

Conversely, the court determined in *Ringsred v City of Duluth* (1987) that CEA was not even required for environmental assessments (EAs) since it would place a burden on the agency's screening process equal to that required for an EIS (Kreske, 1996).

While *National Resources Defense Council v Callaway* set a precedent for inclusion of informal proposals as RFFAs, this case also addressed the consideration of non-Federal as well as Federal actions. An included subsequent informal, but reasonably foreseeable, proposal for housing construction was a private, not Federal, action. The US Court of Appeals for the Fifth Circuit found that CEQ regulations

"clearly mandate consideration of the impacts from actions that are not yet proposals and from actions — past, present, or future — that are not themselves subject to the requirements of NEPA" (CEQ, 1985).

The expanded RFFA view that included informal proposals did not, however, totally replace the *Kleppe*-based view. Courts still used *Kleppe* in the mid-1990s. The viewpoint requiring a formal proposition prior to consideration as reasonably foreseeable

Table 1. Summary of court cases related to formal v informal proposals

Outcomes	Case
Only formal proposals are required to be considered as RFFAs	<i>Kleppe v Sierra Club</i> (1976) <i>Hart & Miller Island Area Environmental Group, Inc v Corps of Engineers of United States Army</i> (1980) <i>National Wildlife Federation v Federal Energy Regulatory Commission</i> (1990) <i>Shoshone-Paiute Tribe v US</i> (1994) <i>Clairton Sportsmen's Club v Pennsylvania Turnpike Commission</i> (1995)
Informal proposals beyond the point of speculation are required to be considered as RFFAs	<i>National Resources Defense Council v Callaway</i> (1975) <i>Fritiofson v Alexander</i> (1985) <i>Thomas v Peterson</i> (1985)
Remote or speculative informal proposals are not required to be considered as RFFAs (see Note 1)	<i>Cheney v City of Mountainlake Terrace</i> (1976) <i>Lake County Energy Council v Lake County</i> (1977) <i>Headwaters Inc v Bureau of Land Management</i> (1990)

Note: See Table 2 for related outcomes

was presented, most adamantly, in *Clairton Sportsmen's Club v Pennsylvania Turnpike Commission* (1995) where the court stated that it

"clings firmly to the notion that a proposal requiring an EIS is a creature actually pending before a federal agency. Thus if a project is only 'contemplated' or 'less imminent,' it does not merit inclusion in an EIS."

Apparently, the courts had not yet resolved the contradictory opinions regarding the necessary degree of formality (as summarized in Table 1). Expansion to the view of reasonably foreseeable brings with it an additional, subjective, determination problem. That problem is associated with the degree to which an informally proposed, and possibly connected, action is probable.

Reasonably foreseeable or speculative

The courts have had opportunity to decide what constitutes an action that is a probable future event and one that is merely speculative (see Tables 1 and 2). This decision separates informal proposals into two categories, reasonably foreseeable and speculative, based on the probability of occurrence.

In *Cheney v City of Mountainlake Terrace* (1976), the court was asked to determine the requirement for CEA on the possibility of cumulative effects resulting from an arterial road construction project in the state of Washington. The court determined that the road was being built only to serve existing traffic needs in the area. It was not being constructed as part of an

Table 2. Summary of court cases related to reasonably foreseeable v speculative actions

Outcome	Case
Speculative effects are not required to be included after scoping process determines significant/speculative issues	Marin Municipal Water Dist v KG Land California Corp (1991)
Future actions that (1) are a direct consequence of the current action and (2) where consideration could alter the nature of the project or its effects are to be considered as RFFAs	Laurel Heights Imp Ass'n of San Francisco v Regents of University of California (1988); see Glad (1991)
Reasonable amount of forecasting of future activities is required	San Francisco Ecology Center v City and County of San Francisco (1975)
Future actions directly tied to an overall goal are to be considered as RFFAs	Blue Ocean Preservation Society v Watkins (1991)

Note: See also the last listed outcome in Table 1

effort to encourage further economic development in the area. Since there were no future development plans being contemplated by the agency which included the construction of the new road, the "future use of the private parcel is too remote and speculative to call for present evaluation of its future development." The court used the State Environmental Policy Act (SEPA) for Washington to support its decision, citing that SEPA does not require every remote and speculative consequence of an agency action to be addressed in an EIS.

In 1977, during *Lake County Energy Council v Lake County* (1977), the First District Court in California ruled,

"where future development is unspecified and uncertain, no purpose can be served by requiring environmental impact reports to engage in sheer speculation as to future environmental consequences."

The court determined that approval of exploratory drilling for the assessment of potential did not commit

The courts have had opportunity to decide what constitutes an action that is a probable future event and one that is merely speculative: this decision separates informal proposals into two categories, reasonably foreseeable and speculative

the council to approval of general commercial development of geothermal resources. The scope of the larger, commercial project was unknown until the smaller, exploratory project was completed, and the court felt it was impossible to address the cumulative effects of the second, larger project without clear a definition of its scope (*Lake County, 1977*).

In a case similar to *Cheney v City of Mountainlake Terrace*, the Ninth Circuit upheld a Bureau of Land Management (BLM) decision not to supplement an EIS. In the reference case, *Headwaters Inc v Bureau of Land Management* (1990), the court found that when the BLM decided to sell its Wilcox Peak area, it needed only to prepare an EIS relating to the construction of the access road needed to enter the area in order to present it for sale.

The court found no evidence that any further activities, such as logging, were contemplated by the BLM for the Wilcox Peak area. Although the court agreed that it was possible for the road to be used for future logging activities, it was also possible that the road would never be used for any development activities. The future use of the road was considered to be speculation, and, therefore, did not require evaluation of hypothetical cumulative effects (Herson and Bogdan, 1991). The difficulty, then, is to determine the difference between when a future activity is to be considered as a reasonably foreseeable, albeit informal, proposal and when it is sheer speculation.

The court in *Marin Municipal Water Dist v KG Land California Corp* (1991) reached the conclusion that the future possibilities in question were not more definitive than sheer speculation and, therefore, CEA of the possible future effects was not required. In this case, a draft EIR (environmental impact report — the term used for an EIS under California state law) was prepared on a moratorium to restrict new water allocations until a new water resources management plan could be completed. At this point, of the 35,000 acre-feet annual supply, only 18 acre-feet was unallocated.

The draft EIR addressed issues such as the possible impact on housing stock, housing affordability, employment and public finances. The opponents of the moratorium argued that the draft EIR was insufficient because it failed to address: the ability of cities to meet their regional fair share of housing; regional job and housing imbalances; regional growth and development issues; and the generation of fees for public services.

The court held that analyzing "whether a project may have a significant environmental effect necessarily involves some degree of forecasting" but also the EIR should not engage in sheer speculation of future effects (*Marin Municipal, 1991*). Not only are speculative actions not required to be addressed in a CEA, but speculative significance determinations, relative to scoping of the issues addressed, are also not required.

The court, in *Laurel Heights Imp Ass'n of San Francisco v Regents of University of California*

The test applied by the court in the Laurel Heights case seems to indicate that, for an action to be required to be included in a CEA, it must, at a minimum, be a connected informal action of some environmental significance

(1988) (Glad, 1991), took on the challenge of the delineation between speculation and RFFAs. The court found that the EIR prepared for moving a university biomedical science unit into a portion of a new building was inadequate, in that it did not discuss the future use of the entire new facility. To make this determination, the court established a test to decide when future actions related to a proposed project should be analyzed in conjunction with the original proposal.

The state supreme court stated that the decision of future action inclusion in the analysis involved a balancing of whether the future actions were too speculative versus the possibility of ignoring some important environmental issue in decision-making if the environmental analysis of the future proposal is conducted too late. The court test required the inclusion of the future proposals in the environmental analysis if the future activity (a) was a reasonably foreseeable consequence of the original, or initial, project; and (b) it will be significant in that it is likely to alter the nature or scope of the original project or its environmental effects (Glad, 1991).

The court applied this test to the Laurel Heights case and concluded that, even though there were no formally approved plans as to the future use of the remainder of the facility, since public and private disclosures were made by university officials as to the general types of future activities that were likely to occur, those possible activities were beyond the point of mere speculation and could be considered as RFFAs. The court also noted that the EIA process always involves some degree of forecasting and it is the responsibility of the public agency to disclose all pertinent information (Glad, 1991). Thus the test applied by the court seems to indicate that, for an action to be required to be included in a CEA, it must, at a minimum, be a connected informal action of some environmental significance.

Connected actions

The courts have also explored other mechanisms to clarify the requirement to 'forecast' future activities (see Table 3). In *San Francisco Ecology Center v City and County of San Francisco* (1975), the court stated that agencies are encouraged to make reasonable

Table 3. Summary of court cases related to connectedness of actions

Outcome	Case
Lack of independent utility or demonstration as a logical part in a chain requires subsequent related actions to be evaluated together	Thomas v Peterson (1985) Scientists Inst for Public Information v Atomic Energy Commission (1973) Save the Yaak Committee v Block (1988) Town of Huntington v Marsh (1988)
Actions having independent utility are not required to be evaluated together	Lange v Brinegar (1980) SEAPC v Cammack II Orchards (1987) Hudson River Sloop Clearwater Inc v Navy Department (1988)
Geographic connections require actions to be evaluated together	Scientists Inst for Public Information v Atomic Energy Commission (1973) Onondaga Landfill Systems Inc v Flacke (1981); see Kamaras (1993) Northwest Indian Cemetery Protective Ass'n v Peterson (1985)
Geographic connections are not sufficient to require actions to be evaluated together	Allison v Department of Transportation (1990)
Other future actions within an agency undergoing the same level of review must be evaluated with the proposal	San Franciscans for Reasonable Growth v City of San Francisco (1984); see Kamaras (1993)
Common natural resource threat or commitment connections or environmental effect connections require actions to be evaluated together	Northwest Indian Cemetery Protective Ass'n v Peterson (1985) Citizens to Preserve the Ojai v County of Ventura (1985) Connor v Burford (1988) Kings County Farm Bureau v City of Hanford (1990)

forecasts in the preparation of environmental impact analysis documents and if, later, information becomes available that invalidates or alters those projections, that information should be brought to the attention of the decision-makers.

In *Thomas v Peterson* (1985), the court related the idea of a reasonably foreseeable informal proposal to "connected actions." The court held that the EIS prepared by the US Forest Service was insufficient, because CEQ regulations required cumulative impact (effects) analysis of "connected actions." It was determined that an impact statement was required for both a proposed road through a forested area and the future logging activities conducted using that road as an access route. Since the cutting and selling of timber could not occur without the road, and since the road would not be constructed if it were not for the contemplation of timber sales, the two projects were connected within the regulatory definition of connectedness (*Thomas v Peterson*, 1985).

The relationship of connected actions was used again in *Save the Yaak Committee v Block* (1988). Relying heavily on the decisions made in *Thomas v Peterson*, the Ninth Circuit Court

“found the EA inadequate, because it failed to consider timber harvest and secondary roadway construction enabled by the road as ‘connected actions’ that would cause cumulative effects” (Herson and Bogdan, 1991).

Specific ‘connections’ include: proposal intent, geographic connections, resource connections, and planning relationships.

Proposal intent and geographic connections

Where a reasonably foreseeable action is one that does not have to be formally proposed, yet is more concrete in its probability than to be considered speculative, then, according to the court in *Blue Ocean Preservation Society v Watkins* (1991), the proper delineation of reasonably foreseeable lies within the context of how the term ‘proposal’ is defined. The court addressed the issue of whether or not the fourth phase of a geothermal project in Hawaii was reasonably foreseeable. The court determined that the agency had a clear goal of implementing the third phase and an ultimate goal of implementing Phase IV. The court cited the following in support of its determination that since the agency had a defined goal, the fourth phase of the project was reasonably foreseeable:

“‘Proposal’ exists at that stage in development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated...A proposal may exist in fact as well as by agency declaration that one exists” (CEQ, 1996).

While it is not difficult to see relationships between multiple projects or proposals of one agency in relation to one objective or goal, some court cases revealed other linkages or lack thereof between projects that influenced decisions on CEA requirements. As early as 1973, the courts recognized that geographic relationships could link reasonably foreseeable events in ways that required those events to be evaluated together. For example, in *Scientists Inst for Public Information v Atomic Energy Commission* (1973), the court recognized that reasonable forecasting was implicit in the NEPA process and agencies must not be permitted to dismiss the discussion of future effects as speculation. The court also stated:

“Individual actions that are related either geographically or as logical parts in a chain of contemplated actions may be more

appropriately evaluated in a single program statement...[The program statement] ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis.”

Since the statement says “either” geographically or as logical parts in a chain, it implies that geographically connected proposals that are in no other way related should be considered in a single environmental analysis.

In contrast to the *Scientists Inst* case, in *Lange v Brinegar* (1980), the court held that a highway expansion project could be separated from other actions. The highway section was considered to be of substantial length between logical termini so as to have independent utility. The court determined that, since it had independent utility, and the section fulfilled state and local needs, it was properly segmented from other highway expansion projects. Since no evidence was presented of any synergistic or cumulative effects that would result from the completion of this and any other highway segments along this particular interstate highway, other than an increase in traffic. CEA of this segment construction combined with other segment proposals was unnecessary.

SEAPC v Cammack II Orchards (1987) produced a similar conclusion about the reasonableness of separating actions. In this case, a developer applied for a rezoning permit for a 234-house subdivision. An EIS was prepared which reviewed only the impacts of the subdivision establishment (for instance, site grading, street paving, and water, sewer, gas, and electric utility placement) not the impacts of the individual housing units. The court held that the housing units were a subsequent phase of the project. Since the initial phase, the subdivision development, would be constructed regardless of whether or not the housing units were built, it was sufficiently independent of the housing construction to be considered unconnected for purposes of environmental analysis (Kamaras, 1993).

Again in 1988, the court found in *Hudson River Sloop Clearwater, Inc v Navy Department* that the construction of a new homeport for the USS Iowa was independent of new housing facility construction for the homeport employees. The court held that the two projects were not connected and were not required to be evaluated in a single EIS because the homeport was needed and had independent utility regardless of the housing construction.

In other cases, the courts have taken the viewpoint as in *Scientists Inst* For example, in *Town of Huntington v Marsh* (1988), when the US Army Corps of Engineers proposed to issue dumping permits for dredged material disposal at a new ocean dumping site off Long Island Sound, the court determined that the EIS was inadequate because it concluded that the type, quantity, and cumulative effects of the dumped material would be evaluated on a case-by-case basis during permit application review. The court held that the project was improperly segmented because the

In some cases, the courts have expanded on what they consider to be connected: the lessee of a gravel mine was required to assess the future impacts of site reclamation by the property owner who intended to develop the area for housing

designation of the dump site had no independent utility apart from its planned usage of receiving waste (Herson and Bogdan, 1991).

In some cases, the courts have expanded on what can be considered to be connected. In *Onondaga Landfill Systems, Inc v Flacke* (1981) in New York, it was decided, because the term 'action' was defined to include future phases, that future aspects of the original action must be addressed as early as possible (Kamaras, 1993). The lessee-operator of a gravel mine was required to assess the future impacts of site reclamation by the property owner who had intentions of developing the area into a residential subdivision (Kamaras, 1993). These actions were required to be combined for environmental analysis due to their geographic link, however, it is important to note that they were not actions proposed by the same individual. Thus the concept of connected actions was expanded beyond those proposed by a single agency.

Finally, in *San Franciscans for Reasonable Growth v City of San Francisco* (1984), the court held that a relationship, or connection, exists between projects such that, when project proposals within an agency are undergoing the same level of review as the subject project, the other proposals are to be considered as reasonably foreseeable (Kamaras, 1993) and connected. The court determined that the other project proposals under review were reasonably foreseeable, because a significant investment of time, money, and technical planning occurs before the projects are submitted for environmental review (Kamaras, 1993).

Resource connections

The court in *Northwest Indian Cemetery Protective Ass'n v Peterson* (1985) determined that projects were linked, not only by geographic area, but also by threat to common natural resources. In this case, the US Forest Service was required to analyze the cumulative effects of a proposed road construction project along with a forest management plan including timber projects, because they were planned for the same geographic area and represented similar threats to local aquatic resources. The Forest Service was specifically required to address cumulative sedimentation effects on water quality.

Another example of linkage through an environmental resource is demonstrated in *Citizens to*

Preserve the Ojai v County of Ventura (1985). This court vacated a lower court's approval of an oil refinery expansion and modification because the EIR did not include a CEA of air emissions from outer continental shelf oil facilities (OCSOF). The EIR, instead, relied on predictions made in the county air-quality management plan, which also excluded the outer continental shelf activity emission data. The management plan did say that the additional OCSOF emissions data would have a substantial impact (Kamaras, 1993). The linkage here, air quality, required the project proponent to address external impacts to the regionally defined resource.

In *Connor v Burford* (1988), the court ruled that an EIS was required when the US Forest Service decided to sell oil and gas exploration leases that included assessment of the development and production activities undertaken by the corporations who would purchase the leases. This decision supports the idea of connection extending to other agency actions, but was primarily made on the basis that the EIA process should be conducted prior to an irretrievable commitment of resources (Herson and Bogdan, 1991). This introduces an additional consideration of timing when considering the environmental impacts of future activities.

Planning relationships

In some cases, RFFAs have been determined and connected to proposals undergoing NEPA analysis through the association of a planning document (see Table 4). For example, California Public Resources Code Section 21100(e) (1996) states: "Previously approved land use documents, including, but not limited to, general plans, specific plans, and local coastal plans, may be used in cumulative impact analysis."

In *Save the Pine Bush v City of Albany* (1987), the city separately reviewed impacts likely to result from ten pending project proposals presented by various developers for a unique ecologically sensitive area for which it had created a special zoning district (Kamaras, 1993). The court determined that the projects were related because they were part of a plan

Table 4. Summary of court cases related to planning relationships

Outcome	Case
Projects related through planning documents with defined goals are connected and are to be considered as RFFAs	<i>Save the Pine Bush v City of Albany</i> (1987) <i>City of Tenakee Springs v Clough</i> (1990)
Plans that manage actions but do not promote or stimulate the occurrence through the association of achievement of a goal are not required to be considered as connected or RFFAs	<i>Rio Vista Farm Bureau Center v County of Solano</i> (1992)

It appears that, to use a planning document as a mechanism to connect actions and qualify them as reasonably foreseeable, it must include a stated goal: to attain that goal, the plan must promote the occurrence of the future activities it is designed to manage

designed to add to the city's housing stock while preserving the unique character and scale of the Chinatown community. The creation of a special zoning district qualified as a long-range plan which, in turn, created a relationship between the projects (Kamaras, 1993). That relationship was the connectivity used to require a CEA.

The existence of a plan was also the mechanism used to define what was reasonably foreseeable in *City of Tenakee Springs v Clough* (1990). The US Forest Service had previously negotiated a 50-year timber sales contract with a paper products company. Five-year operating plans were developed by the Forest Service, each supported by an EIS. A supplemental EIS was prepared to address impacts resulting from the 1986-90 operating plan as well as deficiencies in the 1981-86 operating plan EIS.

The supplemental EIS was challenged because it did not include a comprehensive cumulative analysis of the impacts likely to result from the execution of the entire 50-year plan. The court held that, where several foreseeable similar projects in a geographic region have a cumulative impact, they should be evaluated in a single EIS prior to the time when the actions take place (Herson and Bogdan, 1991). In this case, not only did the existence of a plan connect individual actions, it acted as a mechanism to make future actions reasonably foreseeable.

It is not, however, sufficient to consider actions or proposals related solely based on the existence of a planning document. As shown in *Rio Vista Farm Bureau Center v County of Solano* (1992), without some causal link between the plan and the project proposals, there is no inference of connectivity or future probability. In this case the court would not allow a county hazardous-waste management plan to be used as inference of a requirement to assess specifics of potential future treatment, storage, and disposal facilities. The court held that the plan was not a project development proposal but merely a management assessment and overview.

A plan itself does not necessarily generate the requirement for a CEA of the activities it is intended to manage. It can, however, provide the necessary linkage between projects to require CEA. So, without a plan to provide this link, even projects in close geographic proximity can fail to qualify as connected.

In *Allison v Department of Transportation* (1990), the EIS for the new Denver airport was challenged because it did not address the cumulative effects of other projects planned for the area. The court determined that CEQ regulations did not require the inclusion of projects that were neither related to the airport nor dependent on it. Those unrelated actions were considered by the court to be unconnected (Herson and Bogdan, 1991).

In summary, it appears that, to use a planning document as a mechanism to connect actions and qualify them as reasonably foreseeable, the document must include a stated goal. For attainment of that goal, the plan must promote the occurrence of the future activities it is designed to manage.

Elements of adequate CEA discussion

An EIR for a large, coal-fueled co-generation facility came under legal scrutiny in *Kings County Farm Bureau v City of Hanford* (1990). This case required that the CEA address activities both on and off the proposed site, regardless of what agencies were proponents of those additional actions. The court held that the project proponent was required to address on-site and off-site, or secondary, emissions concurrently in a single, cumulative analysis and that, contrary to the separation of emissions allowed under the air-emission permit-application process, in the EIA process, emissions from truck and train activities had to be combined with stack emissions when evaluating impact significance.

The court also provided its interpretation and review of California EIA guidelines as applicable to CEA. The elements determined necessary for an adequate discussion of cumulative impacts include:

- either a list of past, present, and RFFAs producing related or cumulative effects, regardless of agency control; or, a summary of projections contained in an official planning document which evaluates conditions over a region or area;
- a summary of the expected environmental effects produced by those projects; and
- a reasonable analysis of the cumulative effects of the relevant projects.

California is one of the few states in the US that has developed a specific definition of cumulative impacts and guidance on requirements for what actions to include in a CEA (Kamaras, 1993). For example, in *Akers v Resor* (1978), the court ruled that information, similar to that in the subsequent Kings County case, required to account for cumulative impacts included: a list of projects producing related or cumulative impacts; and a reasonable analysis of the combined or cumulative effects. The court went on to add that this analysis should include the projects of other agencies.

RFFA DETERMINATION METHODS

Existing methods

It should be apparent that much effort has been expended on legal determinations of RFFAs. However, the environmental planner is faced with contradictory signals from the court system as to what should be included within a CEA incorporating a RFFA. It is uncertain whether or not the future activity must be formally proposed, whether the actions of other agencies should be included and, if connected actions are required to be addressed, what is necessary to define that connection.

Rather than court case-related research on CEA, most research efforts have focused on predicting the additive or synergistic impacts for specific ecosystems (Dixon and Montz, 1995). However, some methods for the determination of RFFAs have been developed by agencies, or by the courts themselves, as a result of the court experiences that have addressed the issue.

In *Considering Cumulative Effects under the National Environmental Policy Act*, the CEQ presents a discussion on some of the issues to consider when identifying future actions. The recommendations made include a review of pertinent planning documents and "reasonable forecasting." Additionally guidance is provided to allow for exclusion of proposals that: are outside the temporal and spatial boundaries; will not affect the resources that are the subject of the analysis; or, could be considered arbitrary (CEQ, 1997).

This document does not, however, provide a pragmatic framework, or procedure, for the identification of RFFAs. Rather, it states that analysts should develop their own guidelines and that the assumptions, or basis, used to forecast future activities should be discussed in the assessment (CEQ, 1997).

The court in *No Oil, Inc v City of Los Angeles* (1987) approached this problem by deciding when a proposal should be excluded rather than when it should be included. The court determined that two factors should be considered when deciding whether or not to defer assessment of a future project stage until a time after the first-stage assessment was complete. They are:

- whether obtaining more detailed, and useful, information about the future stage is "meaningfully possible";
- and
- how important would the additional information be in determining whether or not to proceed with the project.

By this logic, if the future proposal is either too abstract to predict reasonably accurate environmental effects, or so insignificant as to have no real impact on the decision to proceed with the current stage, then

it is not necessary to include it in the current impact study.

To avoid potential misuse, it is important to note this test within the context of the case where it was presented. The case referred to deferral of consideration of the environmental effects of a pipeline until oil was discovered and a specific pipeline route was chosen (No Oil, 1987). In this case, no adverse effects were likely due to the deferral. As always, professional judgment on the part of the environmental planner and project decision-makers is needed to ensure that any test is applied in the proper context.

The US Forest Service has developed an approach to CEA, known as "area analysis," that addresses the problem of RFFAs. This approach involves a two-level decision process including, first, a programmatic impact analysis at the forest-plan level, and second, a site-specific impact analysis at the project level (Sample, 1991). The Forest Service addresses the boundary issues of space and time in its approach.

With regard to spatial analysis, they first addressed impacts within the administrative boundaries of the Forest Service. This proved to be too limiting because it did not account for impact contributions from other agency or private individual activities. While the information from these external activities may be less accurate, or less detailed, the Forest Service approach permits its inclusion into a programmatic assessment over the geographic boundaries applicable to the impacts being addressed, such as watersheds. With respect to temporal bounds, the agency addresses planned activities as well as future observance of effects due to present activities. The two-level analysis method allows for updates to be incorporated as new information becomes available.

One of the most elusive aspects of the incorporation of RFFAs in CEA is the forecasting requirement addressed in *San Francisco Ecology Center v City and County of San Francisco*. While this may appear to be an exercise in random speculation, considerable research has been conducted in the development of forecasting methods. One method, "alternative futures," includes techniques to develop possible, plausible, conceivable, and probable future activities. It emphasizes societal features that could reasonably coexist (Mitchell *et al*, 1975).

While this and other forecasting techniques were not specifically developed for the determination of RFFAs for CEA, the basic concepts and procedures of the methods can be adapted for that use. Reasonable effort expended on the development of possible future actions and evaluation of the relationship between these future activities and the original proposal in context with the surrounding environment, should facilitate the development of a reasonable list of possible future activities. That list of activities can then be evaluated to determine if they can be called RFFAs.

Table 5. Legal issue linkages to eight-step method

Issue addressed	Table	Step affected	Comments
Only formal proposals are required to be considered as RFFAs	1	2	
Informal proposals beyond speculation are to be considered as RFFAs	1	3	
Remote or speculative informal proposals are not required to be considered as RFFAs	1	3,7	
Speculative effects are not required to be included after scoping process determines significant/speculative issues	2	7	
Future actions that (1) are a direct consequence of the current action and (2) where consideration could alter the nature of the project or its effects are to be considered as RFFAs	2	3,4,7	
Reasonable amount of forecasting is required	2	3	
Future actions directly tied to an overall goal are RFFAs	2	6	
Lack of independent utility or demonstration as a logical part in a chain requires related actions to be evaluated together	3	4	
Actions having independent utility are not required to be evaluated together	3	N/A	Does not support conservative approach
Geographic connections require actions to be evaluated together	3	1,3	
Geographic connections do not to require actions to be evaluated together	3	N/A	Does not support conservative approach
Other future actions within an agency undergoing the same level of review must be evaluated with the proposal	3	5	
Common natural resource threat or commitment or environmental effect connections require actions to be evaluated together	3	4	
Planning document related actions supporting defined goals are connected and are to be considered as RFFAs	4	6	
Plans that manage actions but do not promote their occurrence through the association of a goal are not required to be considered as connected or RFFAs	4	6	

Notes: Step 7 is also influenced by discussions on adequate CEA (*Kings County Farm Bureau v City of Hanford*, 1990; *Akers v Resor*, 1978) and exclusion testing (*No Oil, Inc v City of Los Angeles*, 1987)
 Step 8 was not developed from court case review, however, proper documentation is central to the EIA and CEA processes

Proposed conservative determination

Based on the issues addressed in the reviewed cases, and with the precondition that when the courts contradict, a conservative approach dictates that an action should be included, evaluation of future activities with respect to the following eight steps should minimize court challenges on the basis of failure to include future actions in a CEA:

- 1) Determine reasonable temporal and spatial boundaries with respect to the availability of information, the realm of influence or control exerted by the subject agency, and the nature of the environmental impacts of the original project.
- 2) Within those boundaries, if the agency has additional formal proposals, approved or pending approval, relating to the accomplishment of any agency goal or objective, include them as RFFAs.
- 3) Conduct forecasting to determine possible, plausible, conceivable, and probable future activities, both internal and external to the subject agency, that fall within the temporal and spatial boundaries established in step 1. This is not intended to encompass every speculative

possibility. Evidence to support the likelihood of each forecasted activity should be included in the analysis. For example, a forecasted housing-development informal proposal could be supported by population-growth projections and existing dwelling-unit occupancy statistics that demonstrate the need for the development. Other supporting evidence could be provided through a discussion of any linkages to formal proposals identified in step 2.

- 4) Evaluate the list from step 3 to determine possible connectedness to the original proposal. Consider: (a) geographic relationships; (b) common resources or environmental media impacted; and (c) causal links or catalytic effects between the original and forecasted activities. If connections can be determined, consider those activities as RFFAs.
- 5) Again evaluating the list of proposals from step 3, determine if 'significant amounts' of effort, resources, time, and/or money have been invested into the future activities. If so, consider the activities as RFFAs.
- 6) Within the area of concern, determine the existence of any planning documents, such as city or regional development plans, historic preservation plans, district plans, or environmental-use

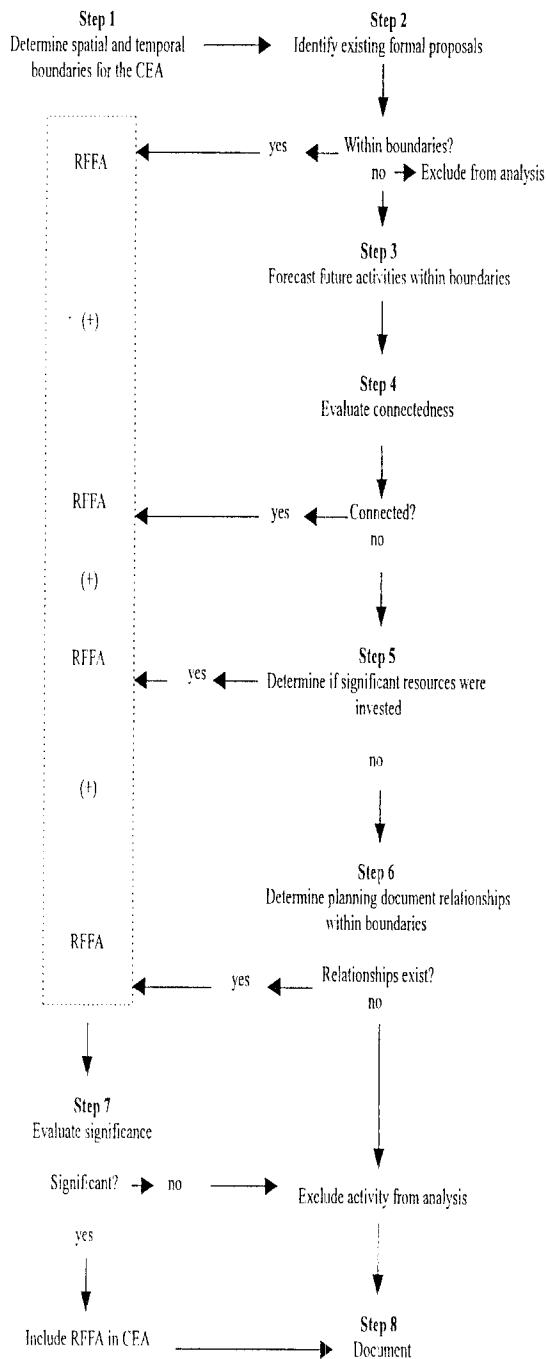


Figure 1. Eight-step method decision flowchart

plans, that relate future activities and the original proposal through a common goal or objective. If such relationships can be determined, consider the related future activities as RFFAs.

- 7) Evaluate the significance of each activity thus far categorized as reasonably foreseeable. Include consideration of: (a) whether or not obtaining useful information, or relevant prediction models, related to the environmental impacts of the activity is possible at this point in time; and (b) whether or not the information obtained will have any impact on the original

project alternative evaluation and selection. This determination is not intended to evaluate the significance of the project effects on the environment. It is a scoping exercise to ensure that the RFFA list is limited to only those activities with measurable effects on the resource or media of concern relevant to the scale of the analysis. If RFFAs are determined to be 'insignificant' or impossible to evaluate at this time, exclude them from the list. The remaining RFFAs should be included in the CEA for the original project.

- 8) Document the evaluation of RFFAs and include that documentation in the final impact-study report.

The order of the steps is intended to demonstrate a logical flow for the decision-making process. This does not mean, for example, that step 1 must be completed prior to exerting effort toward step 2. Nor is it intended to imply that, once completed, the results of a step cannot be revised. The importance resides in the inclusion of each issue for RFFA determination regardless of the order of step completion or number of iterations.

Table 5 summarizes how the issues addressed in the court cases relate to and support each of the eight steps. Following these eight steps through the decision process illustrated in Figure 1 will ensure that most, if not all, relevant projects are included. It will demonstrate to the decision-makers, regulators, and, if necessary, the courts, that a concerted effort was made to comply with the spirit of the legislation and provide the pertinent information needed to make responsible decisions with respect to the protection of the environment.

Conclusions

As stated by the court in *Coalition for Canyon Preservation v Bowers* (1980), "subjective good faith is not the test for determining adequacy of an environmental impact statement; [the] test is an objective one." The proposed eight-step conservative determination method described, while not entirely devoid of the subjective, attempts to organize the RFFA determination process into a methodical, defensible procedure. Using this method, agencies can show why an action is, or is not, included in a CEA.

"Agencies will be more likely to withstand cumulative impact challenges if alleged connected actions are not related closely, if the projects are not segmented, and if there is evidence specifically rejecting connected actions and evidence of good faith attempts to comply with NEPA" (Herson and Bogdan, 1991).

Since there are no penalty provisions associated with NEPA, if an agency does not voluntarily make the

good faith attempt, the only recourse left to concerned groups and individuals is to convince the court that the analysis is inadequate, therefore delaying, or possibly canceling, proposal implementation. This approach to enforcement highlights the importance of court decisions.

While the basis for the recommended eight-step conservative determination method is a review of relevant issues from US court cases, it is not intended that its application be restricted to the United States. The spirit and intent of NEPA is similar to that of environmental provisions of other nations in that all intend to provide decision-makers with more complete and relevant information as to the environmental impacts of their actions.

Several nations have recognized the importance of the assessment of cumulative effects. The decisions relative to US court cases as to inclusion or exclusion of a proposal may not be applicable outside the US, however, the issues themselves have broader applicability. Careful consideration of the issues presented in this analysis will further refine the scoping process in CEA regardless of the regulatory framework in which the assessor operates.

References

- Akers v Resor (1978), *Federal Supplement*, vol 443 (West Publishing Co, St Paul, MN) page 1355.
- Allison v Department of Transportation (1990), *Federal Reporter*, Second Series, vol 908 (West Publishing Co, St Paul, MN) page 1024.
- Blue Ocean Preservation Society v Watkins (1991), *Federal Supplement*, vol 767 (West Publishing Co, St Paul, MN) page 1518.
- California Public Resources Code (1996), Section 21100, West's Annotated California Codes (West Publishing Co, St. Paul, MN).
- Cheney v City of Mountainlake Terrace (1976), *Pacific Reporter*, Second Series, vol 552 (West Publishing Co, St. Paul, MN) page 184.
- Citizens to Preserve the Ojai v County of Ventura (1985), *California Reporter*, vol 222 (West Publishing Co, St. Paul, MN) page 247.
- City of Tenakee Springs v Clough (1990), *Federal Reporter*, Second Series, vol 915 (West Publishing Co, St. Paul, MN, 1991) page 1308.
- Clairton Sportsmen's Club v Pennsylvania Turnpike Commission (1995), *Federal Supplement*, vol 882 (West Publishing Co, St Paul, MN) page 455.
- Coalition for Canyon Preservation v Bowers (1980), *Federal Reporter*, Second Series, vol 632 (West Publishing Co, St. Paul, MN, 1981) page 774.
- Connor v Burford (1988), *Federal Reporter*, Second Series, vol 848 (West Publishing Co, St. Paul, MN) page 1441.
- CEQ, Council on Environmental Quality (1985), *Environmental Quality*, 16th Annual Report (Washington, DC).
- CEQ, Council on Environmental Quality (1996), "Regulations for Implementing the procedural provisions of the National Environmental Policy Act", 40 CFR 1508, 1 July.
- CEQ, Council on Environmental Quality (1997), *Considering Cumulative Effects Under the National Environmental Policy Act* (Washington, DC).
- J Dixon and B E Montz (1995), "From concept to practice: implementing cumulative impact assessment in New Zealand", *Environmental Management*, 19(3), pages 445-456.
- Fritiofson v Alexander (1985), *Federal Reporter*, Second Series, vol 772 (West Publishing Co, St Paul, MN, 1986) page 1225.
- A L Glad (1991), "Laurel Heights Improvement Association of San Francisco, Inc v Regents of the University of California [764 P.2d 278 (Cal.)]: The Lucas Court's First Look at CEQA", *Pacific Law Journal*, 22, pages 289-321.
- Hart & Miller Islands Area Environmental Group, Inc v Corps of Engineers of United States Army (1980), *Federal Supplement*, vol 505 (West Publishing Co, St Paul, MN, 1981) page 732.
- Headwaters, Inc v Bureau of Land Management (1990), *Federal Reporter*, Second Series, vol 914 (West Publishing Co, St Paul, MN, 1991) page 1174.
- A I Herson and K M Bogdan (1991), "Cumulative impact analysis under NEPA: recent legal developments", *The Environmental Professional*, 13, pages 100-106.
- Hudson River Sloop Clearwater, Inc v Navy Department (1988), *Federal Reporter*, Second Series, vol 836 (West Publishing Co, St Paul, MN) page 760.
- G Kamaras (1993), "Cumulative impact assessment: a comparison of federal and state environmental review provisions", *Albany Law Review*, 57(1), pages 113-143.
- Kings County Farm Bureau v City of Hanford (1990), 222 Cal App 3d 516A, *California Reporter*, vol 270 (West Publishing Co, St Paul, MN, 1991) page 650.
- Kleppe v Sierra Club (1976), *United States Reports*, vol 427 (US Government Printing Office, 1978) page 390.
- D L Kreske (1996), *Environmental Impact Statements: A Practical Guide for Agencies, Citizens, and Consultants* (John Wiley and Sons, Inc, New York).
- Lake County Energy Council v Lake County (1977), 70 Cal. App. 3d 851, *California Reporter*, vol 139 (West Publishing Co, St Paul, MN) page 176.
- Lange v Brinegar (1980), *Federal Reporter*, Second Series, vol 625 (West Publishing Co, St Paul, MN) page 812.
- DR Mandelker (1991), *NEPA Law and Litigation: 1991 Cumulative Supplement* (Clark, Boardman, Callihan, Deerfield, IL).
- Marin Municipal Water Dist v KG Land California Corp (1991) 235 Cal. App. 3d 1652, *California Reporter*, Second Series, vol 1 (West Publishing Co, St Paul, MN, 1993) page 767.
- A Mitchell et al (1975), "Handbook for forecasting techniques", IWR Contract Report 75-7, US Army Engineer Institute for Water Resources, Fort Belvoir, Virginia, December.
- National Resources Defense Council v Callaway (1975), *Federal Reporter*, Second Series, vol 524 (West Publishing Co, St Paul, MN, 1976) page 79.
- National Wildlife Federation v Federal Energy Regulatory Commission (1990), *Federal Reporter*, Second Series, vol 912 (West Publishing Co, St Paul, MN) page 1471.
- No Oil, Inc v City of Los Angeles (1987), *California Reporter*, vol 242, West Publishing Co, St Paul, MN, 1988) page 37.
- Northwest Indian Cemetery Protective Ass'n v Peterson (1985), *Federal Reporter*, Second Series, vol 753 (West Publishing Co, St Paul, MN) page 754.
- Rio Vista Farm Bureau Center v County of Solano (1992), 5 Cal App 4th 351, modified, *California Reporter*, Second Series, vol 5 (West Publishing Co, St Paul, MN, 1993) page 351.
- A V Sample (1991), "Assessing cumulative environmental impacts: the case of national forest planning", *Environmental Law*, 21, pages 839-862.
- San Francisco Ecology Center v City and County of San Francisco (1975), 40 Cal App 3d 584, *California Reporter*, vol 122 (West Publishing Co, St Paul, MN) page 100.
- Save the Pine Bush v City of Albany (1987), *North Eastern Reporter*, Second Series, vol 512 (West Publishing Co, St Paul MN, 1988) page 526.
- Save the Yaak Committee v Block (1988), *Federal Reporter*, Second Series, vol 840 (West Publishing Co, St Paul, MN) page 1308.
- Scientists Inst for Public Information v Atomic Energy Commission (1973), *Federal Reporter*, Second Series, vol 481 (West Publishing Co, St Paul, MN, 1974) page 1079.
- SEAPC v Cammack II Orchards (1987), *Pacific Reporter*, Second Series, vol 744 (West Publishing Co, St Paul, MN, 1988) page 1101.
- Shoshone-Paiute Tribe v US (1994), *Federal Supplement*, vol 889 (West Publishing Co, St Paul, MN, 1995) page 1297.
- Thomas v Peterson (1985), *Federal Reporter*, Second Series, vol 753 (West Publishing Co, St Paul, MN, 1985) page 754.
- Town of Huntington v Marsh (1988), *Federal Reporter*, Second Series, vol 859 (West Publishing Co, St Paul, MN, 1989) page 1134.