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NEPA AND THE CONSIDERATION OF ALTERNATIVES: A CASE STUDY OF THE CORPS OF ENGINEERS' PLANNING FOR CARMEL RIVER

By John Randolph and Leonard Ortolano***

The National Environmental Policy Act of 1969¹ (NEPA) is a short, and in many ways ambiguous, statute which has been the subject of much judicial interpretation.² The courts have played a major role in defining and clarifying what is required of federal agencies in implementing the Act. The standards by which courts can review agency actions, however, are limited. Although court decisions have done much to clarify NEPA's requirements, and the

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¹ 42 U.S.C. § 4321 (1970).

² F. ANDERSON, NEPA IN THE COURTS, A LEGAL ANALYSIS OF THE NATIONAL ENVIRONMENTAL POLICY ACT (1973) [hereinafter cited as ANDERSON, NEPA IN THE COURTS].

Council on Environmental Quality (CEQ) has promulgated guidelines to be used in preparing environmental statements, for the most part the federal agencies have been left with the responsibility of developing procedures to fulfill the intent of NEPA.

NEPA's legislative history and statutory language, CEQ guidelines, and judicial interpretations, all indicate that the intent of NEPA is to require federal agencies to consider environmental factors along with other pertinent issues in all agency planning and decision-making.³ Only if environmental information is considered in making the earliest planning decisions, can agency actions fully reflect the intent of the Act. For only then will agencies generate alternatives conceived in the light of environmental as well as technical and economic considerations and criteria.

This conception of NEPA's intent is widely accepted. For example, Anderson writes that Congress "intended NEPA to affect agency decision making from the very beginning while federal plans are still a glimmer in officialdom's eye."⁴ The Council on Environmental Quality's guidelines for agency implementation of the Act still focus on the environmental impact statement required by NEPA § 102(2)(C),⁵ which is issued relatively late in an agency's planning process. CEQ does give authority to the above conception of NEPA's intent, however, in the following statement from its December 1974 annual report:

[An] environmental analysis needs to be prepared as a rough approximation during the initial planning of a project and then [be] gradually refined as the planning of the project proceeds and as alternatives are identified, analyzed, and perhaps discarded. In this way, the environmental analysis at each stage in the planning process is appropriate to the decisions to be made at that stage . . . [a]nd *the crucial goal of*

³ An argument supporting this interpretation of the intent of NEPA is given in J. RANDOLPH AND L. ORTOLANO, NEPA'S INFLUENCE ON FEDERAL WATER PLANNING: PART 2, CASE STUDIES OF CORPS OF ENGINEERS' PLANNING IN CALIFORNIA 2-1, REPORT NO. EEP-53 (Dep't of Civil Engineering, Stanford Univ.) [hereinafter cited as RANDOLPH AND ORTOLANO, NEPA'S INFLUENCE ON FEDERAL WATER PLANNING, PART 2].

⁴ ANDERSON, NEPA IN THE COURTS, *supra* note 2, at 183. At another point in his analysis, Anderson argues as follows:

NEPA's legislative history often states that Congress wanted federal planners to take environmental factors into account at the moment they began to formulate their ideas and proposals, so that environmental awareness and responsibility would be infused into the very fabric of the federal government. The action forcing requirements obviously could not guarantee the desired change and could not legislate a new federal ethic, but their success clearly was intended to be measured by the extent to which they pushed federal agencies toward this result. *Id.* at 291.

⁵ 42 U.S.C. § 4322(2)(c) (1970).

*NEPA—consideration of the environment in the planning of a project—is accomplished*⁶ (emphasis added).

This article reports on the results of a case study that was performed to analyze how closely the San Francisco District of the United States Army Corps of Engineers attained the intent of NEPA in conducting its survey investigation of the Carmel River Basin in California. The time period covered by this analysis is from December 1970, the time of initiation of the Corps' survey, to February 1976. Because it was initiated after the passage of NEPA, the Carmel River survey investigation provides an excellent opportunity to assess the influence of NEPA on early planning decisions, especially the formulation and ranking of alternative actions.⁷

The article begins with two sections that provide the essential background for an analysis of the influence of NEPA on the Corps' Carmel River survey investigation. This background includes both an introduction to the water related problems in the Carmel River area, and an overview of the way in which the Carmel River survey investigation has been carried out, with special emphasis on the District's consideration of alternatives and its coordination with other agencies and the public. The article then gives detailed consideration to the Corps' execution of the so-called "102 process," which in this case refers to the analyses and coordination leading to the preparation of a draft environmental impact statement. Although the environmental impact statement represents the output from this process, the process itself involves the generation and consideration of information influencing decisions. The final section of the paper analyzes the extent to which the 102 process forced or encouraged Corps planners to consider environmental factors in their planning and decision-making.

I. THE PLANNING CONTEXT: WATER PROBLEMS OF THE CARMEL RIVER BASIN

The Carmel River Basin and the additional area likely to be served by the water resources of the Basin are shown in Figure 1. The Carmel River carries an annual average natural runoff of

⁶ COUNCIL ON ENVIRONMENTAL QUALITY, ENVIRONMENTAL QUALITY 1974 (FIFTH ANNUAL REPORT) 411-12 (1974).

⁷ A companion case study analysis of NEPA's influence on a Corps project that was largely planned prior to NEPA's passage is given in Randolph and Ortolano, *Effect of NEPA on the Corps of Engineers' New Melones Project*, 1 COLUM. J. ENV. L. 233 (1975).

142,300 acre-feet (af)⁸ from a 254 square mile basin on the western slope of the Sierra De Salinas Range. Beginning at an elevation of 3,500 feet, the River flows 35 miles to its mouth just south of the city of Carmel-by-the-Sea (Carmel). Major tributaries include Cachagua, San Clemente and Tularcitos Creeks. The area above the confluence with Tularcitos is largely undisturbed, although two small dams on the upper River have a combined reservoir area of 120 acres. A large portion of the southern side of the Basin is in Los Padres National Forest. Most of the residents of the Basin, 12,000 in 1970,⁹ live in Carmel Valley Village and alongside the lower five miles of the River.

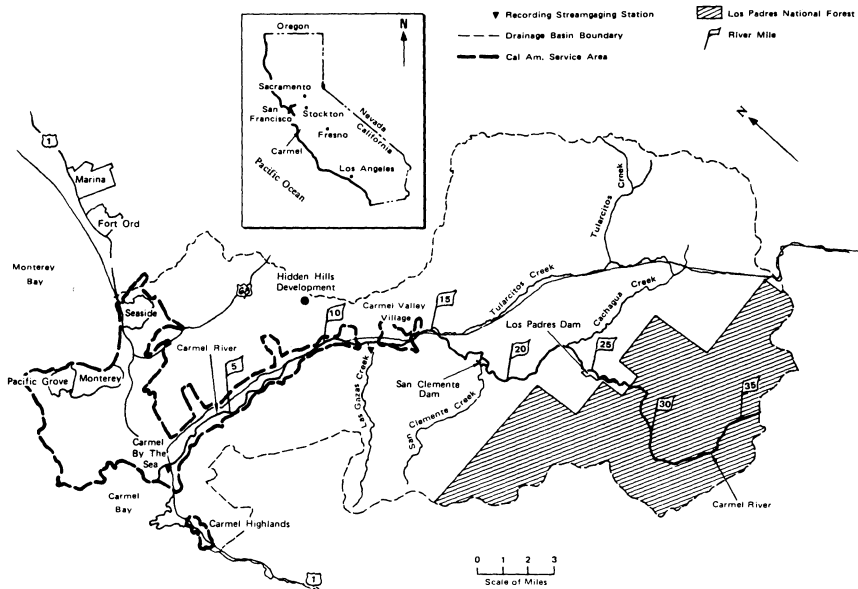


Figure 1 The Carmel River and Environs

Source: California Department of Water Resources

Although Carmel is a relatively old community with stable population levels, it is surrounded by areas that have experienced high growth rates in recent years. Indeed, the population of the drainage basins outlined by dashed lines in Figure 1 (which includes Monterey Peninsula and Arroyo del Rey Basin in addition to the Carmel

⁸ Estimated 50-year mean. STATE OF CALIFORNIA, DEP'T OF WATER RESOURCES, SAN JOAQUIN DISTRICT, CARMEL RIVER BASIN WATER QUALITY INVESTIGATION 18 (1969).

⁹ SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, REPORT ON SURVEY FOR WATER RESOURCES DEVELOPMENT ON CARMEL RIVER AND TRIBUTARIES, PLAN OF SURVEY 2 (Aug. 1971) [hereinafter cited as CORPS PLAN OF SURVEY].

River Basin) has increased from about 30,000 to nearly 90,000 in the past twenty-five years.¹⁰

In attempting to preserve the rural character of their surroundings, residents on the Carmel side of the Monterey Peninsula have long been active in attempts to control growth and development. This attitude is reflected in area plans¹¹ and the positions of some community "influentials", local agencies,¹² and interest groups.¹³ In contrast, other residents, particularly large landowners, believe that they have the right to do what they wish with their property. These contrasting attitudes have led to a number of heated conflicts over specific development plans.¹⁴

A. Water Supply Problems

One of the principal water-associated concerns in the Carmel River Basin relates to the existing water supply levels, which are considered insufficient to permit future population growth. The largest supplier of water in the Monterey Peninsula area is the California American Water Company (CalAm), which bought the previous purveyor, the California Water and Telephone Company (CWTC), in 1966. The CWTC developed the surface waters of the Carmel River by building the San Clemente Dam and the Los Padres Dam which, taken together, yield between 7,500 and 10,000 af/yr.¹⁵ To augment the yield from these reservoirs, CalAm presently

¹⁰ STATE OF CALIFORNIA, POPULATION RESEARCH UNIT, POPULATION ESTIMATES OF CALIFORNIA CITIES AND COUNTIES, REPORT NO. 74 E-1 (1974). Although much of this growth has occurred in Seaside and Monterey, the population of these two cities has not increased substantially since 1970. (*Id.*) Development of shopping centers and subdivisions has recently shifted east and south to the area adjacent to the Monterey-Salinas Highway (Route 68) and to Carmel Valley.

¹¹ See, e.g., MONTEREY PENINSULA AREA PLANNING COMM'N, PRELIMINARY MONTEREY PENINSULA AREA PLAN 5 (Aug. 1972).

¹² In the development of the newest Carmel Valley Village Master Plan, the "concern that the continuation of the fast-paced growth of the scenic area could turn the rural village into an ugly suburbia," led to recommendations "aimed at preserving the quality of the rural village while allowing for controlled growth." *Master Plan for Valley goes before County*, Monterey Peninsula Herald, April 10, 1973.

¹³ In November 1973, the 450 member Carmel Citizens Committee petitioned the California Public Utilities Commission to continue its order restricting water connections in the region, stating that "only in this way can some semblance of ecological standards be preserved." Carmel Pine Cone, November 22, 1973. Another group, the Carmel Valley Property Owners Association, has actively opposed development at the lower end of the Valley.

¹⁴ The most dramatic recent conflict arose over the planned high density development of the Odello artichoke fields at the junction of Highway 1 and the River. Griffith, *Supervisors OK Odello over Strong Protests*, Carmel Pine Cone, January 23, 1973 [hereinafter cited as Griffith, January 1973 article].

¹⁵ The San Clemente Dam, which impounds water on the basis of pre-1914 appropriated

pumps 7,000-9,000 af/yr from both the Carmel Valley and Seaside aquifers in equal proportions.¹⁶ In 1974 CalAm delivered 15,000 af to customers in its service area.¹⁷ Since no connection presently exists between the Seaside and Carmel River Basin supplies, CalAm serves Seaside with only Seaside aquifer water. CalAm, other suppliers, and residents with wells diverted nearly 20,000 af from the Carmel River Basin and the Seaside aquifer in 1972.¹⁸ Evidence that these withdrawals may have exceeded the safe yield of the sources led to restrictive action by the California Public Utilities Commission (PUC) in 1973.

The PUC action was prompted by an October 1972 CalAm application for a certificate to serve the 2000-unit Hidden Hills development (see Figure 1). After a number of hearings, the PUC staff prepared a report which indicated that CalAm and other suppliers were overdrafting Seaside groundwater and pushing the limits of the safe yield of the Carmel Valley aquifer and the two reservoirs on the Carmel River.¹⁹ At hearings in April 1973 the PUC Senior Engineer bluntly predicted "no more building permits, no more development."²⁰ On May 30, 1973, the PUC issued an interim order denying the application and prohibiting CalAm to extend mains "within or from" its system to serve new developments unless the subdivision was in the advanced stages of planning.²¹

Although the PUC estimates of safe yield are lower than those prepared by CalAm²² and the State Department of Water Re-

water rights that are not under the jurisdiction of the State Water Resources Control Board, is 85 feet high and forms a reservoir with a maximum storage of 2,154 and a surface area of 53 acres. The Los Padres Dam, which impounds water under a water rights permit granted to CWTC in 1948 by the State Division of Water Resources (Decision A.11674D582), is 148 feet high and creates a 3,000 af reservoir which covers 67 acres.

¹⁶ STATE OF CALIFORNIA, DEP'T OF WATER RESOURCES, SAN JOAQUIN DISTRICT, ZONE 11 INVESTIGATION, CARMEL VALLEY AND SEASIDE GROUND WATER BASINS, MONTEREY COUNTY 8, 12 (July 1974) [hereinafter cited as DWR GROUND WATER STUDY].

¹⁷ The 1974 deliveries were the lowest since 1969. The delivery of 16,600 af in 1972 was the historic peak. See California American Water Company data.

¹⁸ DWR GROUND WATER STUDY, *supra* note 16 at 8, 11, 12.

¹⁹ Griffith, *Can CalAm Supply Adequate Water?*, Carmel Pine Cone, May 3, 1973 [hereinafter cited as Griffith, May 1973 article].

²⁰ PUC Staff Urges Denial of CalAm Service Extension, Monterey Peninsula Herald, April 25, 1973.

²¹ Cal. Pub. Util. Comm'n, Dec. No. 81443 (May 30, 1973). This order was interpreted to mean that CalAm could only extend service to 1730 vacant lots already fronted by mains. PUC Staff Urges Tight Curb on Peninsula Building, Monterey Peninsula Herald, August 18, 1973.

²² Griffith, May 1973 article, *supra* note 19.

sources,²³ the PUC staff still stands behind its own estimates.²⁴ The PUC interim order has continued through February 1976²⁵ and has been used by the County in denying approval to development proposals.²⁶ The PUC Chief Hydrologist foresees a "long time until CalAm is free of the interim order."²⁷

The above noted intervention of the PUC has brought water supply issues in the Monterey Peninsula area to the forefront.²⁸ In the long term, additional water supplies will be required if water-consuming growth is to continue in the Monterey area. One indication of the magnitude of additional supplies that may be needed is provided by projections of the Association of Monterey Bay Area Governments. For the drainage basins within dashed lines in Figure 1, the Association estimated the 1970 water use to be 16,000 af and projected the annual water use at 23,500 af in 2000;²⁹ the latter figure presupposes a Monterey Peninsula area population of 123,000, which is the estimate made by the California Department of Finance.³⁰

In an effort to deal with this expected long term water supply problem, CalAm has been considering the development of a new dam on the Carmel River.³¹ It has proposed a single purpose water

²³ DWR GROUND WATER STUDY, *supra* note 16, at 13, 17.

²⁴ Telephone conversation with Mr. Martin Abrahamson, Cal. Public Utilities Comm'n, Chief Hydrologist, February 28, 1975. For a more complete analysis of the conflicting estimates of water yield, see EDWIN B. LEE (member of the Zone 11 Advisory Committee of the Monterey County Flood Control and Water Conservation District), SUMMARY REPORT OF FACTS, ANALYSIS, AND CONCLUSIONS RELATING TO THE MONTEREY PENINSULA WATER SUPPLY PROBLEM (December 10, 1974).

²⁵ A second interim order, Cal. Pub. Util. Comm'n, Dec. No. 84527 (July 15, 1975), strengthened the initial order by restricting new construction to only those developments already with building permits. Still another order, Cal. Pub. Util. Comm'n, Dec. No. 85409, (Feb. 3, 1976), denied an application of the Monterey Peninsula area mayors to have the local communities take over from the PUC resolution of the water problem. Further hearings on the issue are scheduled for May 1976. Telephone conversation with Mr. Eugene Lill, California Public Utilities Commission staff, March 1, 1976.

²⁶ *Forest Project May Become Early Water Dearth Victim*, Monterey Peninsula Herald, September 26, 1973.

²⁷ Telephone conversation with Mr. Martin Abrahamson, February 28, 1975, *supra* note 24.

²⁸ Griffith, *Peninsula Faces Long-Expected Water Crisis—Rationing, Building Halt, Inflated Rates are all in Prospect*, Monterey Peninsula Herald, September 23, 1973 [hereinafter cited as Griffith, September 1973 article].

²⁹ ASS'N OF MONTEREY BAY AREA GOVERNMENTS, WATER QUALITY MANAGEMENT PLAN, FINAL REPORT 4-14, 5-8 (Dec. 1973).

³⁰ *Id.* at 4-11.

³¹ Griffith, *Peninsula Swamped by 5 Years of Water and Sewage Studies*, Monterey Peninsula Herald, November 17, 1974.

supply dam and reservoir which would increase the area's yield from the current level of about 22,200 af/yr up to approximately 34,200 af/yr.³² CalAm has delayed action on this project for two reasons: its poor financial position,³³ and the Corps of Engineers' survey investigation for the Carmel River Basin. The Corps' proposal, which will not be finalized until at least August 1976, involves a multipurpose dam and reservoir which would increase the area's yield to about 58,200 af/yr.³⁴ In addition to the water supply planning being done by CalAm and the Corps, the Zone 11 Advisory Committee of the Monterey County Flood Control and Water Conservation District is investigating other sources of water including wastewater reclamation and "imported" water from the United States Bureau of Reclamation's San Felipe project.³⁵ The Monterey County Board of Supervisors is expected to decide on a water supply plan from among the alternatives after the Corps completes its survey investigation.³⁶

B. *Flooding Problems*

A second major water-related problem in the Carmel River Basin concerns the periodic flooding of land developments along the stretches below the River's confluence with Tularcitos Creek. Flooding problems have become significant because of the commercial and residential development of the flood plain which took place during the floodless period from 1958 to 1969. For example, a flood in 1958 caused damages estimated at \$0.72 million, while a flood of lesser magnitude in 1969 caused damages estimated at \$1.28 million (both in 1974 dollars).³⁷ In 1974 an estimated 1,050 of the 2,629 acres in the flood plain had been developed (the former estimate includes

³² The present safe yield figure of 22,200 af/yr assumes safe yields of 11,000 af/yr for Carmel Valley aquifer (estimates range from 5,000 to 15,000 af/yr), 9,000 af/yr for existing Carmel River reservoirs, and 2,200 for Seaside aquifer. The CalAm's proposed 33,000 af reservoir would increase the yield of the Carmel River to 21,000 af/yr. Telephone conversation with Mr. Dick Sullivan, California American Water Company, April 22, 1975.

³³ Griffith, September 1973 article, *supra* note 28.

³⁴ The Corps' proposed 154,000 af reservoir would increase the yield of the Carmel River to 45,000 af/yr. SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, PUBLIC INFORMATION BROCHURE ON WATER RESOURCES, ALTERNATIVE PLANS OF IMPROVEMENT FOR THE CARMEL RIVER BASIN (December 1974).

³⁵ Telephone conversation with Mr. Manuel De Maria, Chairman, Zone 11 Advisory Committee of the Monterey County Flood Control and Water Conservation District, March 9, 1975.

³⁶ Telephone conversation with Mr. Robert Binder, Monterey County Flood Control and Water Conservation District, February 4, 1976.

³⁷ SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, PROGRESS REPORT ON CARMEL RIVER SURVEY STUDIES FOR CHECKPOINT I CONFERENCE, CARMEL RIVER SURVEY INVESTIGATION, at E-8, 9 (April 18, 1974) [hereinafter cited as CHECKPOINT I PROGRESS REPORT].

golf courses).³⁸ Although a number of the recent proposals for development in the flood plain have been either modified³⁹ or rejected⁴⁰ because of flood hazard, some flood plain development proposals continue to gain the approval of the Monterey County Board of Supervisors.

In 1968 Monterey County included in its zoning regulations a set of zones where development in flood plains could be restricted.⁴¹ Such zones, however, are under the regulations classified by the County Board of Supervisors. Although County and local planners support the application of the flood plain zoning regulations, the political pressure exerted by landowners and developers has restricted their application in the Carmel River flood plain.⁴² During the early 1970's only three applications of these flood plain zoning regulations on subdivisions in the County occurred; all three involved Carmel Valley subdivisions.⁴³ Although the application of the zoning regulations to the entire Valley flood plain failed in a vote by the Board of Supervisors,⁴⁴ pressures are growing to have the Board reconsider its position. Some of these pressures have been brought by the Carmel Valley Property Owners Association.⁴⁵

³⁸ *Id.* at E-7.

³⁹ See, e.g., Griffith, January 1973 article, *supra* note 16, and *Riverwood Runs into Flak*, Carmel Pine Cone, September 21, 1972.

⁴⁰ See, e.g., *Supervisors Nix Schaals' Carmel River Plan*, Carmel Pine Cone, August 9, 1973.

⁴¹ Monterey County, Cal., Zoning Ordinance § 28.3 - .5 (1968). The zoning regulations are summarized below.

a. In primary flood plains, defined as areas needed to carry flood flows (*i.e.*, the channel), crop farming or similar uses are permitted. With a Use Permit, recreational uses or uses protected by levees are allowed, provided such uses do not restrict the carrying capacity of the floodway. (The zone is referred to as FP-1.)

b. In secondary flood plains, defined as areas subject to inundation by backwater free of current, structures are permitted whose lowest habitable floor is above the flood profile level shown on a Flood Plain Zoning Map of the area. Recreational uses and uses protected by levees are also allowed with a Use Permit. (FP-2)

c. In primary and secondary flood plains which have been protected by works meeting County, State, or Federal specifications, all uses are permitted. (FP-3)

⁴² Personal interview with Mr. Willard Branson, former member, Monterey County Board of Supervisors, November 13, 1974; Telephone conversation with Mr. Robert Slimmon, Monterey County Zoning Administrator, March 10, 1975.

⁴³ The three applications include a 29 lot subdivision on Garzas Road in Carmel Valley Village in May 1972, and the Riverwood and Arroyo Carmel developments near the mouth of the river in December 1972. All three applications were initiated by the developers, after strong argument for the latter two by the County Planning Department. Telephone conversation with Mr. Slimmon, March 10, 1975, *supra* note 42.

⁴⁴ Personal interview with Mr. Willard Branson, November 13, 1974, *supra* note 42; Griffith, *Supervisors Agree: No Flood Plain Zoning for Carmel Valley*, Carmel Pine Cone, April 13, 1972.

⁴⁵ Telephone conversation with Mr. Tate, Monterey Peninsula Regional Park District, March 27, 1975.

Another source of pressure for more stringent flood plain management measures is the Flood Disaster Protection Act of 1973.⁴⁶ This Act provides a 90% federal subsidy of an individual's flood insurance premium if the community participates in the National Flood Insurance Program (NFIP) by instituting an acceptable flood plain management program. A key feature of the Act is that if communities identified as flood prone do *not* participate in the NFIP by one year after flood plain maps are made available, they will be ineligible for disaster relief and federal assistance of any kind in the flood prone area.⁴⁷ Without structural measures for flood control (*e.g.*, an upstream reservoir), the Board of Supervisors would be under considerable pressure to apply flood plain zoning in the Carmel Valley flood plain and participate in the NFIP. Some residents of the Valley have argued that if an upstream reservoir were developed for water supply purposes, it should *not* include provisions for flood control; they see flood insurance as a "better and fairer method of protecting the property already developed in the flood plain."⁴⁸

II. THE CARMEL RIVER SURVEY INVESTIGATION

In order to analyze NEPA's influence on the Corps' Carmel River survey investigation,⁴⁹ one must understand the manner in which the Corps' San Francisco District conducted the survey and the factors which influenced its planning and decision-making. After first giving background information on the Corps and its survey procedures, this section introduces the individuals in the District who conducted studies relating to the Carmel River and discusses the interaction among them. The discussion then considers the District's planning process, with emphasis on the manner in which alternative actions were explored and the extent to which the public and other agencies were involved in the investigation.

The Corps' jurisdiction over the nation's navigable waterways has expanded since its inception in the early 1800's. The Flood Control Act of 1936⁵⁰ gave the Corps formal responsibility to plan for and

⁴⁶ 42 U.S.C. § 4002 (Supp. III, 1973).

⁴⁷ Telephone conversation with Mr. Robert Binder, February 4, 1975, *supra* note 36.

⁴⁸ CARMEL CITIZENS COMMITTEE, STATEMENT ON THE WATER PROBLEMS OF THE MONTEREY PENINSULA AND THE CARMEL VALLEY 4-5 (October 1974).

⁴⁹ Although the Corps' San Francisco District performed occasional studies on the Carmel River for nearly 30 years prior to the passage of NEPA, these studies were not of major significance and are not considered here. A brief overview of these pre-1970 District planning activities is given by RANDOLPH AND ORTOLANO, NEPA'S INFLUENCE ON FEDERAL WATER PLANNING, PART 2, *supra* note 3, at 4-16, 4-17.

⁵⁰ 33 U.S.C. § 701a (1970).

construct protection works against floods. Subsequent statutes authorized the Corps to include provisions for water supply⁵¹ and recreation⁵² in flood control projects, particularly reservoirs. Other laws required that Corps planners give consideration to fish and wildlife resources⁵³ and objects of historic interest.⁵⁴ Recently, NEPA and the Water Resources Council's Principles and Standards⁵⁵ have required that the Corps give increased attention to environmental quality considerations.

The Corps is headquartered in the Office of the Chief of Engineers (OCE) in Washington, D.C., and some of its duties are distributed among nine geographically defined Divisions, which are further subdivided into thirty-four Districts. Water resources plans are formulated in the District offices. Part of the responsibility of the Division offices and the Office of the Chief includes the promulgation of regulations to guide the District planners and the oversight and review of District studies and proposals.

The cornerstone of the Corps' water resources planning is the survey investigation, which is the initial phase of the process leading from problem identification to project construction. The purpose of the survey is to determine whether the solution of a specific water problem is in the "federal interest."⁵⁶ After being requested by local interests, a survey investigation must be authorized by the House

⁵¹ Water Supply Act of 1958, 43 U.S.C. § 390b (1970).

⁵² 16 U.S.C. § 460(d) (1970).

⁵³ Fish and Wildlife Coordination Act, 16 U.S.C. § 661 (1970).

⁵⁴ Historic Preservation Act of 1966, 16 U.S.C. § 470 (1970).

⁵⁵ Water Resources Council, Principles and Standards for Planning Water and Related Land Resources, 38 Fed. Reg. 24778-869 (September 10, 1973) [hereinafter cited as Principles and Standards]. The Water Resources Planning Act of 1965, 42 U.S.C. § 1962a (1970), established the Water Resources Council and gave it a mandate to develop new principles and standards for water resources planning.

⁵⁶ Under the Flood Control Act of 1936, a flood control project was defined to be in the federal interest if "the benefits to whomsoever they may accrue are in excess of the estimated cost, and if the lives and social security of people are otherwise adversely affected." 33 U.S.C. § 701a (1970). Subsequent guidelines for determining the federal interest of water projects emphasized the national economic development; if economic benefits could be shown to exceed economic costs (*i.e.*, if the benefit to cost ratio (B/C) were greater than one), the project was in the federal interest. WATER RESOURCES COUNCIL, POLICIES, STANDARDS AND PROCEDURES IN THE FORMATION, EVALUATION AND REVIEW OF PLANS FOR USE AND DEVELOPMENT OF WATER AND RELATED LAND RESOURCES, S. DOC. No. 97, 87th Cong., 2d Sess. (1962). The 1973 Principles and Standards, *supra* note 55, and the Corps' implementing regulations give less emphasis to economic development. OFFICE OF CHIEF ENGINEER, PLANNING PROCESS: MULTIOBJECTIVE PLANNING FRAMEWORK, ER 1105-2-XXX (May 12, 1975). For example, if the economic B/C ratio drops below one as a result of benefits foregone or additional costs incurred to serve environmental quality, the plan may still be considered in the federal interest.

and Senate Committees on Public Works. A specific survey is assigned to a Corps District, which conducts the planning leading to a recommended action. If the District formulates a project determined to be in the federal interest, the project is described in a "survey report" which is submitted to Congress for project authorization.

The pre-authorization planning process leading to the survey report⁵⁷ begins with the assignment of a study manager who coordinates the first of three public meetings. The first meeting is intended to assess local concerns and identify interested parties. After the meeting and the preparation of a management plan for the survey (the Plan of Study), District personnel under direction of the study manager conduct "Phase I studies," which explore problems and needs of the study area and evaluate alternatives in sufficient detail to determine whether more detailed study is warranted. The resulting Phase I report is reviewed by Division personnel. After more study a meeting is held with Division and OCE personnel to discuss progress and direction (Checkpoint I Conference). This conference precedes the second public meeting at which all alternatives are displayed; the second meeting occurs before any alternative is tentatively selected. After more study and another conference with the Division, the District prepares a draft survey report, which is reviewed by the Division and other agencies. A draft environmental impact statement is distributed to the public before the third public meeting at which preliminary recommendations are presented. The survey report and environmental statement are then finalized and sent to Washington where they are reviewed by the Board of Engineers for Rivers and Harbors, OCE and the Office of Management and Budget before being sent to Congress for authorization.

Although the Carmel River study was authorized in 1941,⁵⁸ a general lack of local interest in the study delayed its initiation until after the 1969 flood. At that time the Monterey County Board of Supervisors requested the Corps to conduct a full investigation of the water resources problems of the area under the 1941 authorization.

⁵⁷ The following summary is taken from the Office of Chief Engineer, Intensive Management Program Monitor System, Eng'r Reg. 18-2-2 (August 1, 1974).

⁵⁸ The Congressional authorization for the Carmel River survey investigation is contained in the Flood Control Act of 1941, 33 U.S.C. § 701f (1970). The Act authorized a study of the Carmel River for flood control and allied purposes, Pub. L. No. 77-228 (1941).

A. *Organization of Personnel and Flow of Information*

When the Carmel River survey was initiated in December 1970, a member of the District's Water Resources and Urban Planning Branch (Planning Branch) was assigned as study manager to formulate alternative actions at a preliminary conceptual level and to coordinate all District studies relating to the Carmel River. Through the early stages of planning, in addition to the study manager, members of the Environmental Branch, the Hydrology and Hydraulics Section, the Economics Section, the Estimating Section, and the Dam Design and Geology Sections worked on Carmel River studies. The representatives of these branches and sections together with the study manager are referred to as the "study group."⁵⁹ Note, however, that all studies were not performed concurrently. They were performed as they were needed or were able to be conducted; in some cases specific studies changed hands as personnel changes occurred.

The most important and influential member of the study group was the study manager; he specified which alternatives would be examined, specified studies to be performed by individuals in the various branches and sections, and coordinated the studies. He also played a dominant role in directing the flow of substantive information by interpreting and "filtering" study results as they flowed between the technical sections. In addition, the study manager had continual contact with CalAm and local representatives serving on the Zone 11 Advisory Committee of the Monterey County Flood Control and Water Conservation District and occasional contact with other federal agencies. The study manager received instruction and guidance from a "survey monitor" at the South Pacific Division and from his supervisor, the Chief of the Urban Planning Branch (Planning Chief). Due to personnel changes three different study managers⁶⁰ were involved in the investigation. Because of this turnover, the Planning Chiefs played an influential role in maintaining the continuity and direction of the survey.⁶¹

⁵⁹ Because of the lack of frequent interaction among the members of various branches working on the survey, the term "study group" is used herein in contrast to the term "planning team."

⁶⁰ The first manager was involved only through the initial public meeting (March 1971). The second managed the study from shortly after the initial public meeting through the so-called "Checkpoint I conference" with the South Pacific Division (April 1974). The third managed the study from June 1974 to July 1975.

⁶¹ Personal interview with Mr. Jake Harari, Chief, Urban Planning Section, San Francisco District, United States Army Corps of Engineers, October 10, 1974. Harari was a principal figure at both public meetings, Zone 11 AC meetings and PUC hearings.

For the most part, each technical specialist in the study group conducted his specific studies without interacting with other members.⁶² One important exception occurred, however. The Environmental Branch's representative on the study group, the environmental coordinator, requested information from other studies which related to his analysis of environmental impacts.⁶³ This request, and the specific communication he had with other agencies, made the environmental coordinator's role different from that of other members of the study group.

Although the formal organizational structure of the study group suggests that this study was multidisciplinary, it was not truly interdisciplinary. Little structured interaction among specialists in the study group occurred. Indeed, in the view of the first study manager, the representatives of the various sections were more his technical consultants than members of an interdisciplinary planning team.⁶⁴

B. *The Study of Alternative Actions*

The four year planning period between the initiation of the survey in December 1970 and the public meeting held in December 1974 was dominated by the examination of alternative actions for dealing with the water problems of the Carmel River. In principle, the study of alternatives in a Corps survey investigation proceeds in the following manner. Beginning with a range of alternative concepts (*e.g.*, channel improvements, dam and reservoir, non-structural measures), a number of feasible alternative actions are studied and refined. A range of specific alternative actions is then presented, without recommendation or bias, to local groups for their consideration. Casual inquiry into the Carmel River investigation gave the impression that this procedure was followed; in the words of the Planning Chief, "[a]ll alternatives have been considered."⁶⁵

In fact, however, the study of alternatives for the Carmel investigation did not proceed in the manner described above. Early studies first concentrated on alternative dam and reservoir sites, then on a single dam site. Relatively late in the study, six to eight months

⁶² Personal interview with Mr. Les Tong, Environmental Branch, San Francisco District, United States Corps of Army Engineers, May 22, 1974.

⁶³ *Id.*

⁶⁴ Personal interview with Mr. John Breadon, Urban Planning Section, San Francisco District, United States Army Corps of Engineers, May 22, 1974.

⁶⁵ Personal interview with Mr. Jake Harari, October 10, 1974, *supra* note 61.

prior to the December 1974 public meeting, studies were conducted on alternatives that did not involve reservoirs. The progression of the study of alternatives is discussed in detail below.

1. *Initial public meeting through release of working paper*

A potentially important source of information in any Corps survey is the initial public meeting which a District holds to obtain an assessment of local concerns. In the case of the Carmel survey, the initial public meeting held in March 1971 proved to be especially significant because it greatly influenced the District's attitudes regarding the types of alternative action to be considered seriously. For one thing, the testimony opposing channel modifications because of associated changes in the natural environmental setting⁶⁶ led the District to argue in their August 1971 Plan of Study⁶⁷ and subsequent progress reports⁶⁸ against giving serious attention to channel modification as a means for controlling floods. In addition, testimony opposing the potential influx of recreationists attracted by elaborate recreation facilities that might be associated with a Corps reservoir project led the District to consider only minimal recreation facility developments around any proposed reservoir projects.⁶⁹ Finally, the testimony of the County zoning administrator, which indicated that Carmel Valley residents had not applied County flood plain zoning regulations,⁷⁰ was used by the District as a rationale for not giving detailed consideration to flood plain management and other non-structural measures of flood damage reduction.⁷¹

At the time of the public meeting the District also learned that CalAm was planning to augment its water supply by building a dam on the Carmel River. CalAm's original schedule called for construction of a new dam before the District was scheduled to complete its survey investigation. Upon learning of the Corps survey, however, CalAm decided to delay construction of a new dam until the District

⁶⁶ Transcript, Public Meeting on Water Resources Development on the Carmel River and Tributaries, March 19, 1971 [hereinafter cited as Transcript of Public Meeting].

⁶⁷ CORPS PLAN OF SURVEY, *supra* note 10, at 10.

⁶⁸ CHECKPOINT I PROGRESS REPORT, *supra* note 37, at 2.

⁶⁹ Personal interview with Mr. John Breadon, May 22, 1974, *supra* note 64.

⁷⁰ Testimony of Mr. Robert Slimmon, Transcript of Public Meeting, *supra* note 66.

⁷¹ See, e.g., SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, CARMEL RIVER BASIN PRELIMINARY REPORT, April 6, 1974 [hereinafter cited as PRELIMINARY REPORT]. There it is argued that although future studies would include flood insurance and flood plain management, "past experience shows that flood plain management is not effective in the basin."

had investigated the feasibility of federal participation in a multi-purpose reservoir project that included water supply as one of its purposes. As it turned out, CalAm shared information with the District and provided continual support for a Corps multipurpose reservoir project.⁷²

CalAm's position, together with the testimony at the March 1971 public meeting,⁷³ led the District to observe in its August 1971 Plan of Study that while other alternatives would be studied:

at this stage of the investigation, it appears the most practical plan of improvement, based on the criteria of meeting the water resources needs of the basin and conforming to the desires of local interests, would be a dam and reservoir project.⁷⁴

From August 1971 to April 1973, the study manager sought to determine the technical and economic feasibility of such a multi-purpose dam and reservoir project.⁷⁵ During this period members of the District's technical sections conducted hydrologic, geologic, and economic studies, and an initial environmental analysis for five different dam sites in the Carmel River Basin. Based on the geologic and economic studies, the most favorable of the five sites was a short distance downstream from the CalAm's existing San Clemente dam (the San Clemente site).⁷⁶ Consequently, the District's "Phase I Preliminary Report," issued in April 1973, suggested that "major emphasis be placed on San Clemente site studies."⁷⁷ In justifying

⁷² Because CalAm has been plagued by financial problems and sees economic advantages if a Corps reservoir is built, it has provided continual support for a Corps multipurpose reservoir project. *See, e.g.*, CHECKPOINT I PROGRESS REPORT, *supra* note 37, at 4. Throughout the Corps survey, however, CalAm has maintained its own proposal for a single purpose water supply project because of the possibility of delays in Congressional appropriations; it also recognizes that a federal project could be delayed or halted because of local concerns over project induced growth. Personal interview with Mr. Dick Sullivan, California American Water Company, November 13, 1974.

⁷³ Transcript of Public Meeting, *supra* note 66. Note also that at the March 1971 public meeting, some individuals, including a Sierra Club representative, mentioned that a Corps dam on the Carmel River might be acceptable.

⁷⁴ CORPS PLAN OF SURVEY, *supra* note 9, at 24. The PLAN OF SURVEY also noted that because of CalAm's plans, "it would be desirable to . . . vary the normal survey investigation procedure somewhat in order to obtain the preliminary results of the survey at an early date to compromise with the water company's schedule." *Id.* at 13.

⁷⁵ Personal interview with Mr. John Breadon, Urban Planning Section, San Francisco District, United States Army Corps of Engineers, April 17, 1974.

⁷⁶ PRELIMINARY REPORT, *supra* note 71. The geologic studies indicated that the so-called "Klondike" dam site was traversed by two active faults, and thus the size of a reservoir at that site would be limited. Three other dam sites (referred to as Pine Creek, Los Padres and Cachagua) were found to be economically infeasible.

⁷⁷ PRELIMINARY REPORT, *supra* note 71.

the District's emphasis on alternative reservoir projects, the April 1973 preliminary report cites, ". . . the urgency of the water supply needs and a commitment to the local people for a preliminary study to determine the feasibility of Federal participation in a multipurpose reservoir . . ." ⁷⁸ The preliminary report also indicated that other alternatives, including flood plain management and channel "improvements", would be included in future studies. ⁷⁹

The environmental studies conducted during the period between August 1971 and April 1973 were used in the preparation of an environmental Working Paper. ⁸⁰ The Working Paper, which constituted a pre-environmental statement required by a directive of the South Pacific Division, ⁸¹ was circulated to various agencies and public groups in August 1973. The Working Paper reflected the emphasis of the survey since its initiation in that the only alternative actions which it discussed were "no-action" and alternative multipurpose reservoir projects. Comments on the Working Paper criticized the narrow range of alternatives which the District was exploring ⁸² and included specific suggestions to explore non-structural measures for flood damage mitigation and external sources of water. Notwithstanding these comments, the study manager was convinced by information obtained in the preparation and review of the Working Paper that the San Clemente site was the best choice environmentally as well as economically and technically.

⁷⁸ *Id.* The Zone 11 Advisory Committee continually reinforced the District's belief that a multipurpose reservoir project was in the "local interest." Indeed, the Chairman of the Zone 11 Advisory Committee felt that without the Corps involvement no dam would be built. He counted on the Corps "to get the area out of its long range water supply problems." Personal interview with Mr. Manual De Maria, Chairman, Zone 11 Advisory Committee, November 13, 1974.

⁷⁹ However, in its discussion of future studies, the PRELIMINARY REPORT observes, "we are aware that extensive channel improvements won't be accepted by local residents and past experience shows that flood plain management is not effective in the basin."

⁸⁰ SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, WORKING PAPER, ENVIRONMENTAL EVALUATION OF ALTERNATIVE PLANS OF IMPROVEMENT FOR FLOOD CONTROL AND ALLIED PURPOSES, CARMEL RIVER AND TRIBUTARIES, August 1973 [hereinafter cited as WORKING PAPER].

⁸¹ South Pacific Division, U.S. Army Corps of Engineers, San Francisco, Cal., letter to District Engineers, *Environmental Statements Coordination—Federal, State and Local Agencies, Organizations and Interested Citizens*, March 22, 1971. The environmental paper concept and its use in the Carmel Survey are discussed more fully in Section III, *infra*.

⁸² A review of letters received in response to the Working Paper showed that comments from the Environmental Protection Agency, the United States Forest Service, the California Department of Forestry, the United States Fish and Wildlife Service, and two local residents contained this criticism. See text at notes 91, 108 *infra*.

2. *Release of Working Paper to "Checkpoint I conference"*

Contrary to indications given in the April 1973 Preliminary Report, District studies conducted immediately after the release of the Preliminary Report continued to emphasize only dam and reservoir projects. Such emphasis, of course, was unresponsive to comments received on the Working Paper. From August 1973 to the time of the District's progress review meeting with South Pacific Division (Checkpoint I conference) in April 1974, the District's work revolved around detailed studies of a new dam at the San Clemente site.⁸³ Engineering studies included preliminary designs of earth-fill dam embankments, a spillway and outlet works for dams of three elevations, all located at the San Clemente site. Environmental studies involved an analysis of environmental impacts associated with a new, enlarged San Clemente dam.

Although the economic studies for the Checkpoint I conference did include preliminary cost-benefit estimates for levees, the studies dealt primarily with alternative reservoir *sizes* at the San Clemente site. These studies concluded that the "optimum" multipurpose project was a 156,000 acre-feet (af) reservoir, with 42,000 af of storage to accommodate flood flows associated with the "100-year storm"⁸⁴ and the remainder to provide a 40,000 af/yr water yield. This determination was based entirely on an economic analysis of various reservoir sizes and was done in three stages. First, economic benefits for different levels of water supply were computed. For a given level, these benefits were assumed equal to the cost of the least expensive single purpose water supply reservoir (financed by 6% municipal bonds) that could meet that level of supply. Second, the optimum flood control project was determined by comparing the net annual benefits of 50-year, 100-year, and "standard project flood" protection storage added to the largest water supply storage computed in the first step. From this procedure, storage which provided protection against the 100-year flood event had the greatest net benefits and was judged the "optimum flood control project". Finally, reservoirs providing storage for the 100-year event but with varying water capacities were compared, using the water supply benefits computed in the first step. The largest size, providing 122,000 af of water supply storage, was found to have the greatest

⁸³ These studies were reported in the CHECKPOINT I PROGRESS REPORT, *supra* note 37. The following discussion of the studies is based on that report.

⁸⁴ The storm which based on hydrologic data has the probability of occurring once in 100 years.

net benefits and was determined the optimum project.⁸⁵

The District's narrow focus on multipurpose reservoirs was subjected to criticism at the Checkpoint I conference by the South Pacific Division's survey monitor.⁸⁶ The survey monitor argued that the District should be prepared to display a more expansive range of both structural and non-structural alternatives before a second public meeting was held. In particular, the survey monitor called for a display of alternatives that corresponded to the so-called "National Economic Development" and "Environmental Quality" plans required by the Water Resources Council's "Principles and Standards."⁸⁷ He also indicated that "channel improvement alternatives should be formulated and displayed."⁸⁸

3. *Checkpoint I conference to December 1974 public meeting*

The seven months from the Checkpoint I conference to the second public meeting in December 1974 were marked by a change in study managers, a revision of some economic studies,⁸⁹ and an examination of new alternatives. The new study manager's principal task involved coordinating the District's efforts to formulate non-reservoir alternatives to be included in the presentation at the December 1974 public meeting. Among the new alternatives examined were the following three levee systems: one protecting the entire flood plain length, one protecting only existing flood plain developments, and one involving a combination of a multipurpose reservoir and levees. None of the three levee systems could be shown to be economically feasible (*i.e.*, none had a benefit-cost ratio greater than one). In addition to these three levee systems, the District described two other alternatives both in their "public information brochure"⁹⁰ and at the December 1974 public meeting: a

⁸⁵ This method of determining "optimum" water conservation storage (*i.e.*, using the costs of single purpose reservoir sizes to compute water supply benefits) will, when economies of scale exist, always determine the largest potential development to have the greatest "net benefit."

⁸⁶ Personal interview with Mr. Maurice Jackson, Plan Formulation, South Pacific Division, U.S. Army Corps of Engineers, September 30, 1974.

⁸⁷ Principles and Standards, *supra* note 55.

⁸⁸ Mr. Maurice Jackson, Memorandum for the Record, Checkpoint I Conference, Carmel River Basin, April 23, 1974 [hereinafter cited as Jackson memo].

⁸⁹ In response to direction from the South Pacific Division, U.S. Army Corps of Engineers flood control benefit studies were revised to reflect the provisions of the Flood Disaster Protection Act of 1973, 42 U.S.C. § 4001 (Supp. III, 1973). After these revisions were made, the San Clemente multipurpose reservoir discussed above continued to be the alternative having the greatest net benefits.

⁹⁰ SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, PUBLIC INFORMATION BRO-

multipurpose dam and reservoir at the San Clemente site⁹¹ (*i.e.*, the same alternative formulated for the Checkpoint I conference with additional fish and wildlife mitigation features), and a non-structural alternative, a mere listing of possible non-structural measures.

One alternative that the District did not manage to formulate in its entirety for presentation at the public meeting was the Environmental Quality alternative called for by the Division survey monitor. Prior to the December 1974 public meeting, the study manager delegated the responsibility for devising an Environmental Quality alternative to the environmental coordinator and his associates in the Environmental Branch. The alternative which they formulated consisted of three elements: (1) flood plain zoning with flood insurance; (2) non-structural measures for reducing damages to existing structures (*e.g.*, flood warning system, flood proofing, relocation); and (3) the relocation of the water supply intake from the existing San Clemente reservoir to the mouth of the River to increase summer flows.⁹² After observing that this alternative did not provide new water supplies, the study manager directed the environmental coordinator to reformulate the Environmental Quality plan so that it meets "the basic area water resources needs."⁹³ The 1976 version of the Environmental Quality plan involves a combination of special protection levees, flood plain zoning, and water importation.⁹⁴ A description of this alternative was not available for consideration by the public at the December 1974 meeting.

That meeting was intended as an opportunity for the District and those present to discuss the range of alternative actions. As it turned out, both the District's presentation and the testimony of others at the meeting focused on the alternative involving a multipurpose dam and reservoir at the San Clemente site (the San Clemente alternative). Testimony at the meeting focused on water supply problems; flooding problems were mentioned only in passing. A

CHURE ON WATER RESOURCES, ALTERNATIVE PLANS OF IMPROVEMENT FOR CARMEL RIVER BASIN (December 1974) [hereinafter cited as CORPS DECEMBER 1974 BROCHURE].

⁹¹ The multipurpose San Clemente project provides water supply and flood control, has a benefit-cost ratio of 1.6 and requires reimbursement of the water supply portion of the total costs (*i.e.*, \$52.6 million of the total \$59.5 million). *Id.*

⁹² ENVIRONMENTAL BRANCH, SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS, CARMEL RIVER: DETERMINATION OF THE 'EQ' ALTERNATIVE (undated).

⁹³ Col. H. A. Flertzheim, Jr., District Engineer, statement at public meeting, December 17, 1974.

⁹⁴ Telephone conversation with Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, April 27, 1976.

number of concerns were raised regarding the San Clemente alternative: adverse impacts on the River fishery, the large local costs involved, and the population growth which might be induced by such a multipurpose reservoir project.⁹⁵

The District surveyed those in attendance at the December 1974 public meeting as to their preferences on the various alternatives. Of the 77 survey responses, 46% favored the San Clemente alternative, 25% favored non-structural measures, and 27% favored no federal project or other alternative.⁹⁶ Following the public meeting, the Monterey County Board of Supervisors requested that the District complete a survey report on the San Clemente alternative.⁹⁷ The District expects to complete a draft survey report in August 1976.⁹⁸ After the Corps' survey is complete, the Board of Supervisors, as the decision-making body responsible for generating local funds for any of the alternatives, will decide from among the Corps' proposals, the CalAm's proposed single-purpose project,⁹⁹ and other water supply alternatives investigated by the Zone 11 Advisory Committee.

C. *Fish and Wildlife Coordination*¹⁰⁰

An aspect of the Carmel River survey investigation that is of special interest herein concerns the manner in which the District carried out coordination under the Fish and Wildlife Coordination Act of 1958.¹⁰¹ This process is noteworthy because, like the inter-agency coordination carried out under NEPA,¹⁰² the coordination

⁹⁵ San Francisco District, U.S. Army Corps of Engineers, Transcript of Public Meeting on Carmel River Investigation, December 17, 1974.

⁹⁶ Telephone conversation with Mr. James Hubner, Urban Planning Branch, San Francisco District, United States Corps of Army Engineers, March 3, 1975.

⁹⁷ Telephone conversation with Mr. James Hubner, Urban Planning Branch, San Francisco District, United States Army Corps of Engineers, April 24, 1975.

⁹⁸ Telephone conversation with Mr. Robert Binder, February 4, 1976, *supra* note 36.

⁹⁹ According to CalAm figures, local annual costs would be less for the CalAm proposal than for the Corps alternative. Telephone conversation with Mr. Dick Sullivan, April 22, 1975, *supra* note 32.

¹⁰⁰ Coordination with agencies other than fish and wildlife agencies was, with one exception, not especially noteworthy for purposes of this analysis. The one exception concerned coordination with the California Department of Parks and Recreation and is discussed in Section IV, *infra*.

¹⁰¹ 16 U.S.C. § 661 (1970). See also Office of Chief Engineer, Preservation and Enhancement of Fish and Wildlife Resources, Eng'r Reg. 1105-2-129 (August 23, 1973):

[f]ish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resources development programs. Early and continuing coordination is essential to fulfill the spirit and intent of law and administrative policy.

¹⁰² For a further discussion of Corps of Engineers' interagency coordination under NEPA,

under the Fish and Wildlife Coordination Act also affects the consideration of environmental factors in water resources planning. The discussion below gives an overview of the District's coordination with fish and wildlife agencies during the Carmel survey, and discusses the extent to which this coordination was influenced by NEPA.

Although the California Department of Fish and Game (DFG) and the United States Bureau of Sport Fisheries and Wildlife (BSFWL) were informed of the initiation of the investigation in December 1970, substantive coordination did not commence until May 1973. At that time representatives of DFG and BSFWL met with the District's study manager and environmental coordinator and toured several of the dam sites then under consideration. Following additional exchanges of information between these agencies,¹⁰³ BSFWL forwarded preliminary information on fish and wildlife concerns to the District in June 1973¹⁰⁴ and subsequently commented on the August 1973 Working Paper.¹⁰⁵ BSFWL's 1973 comments related, among other things, to the need to give consideration to non-structural means to solve flood-related problems¹⁰⁶ and the need to consider "mitigation features" (*i.e.*, measures intended to offset adverse environmental effects of a project).

In December 1973, DFG submitted its preliminary recommendations for mitigation features.¹⁰⁷ These recommendations, which re-

see W. HILL AND L. ORTOLANO, NEPA'S INFLUENCE ON FEDERAL WATER PLANNING: PART 1, EFFECTS OF THE 'REVIEW AND COMMENT PROCESS' ON THE CORPS OF ENGINEERS AND SOIL CONSERVATION SERVICE REPORT NO. EEP 52, (Dep't of Civil Engineering, Stanford Univ.) [hereinafter cited as NEPA'S INFLUENCE ON FEDERAL WATER PLANNING, PART 1].

¹⁰³ Letter from H. E. Pape, Jr., Chief, Engineering Division, San Francisco District, U.S. Army Corps of Engineers, to Mr. Jack C. Fraser, Regional Manager, Department of Fish and Game (same letter sent to Mr. Felix Smith, Field Supervisor, United States Bureau of Sports Fisheries and Wildlife, Division of Harbors and River Basin Studies), May 31, 1973. In this request for specific information, the District urged an early response so that the information provided could be incorporated into the environmental working paper.

¹⁰⁴ Letter from Felix E. Smith, BSFWL, to District Engineer, San Francisco District, U.S. Army Corps of Engineers, June 22, 1973.

¹⁰⁵ Letter from Felix E. Smith, BSFWL, to District Engineer, San Francisco District, U.S. Army Corps of Engineers, September 12, 1973.

¹⁰⁶ *Id.* The BSFWL's position on non-structural measures was set forth as follows:

[F]ull consideration . . . [should be given] non-structural means to solve flood and related problems in the basin because the elimination of periodic inundation would greatly accelerate commercial and residential development of the flood plain. The flood plain is an integral and necessary part of a river channel system during times of high water. It is also a biological productive area providing habitat for many species of wildlife. Therefore, we believe stringent zoning laws and sound environmental management techniques should be applied to preserve the remaining flood plain in its natural productive state.

¹⁰⁷ Letter from J. C. Fraser, Regional Manager, DFG, to Col. James Lammie, District Engineer, San Francisco District, U.S. Army Corps of Engineers, December 19, 1973.

lated exclusively to the San Clemente alternative, concerned land acquisition to offset the loss of wildlife habitat, a fish hatchery to offset the loss of steelhead spawning areas, and a schedule of minimum stream flows (measured at a point near the Highway 1 bridge) to be maintained by reservoir releases. In addition, as a fish enhancement feature, DFG recommended that all water destined for use in areas other than the Carmel Valley be delivered via the natural streambed of the Carmel River to a pumping and distribution point located just above the tidal influence near Carmel.

DFG representatives met with the District in February 1974 to discuss the above noted recommendations; the District took issue with only a few minor points. In an April 1974 letter, the DFG translated its recommended range of flows into a range of annual water releases required to maintain them.¹⁰⁸ The District incorporated nearly the full range of DFG recommendations into its San Clemente alternative.¹⁰⁹

At the December 1974 public meeting, a representative of DFG stated the Department's position that, from the standpoint of fish and wildlife resources, non-structural measures present the best alternative. He stated, however, that the DFG would find the San Clemente alternative "acceptable" if all its recommendations, including river-mouth water withdrawal, were provided.¹¹⁰ In February 1975, BSWFL submitted a draft of formal recommendations to the District that, with some minor exceptions, were consistent with those made by DFG.¹¹¹

¹⁰⁸ Letter from J. C. Fraser, Regional Manager, DFG, to Col. James Lammie, District Engineer, San Francisco District, U.S. Army Corps of Engineers, April 2, 1974. The recommended releases ranged from 14,500 af/yr to 29,400 af/yr.

¹⁰⁹ The District's December 1974 brochure included the cost of the relevant mitigation lands and the fish hatchery in the cost of the San Clemente alternative. Moreover, the brochure implied that the DFG recommended minimum releases would have to be provided in a federal project. It included four options for reservoir operation depending on whether minimum or maximum recommended releases were made and whether water supply was diverted from the reservoir or from the mouth of the river. In this way the District included the full range of DFG recommended releases, and left to the local interests the decision regarding which of the four options for reservoir operation would be used. CORPS DECEMBER 1974 BROCHURE, *supra* note 90.

¹¹⁰ Mr. Frank Goodson, DFG, testimony at Corps of Engineers public meeting, December 17, 1974.

¹¹¹ The BSWFL did not specify a range of downstream flows, but recommended the upper limit of the DFG recommended range. The District did not feel that BSWFL's recommendation would be defensible in subsequent Corps reviews. To further clarify the downstream flow issue, the District will conduct its own studies and then negotiate further with BSWFL. Personal interview with Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, September 19, 1975.

As in the District's internal studies, the emphasis of the fish and wildlife coordination activities was on multipurpose reservoirs. The District was quite responsive to the recommendations made by the fish and wildlife agencies regarding mitigation features for the San Clemente alternative. However, it was far less responsive to fish and wildlife agency recommendations for further study of non-structural alternatives.

III. EXECUTION OF THE 102 PROCESS

Using the materials presented above as background, the issue of how NEPA influenced the District's Carmel River survey investigation is now considered in detail. This section discusses the District's execution of the "102 process," in this case the activities leading to the development of a draft environmental impact statement. The following section considers how these and other activities related to NEPA influenced the District's planning and decision-making.

A. *The Environmental Coordinator*

The responsibility for coordinating environmental studies and drafting the various environmental reports was given to the environmental coordinator. Although the study manager viewed the environmental coordinator in much the same way as he did his other "technical consultants" in the study group,¹¹² the environmental coordinator's role was different in three ways. First, the environmental coordinator played a special role in connection with the formulation of alternatives in that he was responsible for developing the Environmental Quality alternative and the "alternatives section" of the impact statement. Second, he had more direct interaction with members of the study group than any other group member except for the study manager.¹¹³ Third, he had special responsibilities for coordination with agencies and interests outside the Corps. These responsibilities included: fish and wildlife coordination,¹¹⁴

¹¹² Personal interview with Mr. John Breadon, May 22, 1974, *supra* note 64.

¹¹³ Personal interview with Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, December 19, 1974.

¹¹⁴ Because the environmental coordinator was a member of the Fish and Wildlife Section of the Environmental Branch, he also coordinated with the fish and wildlife agencies. At the San Francisco District in general, an environmental coordinator can be a member of any of the three main sections of the Environmental Branch, the assignment being more dependent on workload and available personnel than on special expertise. If the coordinator is a member of the Environmental Impact Section or the Planning Section, the fish and wildlife coordination would be conducted by a member of the Fish and Wildlife Section. Telephone conversation with Mr. Les Tong, April 4, 1975, *supra* note 111.

contact with the California Department of Parks and Recreation concerning archeological resources,¹¹⁵ circulation of the Working Paper and response to comments thereon, and occasional contact with other agencies and environmental interest groups.¹¹⁶

Notwithstanding these differences, the environmental coordinator, like the other members of the study group, concentrated his efforts on the preparation of specific reports called for by the study manager.¹¹⁷ When the environmental coordinator was assigned to the Carmel River investigation in September 1972, he immediately prepared the Working Paper, after which he started work on a draft impact statement. An interim report, the "Summary of Environmental Considerations," included a summary of progress made on the draft impact statement.

1. *The Working Paper*

The Working Paper contained an environmental assessment of the alternative reservoir projects under consideration by the study group between September 1972 and August 1973. Since no formal guidelines for the preparation of this document were available, the environmental coordinator used both environmental working papers prepared for other projects and his own judgment in determining its format.¹¹⁸ The Working Paper relied heavily on a report by a university research project on the identification of environmental impacts of water projects which used the District's Carmel River investigation as a case study.¹¹⁹ The Working Paper was distributed for review to various interested parties and agencies. Comments on the Working Paper were requested to be sent to the environmental coordinator within 30 days.¹²⁰

The Working Paper contained three principal sections, the first

¹¹⁵ This contact was initiated prior to the distribution of the Working Paper and was in response to the Office of Chief Engineer, Preparation and Coordination of Environmental Statements, Eng'r Reg. 1105-2-507 (January 3, 1972).

¹¹⁶ Consultation with United States Forest Service and the California Air Resources Board resulted from comments received on the Working Paper. At least one interest group, the Carmel River Steelhead Association, directed a special inquiry to the environmental coordinator.

¹¹⁷ Personal interview with Mr. Les Tong, December 19, 1974, *supra* note 113.

¹¹⁸ *Id.*

¹¹⁹ U.S. ARMY ENGINEER INSTITUTE FOR WATER RESOURCES, IDENTIFYING THE ENVIRONMENTAL IMPACTS OF WATER PROJECTS, PART B—A CASE STUDY FOR PROJECTS IN CARMEL VALLEY, CALIFORNIA, IWR REPORT No. 73-3, (L. Ortolano ed. March 1973) [hereinafter cited as ORTOLANO, IWR REPORT].

¹²⁰ Personal interview with Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, October 10, 1974.

of which described the water supply and flooding problems and provided a description of the environment of the Carmel River Basin. Although nearly half of this first section was concerned with vegetation, wildlife, and fisheries, it also included information on the socio-economic, cultural, and historic setting of the area.

The second section described the alternatives under consideration by the District. It presented the major features of the various reservoirs (*e.g.*, project dimensions, area inundated, and potential for accommodating outdoor recreation). The "no action" alternative was discussed as not effecting "an immediate change to the existing natural stature of the Carmel River Basin. However, normal growth within the Valley may be restricted due to a lack of water supply."¹²¹

The third and final section of the Working Paper concerned the environmental impacts of the alternatives. It described the probable environmental impacts common to all reservoir alternatives, including direct impacts resulting from construction activities, inundation, and recreation, but it failed to mention most indirect impacts, such as those resulting from growth that could be accommodated by the increased water supply. In fact, the only indirect impact of San Clemente flood control which was mentioned in the Working Paper was the expansion of flood plain development.¹²² This third section also described some impacts specific to each site, including direct impacts on land use, vegetative communities, fish and wildlife, and aesthetics.

The Working Paper made no recommendations as to which alternative was preferable. The discussion centered on the comparison of direct impacts of alternative reservoir projects. The absence of discussion of alternatives other than reservoirs and of indirect impacts prompted the greatest reactions.

The Working Paper was distributed in August 1973, more than two years before the draft impact statement was to be circulated. As shown in Table 1, it was sent to seventy-four parties in five categories. Fourteen written responses were received, 80% of which came from federal, state, and local agencies. About half of the agency comments did little more than acknowledge receipt of the Working Paper, offering perhaps a "looks okay to us" type response. Many respondents commented on the narrow range of alternatives considered and suggested others. For example, the California Divi-

¹²¹ WORKING PAPER, *supra* note 80, at 16.

¹²² *Id.* at 19.

sion of Forestry mentioned that flood plain zoning and importation of water were feasible and should be considered. The Environmental Protection Agency suggested the modification of stream flow restrictions (*e.g.*, sand bars and bridges) to lessen flood flow elevations.

Table 1

ENVIRONMENTAL WORKING PAPER:
NUMBER OF COPIES DISTRIBUTED AND COMMENTS RECEIVED¹²³

Category	Number of Copies Sent	Number of Responses Received
Federal agencies	16	7
State, county, local agencies and gov't units	18	4
Interest groups	25	1
Individuals	12	2
Newspapers	3	0
Total	74	14

Other comments suggested that the information included in the Working Paper was incomplete. The California Air Resources Board recommended that consideration be given to air stagnation problems and increases in air emissions that would accompany expected growth. The National Park Service noted the need for archeological studies of the area and indicated that it would be willing to assist in such studies.

A comment by the United States Forest Service contributed information which influenced the evaluation of alternatives. The Forest Service noted that two of the reservoir alternatives, Pine Creek and Los Padres, would inundate portions of the Ventana Wilderness Area in the Los Padres National Forest, thus requiring special Presidential approval. This information was used by the study manager to reinforce his earlier determination that San Clemente was the most desirable dam site.¹²⁴

The District received only three comments from individual citizens and groups. A comment from a retirement community devel-

¹²³ The discussion of the working paper review is based on an analysis of the letters received in response to the paper. The authors are indebted to Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, for opening the file of responses for review.

¹²⁴ Personal interview with Mr. John Breadon, May 22, 1974, *supra* note 64.

oper in the flood plain told of the need for flood protection. Two local citizens suggested that more alternatives be considered.

Significantly, the review of the Working Paper opened channels of communication between the District and other agencies, in particular, the Air Resources Board, the National Park Service, and the United States Forest Service.¹²⁵ In addition, comments regarding the potential air pollution effects of further growth in the area and the need for archeological studies provided the environmental coordinator with "food for thought" in conducting subsequent studies. In presenting several alternatives, the Working Paper gave reviewing agencies an opportunity to comment *before* a specific project was proposed. The poor public response to the Working Paper, which may have been due to its limited distribution or its technical style, suggests that it was of limited usefulness as a mechanism for involving the public in planning.

2. *Drafting the Environmental Impact Statement*

After completion of the Working Paper and its associated reviews, the environmental coordinator began working on the draft impact statement.¹²⁶ His environmental impact analysis considered the San Clemente alternative as the proposed action and included the various items required in guidelines put forth by the Council on Environmental Quality¹²⁷ and the Office of the Chief of Engineers.¹²⁸ His sources of information included published reports,¹²⁹ continued coordination with other agencies,¹³⁰ a contracted archeological study,¹³¹ and in-house studies from other branches.¹³²

An intermediate product in the process of preparing the impact

¹²⁵ Personal interview with Mr. Les Tong, May 22, 1974, *supra* note 62.

¹²⁶ Personal interview with Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, October 10, 1974.

¹²⁷ 40 C.F.R. § 1500.8(b) (1974).

¹²⁸ Office of Chief Engineer, Preparation and Coordination of Environmental Statements, Eng'r Reg. 1105-2-507 (issued January 3, 1972 and revised April 15, 1974).

¹²⁹ *E.g.*, DWR GROUND WATER STUDY, *supra* note 15; various General Plans; and ORTOLANO, IWR REPORT, *supra* note 119.

¹³⁰ For example, the environmental coordinators obtained wildlife and plant lists from DFG.

¹³¹ R. EDWARDS AND P. HICKMAN, ASSESSMENT OF THE IMPACT ON CULTURAL RESOURCES OF THE PROPOSED SAN CLEMENTE DAM, UPPER CARMEL VALLEY (1975) [hereinafter cited as EDWARDS AND HICKMAN STUDY].

¹³² The environmental coordinator noted the following information which he received from other sections: reservoir routing figures from the Hydrology Section, data on land utilization and population projections from the Economics Section, and data on borrow areas and seismic characteristics from the Foundations and Materials Branch. Personal interview with Mr. Les Tong, December 19, 1974, *supra* note 113.

statement was a Summary of Environmental Considerations¹³³ required for the Checkpoint I conference by regulations of the Office of Chief of Engineers.¹³⁴ Most of the six page Summary took the form of an "extract" from the draft impact statement. The extract briefly described the proposed San Clemente project and its environmental impacts. It also included a listing of the following alternatives to the San Clemente project: three alternative dam sites, levees, channel modifications, flood plain management, and flood insurance. The Summary did not suggest that a study of the environmental impacts of alternatives other than various reservoir projects had been conducted. The Summary also contained the Department of Fish and Game's recommended mitigation features for downstream flows and wildlife habitat.

As a result of the criticisms made by the South Pacific Division's survey monitor at the Checkpoint I conference, the study manager initiated a study of alternative levee systems and gave the environmental coordinator the responsibility for formulating an Environmental Quality alternative. In response to the study of alternative levee systems, the environmental coordinator intended to expand the discussion of levees in the alternatives section of the impact statement.¹³⁵ Because the levee alternatives did not appear to be economically justified, however, he admittedly "skipped" on the levee studies.¹³⁶ Although he was negotiating a contract for a special study of the archeological impacts of the San Clemente alternative,¹³⁷ the environmental coordinator focused much of his effort on the development of an Environmental Quality alternative.¹³⁸

The task of developing the Environmental Quality alternative, which was not completed prior to the December 1974 public meeting, left the environmental coordinator without sufficient time to

¹³³ The Summary of Environmental Considerations is included in CHECKPOINT I PROGRESS REPORT, *supra* note 37.

¹³⁴ Office of Chief Engineer, Preparation and Coordination of Environmental Statements, Eng'r Reg. No. 1105-2-507 (issued January 3, 1972 and revised April 15, 1974).

¹³⁵ Personal interview with Mr. Les Tong, October 10, 1974, *supra* note 126.

¹³⁶ This method gives an indication of how seriously levees were considered. Telephone conversation with Mr. Les Tong, San Francisco District, United States Army Corps of Engineers, April 4, 1975.

¹³⁷ EDWARDS AND HICKMAN STUDY, *supra* note 131. Initially an archeological survey of the entire Basin was proposed but the cost (\$45,000) and time required for such a study resulted in a scaled down (\$9,000) version specific to the inundated area of the most viable alternative, the San Clemente dam. Although the report indicated the \$9000 study "by itself would not meet the National Environmental Policy Act requirements," R. EDWARDS, SUMMARY OF REPORT IN PROGRESS 1, 2, (Dec. 16, 1974), for the purposes of the survey investigation, the District felt it was sufficient. Telephone conversation with Mr. Les Tong, April 4, 1975, *supra* note 136.

¹³⁸ Telephone conversation with Mr. Les Tong, April 4, 1975, *supra* note 136.

prepare a "Summary of Environmental Considerations" for the meeting.¹³⁹ Office of Chief of Engineers regulations require that a Summary "be attached or enclosed with the [second] public meeting announcement in order to generate meaningful and thorough discussion during the meeting," and that during the meeting, "all anticipated environmental impacts and effects of each potentially feasible solution under active consideration . . . be identified and discussed."¹⁴⁰ No environmental information was included with the December 1974 public meeting announcement.¹⁴¹ The only environmental information included in the public information brochure¹⁴² and presented at the meeting¹⁴³ was a discussion of the fish mitigation features for the San Clemente alternative and a terse display of direct environmental impacts in a matrix comparing the alternative reservoir projects.

The environmental coordinator continues to work on the draft impact statement which, at the time of this writing (February 1976), is scheduled for release to the South Pacific Division in August 1976.¹⁴⁴

IV. INFLUENCE OF NEPA ON THE SURVEY INVESTIGATION

The discussion below first considers how NEPA influenced the formulation and evaluation of alternatives. A three-part framework is used to analyze the manner in which alternatives were investigated in the Carmel River survey investigation. First, the discussion considers how the *range* of alternatives was delineated which involved sketching out the types of actions that were to be investigated in greater detail. Second, the discussion considers how the alternatives under study were *ranked* (or evaluated) which involved deciding which alternative actions were attractive and subject to further study and which were less attractive and subject to little or no further consideration. Third, the discussion considers how a particular alternative, the proposed dam at the San Clemente site, was "designed" which involved the movement from a very general concept (*i.e.*, a dam at the San Clemente site) to a more detailed action (*i.e.*, a dam of specific size and with specific features). Although all

¹³⁹ *Id.*

¹⁴⁰ Office of Chief Engineer, Preparation and Coordination of Environmental Statements, Eng'r Reg. 1105-2-507 at 20 (April 15, 1974).

¹⁴¹ Colonel H. A. Flertzheim, Jr., District Engineer, San Francisco District, U.S. Army Corps of Engineers, Announcement of Public Meeting for Flood Control and Related Purposes, Carmel River and Tributaries, November 20, 1974.

¹⁴² CORPS DECEMBER 1974 BROCHURE, *supra* note 90.

¹⁴³ Transcript of Public Meeting on Carmel River Investigation, December 17, 1974.

¹⁴⁴ Personal interview with Mr. Les Tong, April 27, 1976, *supra* note 94.

activities represented by this framework occur throughout the planning process (*e.g.*, the range of alternatives can be expanded late in the process, features can be specified before ranking is complete), a sequential emphasis is followed, first on the range, then on ranking, finally on designing.

In addition to considering the ways in which NEPA influenced alternatives for the Carmel River, the discussion below also elaborates on a more general issue. It uses results from the Carmel River survey investigation as the basis for commenting on the utility of the 102 process as a means for meeting NEPA's intent, the integration of environmental considerations into federal agency planning and decision-making. The discussion emphasizes that the mere act of carrying out the 102 process according to CEQ and OCE guidelines does not guarantee that environmental factors will receive serious consideration in planning and decision-making. Indeed, the 102 process *per se* can be quite useless in the face of a study manager who is not interested in using the information produced by the 102 process in making decisions.

A. *Delineating the Range of Alternatives*¹⁴⁵

At least until the Checkpoint I conference in April 1974, the study manager determined the range of alternatives to be studied, which included only the dam and reservoir concept. The range of alternatives was subsequently expanded to include alternative levee systems, non-structural flood damage mitigation actions and an Environmental Quality alternative so that an adequate presentation could be made to the public. This expansion occurred, not as a result of NEPA's 102 process, but rather in response to criticisms that the Division's survey monitor raised at the Checkpoint I conference. NEPA's broad policy objectives, however, were among the factors that led the survey monitor to request that the range of alternatives be expanded.

In preparing the Working Paper the environmental coordinator conducted studies on the narrow range of alternatives determined by the study manager. The Working Paper considered only four dam sites and "no action"; only these alternatives were under consideration by the study manager at the time the Working Paper was

¹⁴⁵ Environmental information, unrelated to NEPA *per se*, had an influence on the delineation of the range of alternatives. In particular, the District chose not to study channel modifications because of the lack of public support for this type of action. Transcript of Public Meeting, *supra* note 66.

prepared. When the investigation narrowed in scope to one dam at the San Clemente site, the environmental coordinator concentrated on that alternative as the "proposed action" in his studies related to the environmental impact statement. Thus, the study manager determined the range of alternatives, and the environmental coordinator responded with environmental analyses on those alternatives.¹⁴⁶

In addition to the environmental coordinator's responsibility to conduct studies on the range of alternatives determined by the study manager, he was also responsible for the impact statement, including the section that deals with alternatives. The Council on Environmental Quality guidelines indicate that this section of the impact statement should reflect a "rigorous exploration and objective evaluation of the environmental impacts of all reasonable alternative actions."¹⁴⁷ Although the preparation of this section offered the environmental coordinator an opportunity to influence the range of alternatives considered by the study group, this opportunity was not seized; the environmental coordinator carried out his studies related to the impact statement without expanding the range of alternatives developed by the study manager. Indeed, the environmental coordinator's analysis for the alternatives section of the impact statement was not even initiated until after a "proposed action" was tentatively selected. In addition, the information he generated did not "feed back" into the planning process, but was generated for the sake of completing the alternatives section of the impact statement. No mechanism existed by which this information could be integrated into the study manager's determination of the alternatives that were to be considered seriously.

One reason for the lack of such an integrative mechanism relates to the manner in which the study group carried out its activities. Members of the study group conducted studies in response to the study manager's directions, apart from one another and without a substantive opportunity for expanding on those directed studies. The lines of communication on the range of alternatives to be studied were not open, and informal comment was ineffective. For example, on one occasion the environmental coordinator told the study manager that comments he had received from the Bureau of Sport Fisheries and Wildlife and others indicated that further studies of flood plain management might be warranted. In the words of the

¹⁴⁶ An important exception involved the Environmental Quality alternative. The study manager assigned the task of formulating this alternative to the environmental coordinator.

¹⁴⁷ 40 C.F.R. § 1500.8 (1974).

environmental coordinator, the study manager "brushed off" the suggestions.¹⁴⁸

A more general point concerning the alternatives section of the impact statement is worth noting. As is demonstrated by the Carmel River survey, the use of the term "alternatives" in the context of the impact statement often differs from its more general use in a survey investigation. In the survey investigation, the term refers to alternatives formulated to deal with the planning objective, which objectives for the Carmel River investigation concerned flood damage reduction and the provision of water supply.¹⁴⁹ In the context of the alternatives section of the impact statement, however, the term refers to *alternatives to the proposed action*, implying an analysis *after* the choice of a proposed action is tentatively made. At least in the case of Carmel the impact statement section on alternatives was not intended to contribute to the consideration of a range of alternatives by planners, but to alert decision-makers and those reviewing planning documents to alternatives to a tentatively selected project.

The integration of environmental factors into the delineation of the range of alternatives requires that the alternatives formulated to deal with the planning objectives and the alternatives formulated for inclusion in an impact statement be the same. This result can occur only if the Planning Branch does not prematurely narrow the range of alternatives and if the Environmental Branch is not excluded from the process of delineating alternatives until the schedule calls for the preparation of an impact statement.

As mentioned previously, NEPA had an influence on the range of alternatives considered insofar as it influenced the survey monitor's actions at the Checkpoint I conference. The survey monitor asserted that the goals of NEPA were among the several factors leading him to request that the District expand the range of alternatives. He also observed, however, that his request was motivated much more directly by the Water Resources Council's "Principles and Standards."¹⁵⁰ The Principles and Standards are much more explicit than NEPA in calling for the consideration of environmental factors in formulating alternative actions. The Environmental Quality al-

¹⁴⁸ Personal interview with Mr. Les Tong, May 22, 1974, *supra* note 62.

¹⁴⁹ As a result of the Principles and Standards, *supra* note 55, the federal water resources agencies are now required to consider the enhancement of environmental quality as a planning objective. This procedure will undoubtedly increase the extent to which environmental factors are considered in formulating alternatives.

¹⁵⁰ Personal communication with Mr. Maurice Jackson, September 30, 1974, *supra* note 86; see also, Jackson memo, *supra* note 88, and Principles and Standards, *supra* note 55.

ternative, for example, was formulated in direct response to the Principles and Standards.¹⁵¹ If the Carmel River survey investigation is representative in this regard, the Principles and Standards may be much more effective than NEPA in forcing the serious consideration of environmental factors in the formulation of a range of alternative actions.¹⁵²

B. *Ranking Alternatives*

The 102 process had some influence on the ranking (or evaluation) of alternatives, but because of a timing problem this influence was less significant than it might have been. The timing problem can be described in terms of the following two facts: (1) in June 1973, the Planning Chief announced publicly that the District was "prepared to recommend that a flood control water supply dam be constructed as a joint federal-local venture" at the San Clemente site,¹⁵³ and (2) the Working Paper was not distributed for review and comment until August 1973. A timing problem existed because the District appeared to have its mind made up about an alternative even before the Working Paper was released.

The results from the preparation and review of the Working Paper contributed information that was used by the study manager to justify and reinforce his earlier decisions. As early as April 1973, the study manager seemed to be leaning toward a multipurpose reservoir at the San Clemente site.¹⁵⁴ The studies carried out for the Working Paper, together with the comments made on the Working Paper, produced useful information about the alternative dam sites (e.g., reservoirs at both the Los Padres and the Pine Creek sites would inundate portions of the Ventana Wilderness Area, and a dam at the Klondike site would block steelhead migration up Tularcitos Creek). The study manager used this information to conclude that in addition to being the best site in terms of technical and economic considerations, the San Clemente site was also the most favorable site in terms of environmental considerations.¹⁵⁵

More generally, the concept of an environmental working paper as implemented by the San Francisco District has the potential for allowing environmental concerns to influence the ranking of alterna-

¹⁵¹ Jackson memo, *supra* note 88.

¹⁵² For more on the Corps implementation of the Principles and Standards, see Office of Chief Engineer Planning Process, Multiobjective Planning Framework, Eng'r Reg. 1105-2-XXX (May 12, 1975).

¹⁵³ *Engineers Say Carmel River Dam Feasible*, Carmel Pine Cone, June 21, 1973. This announcement was made at the PUC water hearings.

¹⁵⁴ For evidence of this, see PRELIMINARY REPORT, *supra* note 71.

¹⁵⁵ Personal interview with Mr. John Breadon, May 22, 1974, *supra* note 64.

tives. This potential exists because an environmental working paper can be prepared well before a proposed action is decided upon and while several alternatives are still being considered. This paper is in sharp contrast to the environmental impact statement, which is prepared late in the planning process after a proposed action has been tentatively selected. As the Carmel River survey demonstrates, however, the utility of a pre-impact statement document like an environmental working paper can only be useful in ranking alternatives if it is prepared and released before a study manager has decided on a proposed action, and if the study manager is interested in utilizing environmental impact information in planning and decision-making.

The environmental working paper can also provide an opportunity for involving the public in the process of ranking alternatives. However, the mere existence of an environmental working paper does not guarantee that the public will become involved in ranking the plans. To elicit a meaningful public response, an environmental working paper must at least be easily readable and widely distributed. The poor public response to the Working Paper in the Carmel River survey may have occurred because the Working Paper was inadequate in both respects.

C. Designing or Modifying an Alternative Action

In general, as the study of alternatives progresses, concepts (*e.g.*, dam and reservoir) take on a more detailed form and are given a definitive examination. In some cases several alternatives may progress to this more detailed stage of planning. In the case of the Carmel River investigation, however, only the San Clemente alternative was given this highly detailed level of consideration. Therefore, only the San Clemente alternative clearly illustrates NEPA's influence on this more detailed aspect of the study of alternatives.

As studies progressed on the concept of a dam at the San Clemente site, two distinct types of planning decisions were made by the study manager. The first type involved the fundamental characteristics of the proposed alternative, *e.g.*, the amount of water yield and the level of flood flow reduction. The second type involved mitigation features to offset adverse impacts.

As regards the first type of planning decision, neither the 102 process nor environmental factors in general influenced the determination of size that was at the very heart of the proposed San

Clemente project.¹⁵⁶ The determinations of the "optimal" magnitudes of water yield and flood control were based solely on economic analyses, even though significant environmental impacts were involved. Indirect impacts (*e.g.*, impacts on land use and air quality) associated with the quantities of water supply provided were neither assessed nor considered in the determination. Similarly, the "optimal" amount of flood control was determined by economic formulas alone. Environmental impacts of increased development in the flood plain due to flood flow reduction were not considered.

As regards the second type of planning decision, evidence suggests that the fish and wildlife mitigation features of the San Clemente alternative were influenced by the 102 process and the general objectives of NEPA.¹⁵⁷ All of the decisions to include mitigation features were decisions to accept the recommendations of the fish and wildlife agencies. These recommendations were based on assessments of impacts of the San Clemente alternative on fish and wildlife resources. Although these assessments were made by the DFG and BSFWL in response to the Fish and Wildlife Coordination Act, they were used by the District in the context of the 102 process. Moreover, as is discussed below in the context of inter-agency review and coordination, the District's positive response to the recommendations of the fish and wildlife agencies was at least indirectly influenced by NEPA.

As regards the design of alternatives, the Carmel River survey demonstrates both a weakness and a strength of the 102 process. The weakness relates to the absence of environmental considerations in making very basic design decisions unrelated to mitigations, *e.g.*, decisions concerning the size of the San Clemente dam and the amount of flood flow reduction to be provided. These decisions were made on the basis of technical and economic considerations. In order for environmental considerations to influence such basic design decisions, careful attention must be paid to indirect impacts, *e.g.*, the way in which a given level of flood protection affects land use. Moreover, if environmental considerations are to influence basic design decisions, such considerations must necessarily play a

¹⁵⁶ At least one aspect of the San Clemente alternative that is unrelated to mitigation was influenced by environmental factors. The decision to design only minimal recreational features into the San Clemente alternative was in response to local concerns over the adverse environmental effects of intensive reservoir-based recreation. Transcript of Public Meeting, *supra* note 66. This outcome was at most superficially influenced by NEPA.

¹⁵⁷ For another illustration of the way in which the 102 process has influenced fish and wildlife mitigation, see Randolph and Ortolano, *Effect of NEPA on the Corps of Engineers' New Melones Project*, 1 COLUM. J. ENV. L. 233 (1975). More generally, see NEPA'S INFLUENCE ON FEDERAL WATER PLANNING, PART 1, *supra* note 102, at 8.

part in establishing planning objectives. In the Carmel River survey (at least until the Checkpoint I conference), the planning objectives related principally to the levels of flood protection and water supply to be provided. The environmental coordinator, who might conceivably have provided the impetus to introduce environmental factors in reaching basic design decisions, served primarily to provide environmental impact information about projects which the study manager conceived. This situation may be changing somewhat, as a result of the Water Resources Council's Principles and Standards, which provide the environmental coordinator with some leverage in the design process because of the need for an Environmental Quality alternative and the establishment of environmental quality as an objective of federal water resources planning.

The strength of the 102 process in the design of alternatives relates to its utility in leading to mitigation features for the proposed action. This relation is clearly illustrated by the way in which information on environmental impacts was used to design fish and wildlife mitigation features for the San Clemente alternative. Data gathered from a mailed questionnaire of all Corps Districts suggests that the Carmel River survey is not atypical in this regard.¹⁵⁸

D. Interagency Review and Coordination

In addition to its influence on alternatives, NEPA influenced the coordination between the District and other agencies. The Working Paper acted to initiate contact and communication with several agencies at an early stage. Coordination was especially improved in the areas of fish and wildlife resources and archeological resources.

Of the District's various efforts at coordination with other agencies for the Carmel River investigation, the most thorough effort was that involving the fish and wildlife agencies. This coordination commenced while several dam sites were being actively considered, and it provided information and recommendations which eventually took the form of major mitigation features in the San Clemente alternative.

At first glance, it appeared that because the Working Paper was prepared, coordination was initiated with DFG and BSFWL while a range of dam sites were being actively considered. The first letter from the District requested early receipt of the information so that it might be included in the Working Paper.¹⁵⁹ Interviews with those

¹⁵⁸ INFLUENCE OF NEPA IN FEDERAL WATER PLANNING, PART 1, *supra* note 102 at 7.

¹⁵⁹ H. E. Pape, Jr., letter to Mr. Jack C. Fraser, DFG and Mr. Felix Smith, BSFWL, May 31, 1974, *supra* note 103.

directly involved in the coordination indicate, however, that the early initiation of the coordination would probably have occurred without the Working Paper.¹⁶⁰ Fish and wildlife agencies' representatives indicate that the timing of the coordination was not uncommon, even when compared to coordination prior to NEPA.¹⁶¹

What was uncommon, however, was the District's positive response to the agencies' recommendations for mitigation. The Corps incorporated nearly every recommendation into the San Clemente alternative presented at the December 1974 public meeting, including mitigation lands for lost wildlife habitat, a fish hatchery, downstream releases for the lower channel, and even mouth-of-the-river diversion of water supply (a feature which DFG termed "enhancement").

Corps, BSFWL, and DFG representatives maintain that in general the Corps' response to fish and wildlife coordination has been much more positive since NEPA's enactment.¹⁶² The environmental coordinator for the Carmel River study indicated that the quality of the response of the Corps and the fish and wildlife agencies has improved.¹⁶³ The improved quality of information provided by the fish and wildlife agencies could be a result of the Corps' positive response (*i.e.*, the agencies are likely to work harder if the information and recommendations they provide are taken more seriously).¹⁶⁴ One DFG representative indicated that the District's response in the case of the Carmel River was "better" than that on any Corps project he was familiar with.¹⁶⁵ The DFG representative felt that if the project were planned prior to NEPA, it would probably have included some mitigation features, such as land acquisition, downstream flows, and perhaps a hatchery. He felt, however, that the Corps' response to the "enhancement" feature involving mouth-of-

¹⁶⁰ Telephone conversation with Mr. Les Tong, Environmental Branch, San Francisco District, United States Army Corps of Engineers, April 11, 1975.

¹⁶¹ Telephone conversation with Mr. Frank Goodson, California DFG, Yountville, Calif., April 10, 1975; telephone conversation with Mr. Fred Nakaji, BSFWL, Sacramento, April 10, 1975.

¹⁶² Personal interview with Mr. Jim Hubner, Urban Planning Section, San Francisco District, United States Army Corps of Engineers, September 30, 1974; personal interview with Mr. Les Tong, October 10, 1974, *supra* note 126; telephone conversation with Mr. Frank Goodson, DFG, April 10, 1975, *supra* note 161; telephone conversation with Mr. Fred Nakaji, BSFWL, April 10, 1975, *supra* note 161.

¹⁶³ Personal interview with Mr. Les Tong, October 10, 1974, *supra* note 126.

¹⁶⁴ For evidence of a general improvement in fish and wildlife coordination as a result of NEPA, see INFLUENCE OF NEPA ON FEDERAL WATER PLANNING, PART 1, *supra* note 102 at 8.

¹⁶⁵ Telephone conversation with Mr. Frank Goodson, DFG, April 10, 1975, *supra* note 161.

the-river water supply diversion would have been less positive prior to NEPA.

A second area of improved agency coordination involved archeological resources. Although interagency coordination regarding archeological resources has been required by statute at least since the Historic Preservation Act of 1966,¹⁶⁶ in the Carmel River investigation it has been more effective because of its incorporation into the 102 process. The Corps' regulations for preparation of environmental impact statements include special coordination with the State archeologist.¹⁶⁷ This requirement prompted the environmental coordinator to contact the California Department of Parks and Recreation in early 1973, as a result of which the District engaged a university-based consultant to conduct an archeological study of the San Clemente site.¹⁶⁸

For most projects planned prior to NEPA, the coordination and assessment of archeological resources occurred during the period of advanced engineering and design, so that the artifacts could be salvaged before being inundated. For the Carmel River investigation, the assessment was initiated during the survey investigation. In this way the assessment could not only identify artifacts that could be salvaged, but also influence pre-authorization planning and decision-making.¹⁶⁹ Because archeological resources assessment procedures were used in the preparation of environmental impact statements, archeological coordination took place at an earlier stage of planning.

Thus, the Carmel River survey demonstrated that the 102 process can be more effective, regarding both the quality and timing of interagency coordination, than the environmental impact statement review and comment process. That process, as directed by CEQ guidelines, is more limited in providing substantive input into early agency planning, since the impact statement review occurs after many significant planning decisions have been made. Because of this, the proposed project is less subject to change, and thus the Corps' response to the comments received may be limited to minor project modifications. If planners receive environmental information earlier, whether from in-house studies or outside coordination, it is more likely that information will be reflected in the proposed action.

¹⁶⁶ Historic Preservation Act of 1966, 16 U.S.C. § 470 (1970).

¹⁶⁷ Office of Chief Engineer, Preparation and Coordination of Environmental Statements, Eng'r Reg. 1105-2-507, at 12 (April 15, 1974).

¹⁶⁸ Personal interview with Mr. Les Tong, October 10, 1974, *supra* note 126; *see also* resulting report, EDWARDS AND HICKMAN STUDY, *supra* note 131.

¹⁶⁹ Telephone conversation with Mr. Les Tong, April 11, 1975, *supra* note 160.

CONCLUSION

Although NEPA had some influence on the Carmel River survey, this influence related largely to improvements in interagency coordination and the incorporation of mitigation features. The key decisions regarding which alternatives to examine and which alternative to select did not rely on information generated by the 102 process.

The effectiveness of the 102 process in forcing or encouraging agency planners to consider environmental factors in their planning and decision-making clearly depends on the *quality* of environmental information produced in the process, the *timing* of that information in relation to planning decisions, and the extent to which the information is *integrated* into those decisions. The 102 process as executed in the Carmel River survey had deficiencies under all three categories. As to quality, the information regarding indirect impacts was deficient. As to timing, much of the information on impacts and alternatives provided by the Environmental Branch came after decisions concerning reservoir site and size were made. The use of a working paper written on the environmental impacts of a range of alternatives could reduce the timing problems of an environmental impact statement based on a proposed action. In the Carmel River survey, however, even the Working Paper came after an alternative was tentatively selected. Finally, as to integration, because the Environmental Branch did not influence the decisions of the Planning Branch, the flow of information and its integration into the planning decisions were inhibited.

The lack of integration of 102 process information into planning decisions was a significant weakness in the Carmel River survey investigation. This weakness might be reduced if more attention were given by CEQ and the Corps to the implementation of §§ 102(2)(A) and 102(2)(B) of NEPA. In particular, a more "interdisciplinary" approach to planning would help solve the problem of integrating 102 process activities into other planning activities. The difficulty which the 102 process has in influencing early planning decisions might be mitigated by a greater emphasis on "methods and procedures designed to insure appropriate consideration of environmental values *along with* economic and technical considerations." While the ultimate responsibility for the implementation of NEPA lies with the planning agencies, their response to the Act has closely followed CEQ guidelines. This study has shown that even though the Corps went beyond the CEQ guidelines in some respects, its 102 process still failed to result in the type of planning intended by the Act. Thus, CEQ's relative neglect of §§

102(2)(A) and 102(2)(B) of NEPA may be interfering with the attainment of NEPA's intent. CEQ certainly has the authority to offer guidance on the implementation of these sections, yet the CEQ guidelines have left them unaddressed, probably because the implementation of these sections depends on agency-specific procedures. In any case, CEQ should more forcefully direct the agencies to address these sections of NEPA in their individual guidelines.