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Register

Part II

**Water Resources
Council**

**Principles and Standards for Water and
Related Land Resources Planning—Level
C; Final Rule**

**Reprint with Editorial Corrections
(Includes corrections published at
45 FR p. 73033 on November 4, 1980.)**

Register

WATER RESOURCES COUNCIL**18 CFR Part 711****Principles and Standards for Water and Related Land Resources Planning—Level C****AGENCY:** U.S. Water Resources Council.**ACTION:** Final rule.

SUMMARY: This final rule establishes the principles and standards for Level C water and related land resources planning. The purpose of the rule is to provide Federal agencies with uniform requirements for Level C implementation studies. Planning in accordance with this rule is intended to ensure consistency among the agencies and consistency with the National Environmental Policy Act of 1969 (NEPA) and the CEQ NEPA regulations. **EFFECTIVE DATE:** October 29, 1980.

FOR FURTHER INFORMATION CONTACT: Frank H. Thomas, U.S. Water Resources Council, 2120 L Street, NW., Washington, DC 20037 (202/254-6453).

SUPPLEMENTARY INFORMATION:**1. Purpose**

The Water Resources Council (WRC) is publishing as a final rule the *Principles and Standards for Water and Related Land Resources Planning—Level C*. The purpose of the rule is to provide Federal agencies with uniform requirements for Level C implementation studies. Planning in accordance with this rule is intended to ensure consistency among the agencies and consistency with the National Environmental Policy Act of 1969 (NEPA) and the CEQ NEPA regulations (40 CFR Parts 1500-1508).

The principles and standards represent one of six parts of the set of Level C planning rules prepared or to be prepared by WRC at the direction of the President. Portions of the Procedures for Evaluation of National Economic Development (NED) Benefits and Costs in Water Resources Planning (Level C) (18 CFR Part 713) were published as a final rule in the December 14, 1979 *Federal Register*. The Environmental Quality Evaluation Procedures (EQEP) (18 CFR Part 714) are being published concurrently with these principles and standards. The procedures for evaluation of Regional Economic Development (RED) effects (18 CFR Part 715), procedures for evaluation of Other Social Effects (OSE) (18 CFR Part 716), and planning procedures (18 CFR Part 712) are scheduled for preparation.

This final rule reflects changes made as a result of public comments received on the proposed rule published in the

April 14, 1980 *Federal Register* (45 FR 25308-25319), and consultations among member agencies of the Water Resources Council.

2. Background*(a) Initial Development of Principles, Standards, and Procedures*

The Water Resources Planning Act of 1965 was enacted by the Congress to provide for the optimum development of the Nation's natural resources through the coordinated planning of water and related land resources. Title I of the Act established the Water Resources Council (WRC) and outlined its principal duties. One of these duties was to establish, with the approval of the President, principles, standards, and procedures for Federal participants in the preparation of comprehensive regional or river basin plans and for the formulation and evaluation of Federal water and related land resources projects (Section 103). Title IV of the Act authorized WRC to make necessary and appropriate rules and regulations for carrying out the Act (Section 402).

Work to develop Principles and Standards was begun by WRC in 1968, culminating in the President's approval of the "Principles and Standards for Planning Water and Related Land Resources" (September 10, 1973; 38 FR 24778-24862), which became effective on October 25, 1973. The Standards were amended August 14, 1974 (39 FR 29242). The Principles provided the broad policy framework for water resources planning activities. The Standards provided for uniformity and consistency in formulating alternative plans; and in measuring, comparing, and judging beneficial and adverse effects of alternative plans. Responsibility for establishing Procedures was given to the administrators of Federal and Federally assisted programs covered by the Principles and Standards. Subsequently, Procedures were developed by covered Federal agencies within the framework of the Principles and the uniformity provided by the Standards.

(b) Water Policy Initiatives of 1978

The current effort to revise the Principles and Standards and to develop consistent Procedures is the result of the President's Water Policy Reform Message of June 6, 1978. In that Message to the Congress, the President stated that reforms in agency planning were essential to achieve economic efficiency and environmental quality in water resources management. The Message also called for the reduction of duplication and inconsistency in policies, and less "red tape" to

implement Federal program requirements and plans.

On July 12, 1978, the President issued a memorandum titled "Improvements in the Planning and Evaluation of Federal Water Resources Programs and Projects." In addition to noting problems related to economic evaluations, the memorandum stated that too little attention has been paid to environmental values in past planning and review of water resources projects. It also required consideration of nonstructural alternatives and emphasis on water conservation. The memorandum directed WRC to carry out a thorough evaluation of current agency practices for making benefit and cost calculations and to publish a planning manual that will ensure that benefits and costs are estimated using the best current techniques, and are calculated accurately, consistently, and in compliance with the Principles and Standards and other applicable requirements. This directive provided the impetus for WRC's development of a single set of Procedures to ensure accurate, consistent analyses among covered agencies. Additional direction of a similar nature was given by the President in Executive Order 12113: Independent Water Project Review, published January 5, 1979.

WRC undertook work to carry out the President's directive in a three-phased program. In Phase I, which was initiated in August 1978, the Procedures for Evaluation of National Economic Development (NED) Benefits and Costs in Water Resources Planning (Level C) were developed and published as a final rule (18 CFR Part 713) in the December 14, 1979 *Federal Register*. Also in Phase I, the Principles and Standards of 1973 were revised to reflect the full integration of water conservation into project and program planning and review, and to require the preparation and inclusion of a primarily nonstructural plan as one alternative whenever structural project or program alternatives are considered. These revisions were published as a notice in the December 14, 1979 *Federal Register* (44 FR 72978-72990).

Phase II, which was initiated in August 1979, was undertaken to revise the Principles and Standards for clarity and conciseness and to integrate the requirements of Urban and Community Impact Analysis (Executive Order 12074), NEPA, and the CEQ NEPA regulations (40 CFR Parts 1500-1508) into the Principles and Standards.

Development of two additional subparts to the NED evaluation procedures (18 CFR Part 713, Subparts J and L), Environmental Quality

Evaluation Procedures (18 CFR Part 714), and two subparts to the Other Social Effects (OSE) evaluation procedures (18 CFR Part 716, Subparts A and E), was also undertaken during Phase II. These procedures are being published as final rules (18 CFR Parts 713, 714, 716) concurrently with the publication of these Principles and Standards for Water and Related Land Resources Planning—Level C (18 CFR Part 711).

Phase III is scheduled to be initiated in late 1980, and will focus on development of the following for publication as final rules:

(1) Principles, Standards, and Procedures for Water and Related Land Resources Planning—Level B (18 CFR Part 710) scheduled to be published in 1982.

(2) Procedures for Level C Water Resources Planning (18 CFR Part 712) scheduled to be published in late 1983.

(3) Regional Economic Development Evaluation Procedures for Level C Water Resources Planning (18 CFR Part 715) scheduled to be published in late 1983.

(4) Other Social Effects Evaluation Procedures for Level C Water Resources Planning (18 CFR Part 716) scheduled to be published in full in late 1983.

(c) Development of Principles and Standards as Rules

The Secretary of the Interior established a task force to accomplish the aforementioned Phase II work, including revising the Principles and Standards (P&S) and developing the Environmental Quality Evaluation Procedures (EQEP). The task force, staffed by personnel provided by the Water Resources Council, the Departments of Agriculture, Army, and Interior, the California Department of Water Resources, and the University of Connecticut, was formed in August 1979.

Scoping workshops were held in September 1979 to provide the public an opportunity to assist the task force in identifying specific tasks that should be undertaken during Phase II. Public workshops were conducted in Washington, DC (September 12) and Chicago, Illinois (September 19). A workshop for representatives of Federal agencies was also conducted in Washington, DC (September 27). A total of forty-four people attended these three workshops.

Workshops were held in January 1980 to obtain comments on preliminary drafts of the EQEP and revised P&S. Public workshops were conducted in San Antonio, Texas (January 23) and

Washington, DC (January 29). A workshop for representatives of Federal agencies was also conducted in Washington, DC (January 25). A total of fifty-eight people attended these three workshops.

In addition to workshops, continuous and direct public input was obtained by review contracts with the National Wildlife Federation, the National Governors' Association, and the Water Resources Congress. These organizations served as points of contact for obtaining general public input from environmental, State, and developmental interests, respectively. Supplemental technical input was obtained by review contracts with various experts from universities and consultant organizations.

WRC published the P&S (as well as the EQEP and the NED and OSE subparts) as proposed rules in the April 14, 1980 Federal Register (45 FR 25302) and announced that the period for public review and comment would extend for 60 days to June 13, 1980. Public meetings were held in Kansas City, Missouri (May 20, 1980), San Francisco, California (May 23, 1980), and Washington, DC (May 29, 1980) to provide the public with additional opportunities to comment on the proposed rules. A total of approximately 60 people attended the three meetings, with 17 attendees presenting oral statements.

At the close of the comment period, 122 responses, including letters, memoranda, and transcripts had been received on the April 14, 1980 proposed rules. One hundred ten of the responses included comments on the proposed P&S. Commentors included the Water Resources Congress, which coordinated testimony and responses from 13 public and private water resources organizations; the National Governors' Association, which cooperated with the Association of State and Interstate Water Pollution Control Administrators and the Western States Water Council to provide the insights and opinions of professionals from six State water resources management agencies and the two interstate water resources organizations; and the National Wildlife Federation, which presented comments from four environmental groups.

Comments on the proposed P&S were also received from State agencies; river basin commissions; numerous private groups, including environmental and developmental interests, universities, individuals, and Indian tribes. Several Federal agencies, including the Departments of Agriculture, Army,

Commerce, Housing and Urban Development, Interior, and Transportation; the Environmental Protection Agency, the Public Health Service; and the Tennessee Valley Authority, also commented on the proposed rule.

The proposed P&S was reappraised by the Council in light of comments received during the 60-day review period. Every comment dealing with the rule was reviewed carefully to assess its germaneness to the rules. Suggested changes were discussed and reviewed to determine their validity and usefulness. A discussion of the comments received and WRC responses is presented in Section 4 of this supplementary information.

3. Required Analyses

These proposed rules have been determined to be significant under Executive Order 12044, and a final regulatory analysis has been prepared.

Based on an environmental assessment prepared in accordance with 40 CFR 1500-1508, the Acting Director, Water Resources Council, has determined that these proposed rules will not significantly affect the quality of the human environment, and has signed a finding of no significant impact.

Copies of the final regulatory analysis, environmental assessment, and the finding of no significant impact may be obtained from the Acting Director, U.S. Water Resources Council, 2120 L Street, N.W., Washington, DC 20037.

4. Comments and Responses

This section summarizes the major issues raised during the 60 day public review and comment period, April 14-June 13, 1980. Following the summary of the comment is a response describing the resulting change made in the final rule or the rationale for not making the change. The major changes made are summarized in Table 1.

Comments regarding Part 710 have been incorporated with comments on Part 711. Comments on particular sections in Part 710 have been referenced to the corresponding sections of Part 711.

Comments were received on a wide variety of issues. Some commentors were supportive of the proposed rules and stated that they should improve Federal planning for water resource projects. Other commentors expressed opposition to the proposed rules and stated that they would unnecessarily hinder and delay needed water resources development.

Table 1.—Supplementary Information—Summary of Major Changes in Proposed (Apr. 14, 1980) Principles and Standards—Level C

Section No. Proposed	Final	Title (in final)	Nature of changes
		Introduction:	
711.1, 711.2, and 711.4(a)	711.1	Purpose and scope	Combined two sections and included paragraph (a) from Proposed Section 711.4.
711.3	711.2	Authority	No major change.
711.4(b)	711.3	Applicability	Deleted paragraph (a) and revised section for clarity.
		General Planning Considerations:	
711.23	711.10	Federal/State relationship in planning	Added new paragraph (b) to emphasize role of States.
711.13	711.11	General public participation	Added specific reference to Indian tribes. Added early emphasis on scoping.
711.18	711.12	Review and consultation	No major change.
711.19	711.13	Interdisciplinary planning	Added sentence on use of outside expertise.
	711.14	Agency decisionmaking	New section.
	711.15	Planning area	New section.
711.12, 711.20, and 711.21	711.16	Scoping	Added paragraph (b)(2) referring to planning area. Incorporated language pertaining to ground water and instream flow. Expanded provisions regarding ground water to include opportunities.
711.11	711.17	Forecasting	Changed title and terminology, and revised for clarity.
711.17	711.18	Prices	Revised for clarity. Deleted paragraph on change over time of relationship between monetized and non-monetized values.
711.16	711.19	Discount rate	No substantive change.
711.14	711.20	Period of analysis	Added reference to each alternative plan and to consideration of environmental factors beyond the period of analysis.
711.15	711.21	Risk and uncertainty—sensitivity analysis	No substantive change.
711.22	711.22	Documentation	No major change.
		National Objective:	
711.30	711.30	General	No major change.
711.31	711.31	National economic development	No major change.
711.32	711.32	Environmental quality	Changed the basis for identifying a contribution to the EQ objective from five values (ecological, aesthetic, historic, educational/scientific, and pristine) to three attributes (ecological, aesthetic, and cultural).
		The Without Plan Condition:	
711.40	711.40	Resource Conditions	Added reference to forecasting. Related inventory and forecasting to the scoping process.
711.41	711.41	Problems and opportunities	No major change.
711.42	711.42	Constraints	No major change.
		Alternative Plans:	
711.50, 711.104(c), and 711.104(d)	711.50	General	Revised paragraph (b) to emphasize unique contribution of each alternative plan. Revised paragraph (d) for clarity. Revised mitigation paragraph (g) to provide definition and emphasize role of decisionmaker for all mitigation. Provided for consideration of State plans. Incorporated paragraph on scheduling from Subpart J.
711.104(b) and 711.104(e)	711.51	Formulation	Incorporated formulation from Subpart J. Incorporated paragraph on incremental analysis from Subpart J and revised to parallel net beneficial effects rule.
711.91	711.52	Candidate plans	Moved Section from Subpart I with no major changes.
711.51	711.53	Required alternative plans	Qualified the NED and EQ plans to reflect a degree of reasonableness.
711.52	711.54	Other alternative plans	Related the other alternative plans to effects outside the NED and EQ objectives.
		Accounts:	
711.60	711.60	General	Specified that effects in the NED and EQ accounts are to be mutually exclusive. Included statement that effects incident outside the U.S. need not be separated from the accounts.
711.61	711.61	National economic development account	Eliminated specific measurement standards from final rule.
711.62	711.62	Environmental quality account	Changed the basis for measuring effects in the EQ account from five values (ecological, aesthetic, historic, educational/scientific, and pristine) to three attributes (ecological, aesthetic, and cultural).
711.63	711.63	Regional economic development account	No major change.
711.64	711.64	Other social effects account	Expanded the account to include: (1) displacement of people, businesses, and farms; and (2) and effects on the long-term productivity of renewable resources.
		Displays:	
711.70	711.70	General	No major change.
711.71	711.71	Content and format	Deleted display requirement regarding differences between recommended plan and candidate plans. Added two tables to the display requirements for the recommended plan.
		Cost Allocation:	
711.80	711.80	General	Revised for clarity.
711.81	711.81	Definitions	Defined alternative cost for each purpose to be financial cost of achieving the same or equivalent benefits with a single purpose plan. Revised the definition of remaining benefit.
711.82, 711.85	711.82	Cost allocation standard	Added option authorizing allocation of joint cost in proportion to use of facilities.
711.83	711.83	Allocation of constituent cost	No major change.
711.84			Eliminated from final rule.
711.85			Eliminated from final rule.
		Plan Selection:	
711.90	711.90	General	Added reference to the four tests.
711.92	711.91	Selection	No major change.
711.93	711.92	Net beneficial effects rule	Change title of rule to net beneficial effects. Added a requirement that an exception be in accordance with a promulgated rule.
		Summary of the Planning Process:	
711.100	711.100	Introduction	No major change.
711.101	711.101	Major steps	No major change.
711.102	711.102	Specification of the problems and opportunities associated with NED and EQ objectives	No major change.
711.103	711.103	Inventory and forecast water and related land resource conditions within the planning area.	Revised to include forecast.

Table 1.—Supplementary Information—Summary of Major Changes in Proposed (Apr. 14, 1980) Principles and Standards—Level C—Continued

Section No. Proposed	Final	Title (in final)	Nature of changes
711.104	711.104	Formulation of alternative plans	Removed the detailed discussion on formulation to alternative plans 711.50(g), 711.50(h), 711.51(a), and 711.51(b).
711.105	711.105	Evaluation of effects	No major change.
711.106	711.106	Comparison of alternative plans	No major change.
711.107	711.107	Plan selection	Deleted reference to agency decisionmaker. Added reference to public input.
711.108	711.108	Iteration	No major change.

Some commentors stated that the proposed rules were too complicated, confusing, and cumbersome and needed considerable improvement. Other commentors stated that the proposed rules were well organized, clear, and concise. The general consensus seemed to be that the proposed rules were an improvement over the 1973 version of the Principles and Standards and should be more helpful to the agencies and to the field level planners for Level C Implementation Studies.

Level B Planning

Early drafts of Part 711 which were prepared for limited public and agency use in December 1979 and February 1980 were considered as Standards for Level C Planning. These early drafts were prepared concurrently with drafts of Part 710 which were considered as Principles for Level A, B, and C Planning. Since the Principles of Part 710 were not repeated in Part 711, the result was an incoherent document which was difficult to follow and required considerable referencing from Part 711 back to Part 710. The April 14, 1980 Proposed Rules included Part 710 as Principles for Level A, B, and C Planning and Part 711 as combined Principles and Standards for Level C. Part 711 repeated most of Part 710 to make a coherent document for Level C planning.

Some commentors did not feel that Part 710 should be finalized as Principles for Level B planning until appropriate standards could be developed.

After consideration of the comments, the Water Resources Council decided to finalize at this time only Part 711 which consists of the Principles and Standards for Level C studies only. Principles, Standards, and Procedures for Level B planning are being considered by the Council for future development. The Principles for Level C planning, as approved by the President, are shown separately in Section 5 of this supplementary information. Those Principles are incorporated into Part 711 as combined Principles and Standards for Level C.

Organization

1. *Comment.* Some commentors suggested a variety of changes for reorganizing the Principles and

Standards which ranged from a complete reorganization of the subparts, deletion of some subparts to rearranging some of the sentences. Some of the comments were in conflict with each other and some supported the proposed arrangement.

Response. After considering the various comments, WRC has determined that there was no basis for complete reorganization of P&S in the final rule. The major organizational changes made in the final rule are some revisions for clarity in Subpart A, rearrangement of the sections in Subpart B to a more logical order, and the movement of several sections from Subpart J to Subpart E. See table 1.

2. *Comment.* Some commentors expressed concern over development of the Principles, Standards, and Procedures on a piecemeal basis which made understanding and review difficult.

Response. It is recognized that the development of the P&S prior to completion of all parts of the Level C planning procedures may not be the ideal situation. Conversely, some parts of the planning procedures could be improved if the P&S were completed first. After consideration of the various advantages and disadvantages, WRC has established priorities and schedules for development of all the Level C planning rules. After completion of all the Parts (711 through 716), the entire set of rules could be reviewed and any needed improvements made.

Introduction (Purpose, Scope, and Applicability)

3. *Comment.* One commentor requested that the introduction require consistency with the Fish and Wildlife Coordination Act.

Response. This reference has not been added here because there are many other laws which would also apply. The basic consistency emphasis has been limited to the Water Resources Planning Act and the National Environmental Policy Act.

The Fish and Wildlife Coordination Act is specifically mentioned in the mitigation discussion of the final rules in § 711.50(g)(1). Other specific laws are referenced throughout the Principles and Standards where appropriate.

4. *Comment.* Some commentors requested clarification of the term

"WRC-designated agency" in § 711.1 of the proposed rule.

Response. The term "WRC-designated agency" has been deleted for the final rule and the specific agency activities which are covered are explicitly listed in § 711.1(b).

5. *Comment.* One commentor pointed out that the watershed program has certain exemptions by law which are not recognized in P&S and therefore is a violation of the Federal Consistency Act.

Response. It is recognized that P&S impose requirements on the agencies that are not requirements of other authorities. However, there are no known requirements in P&S which are in conflict with these other authorities.

6. *Comment.* One commentor suggested that a third consideration be added to the Scope (§ 711.2 of proposed rule) to include specific coverage of preemptive rights of Indian tribes.

Response. The reference has not been added because the P&S focus directly on the Water Resources Planning Act and the National Environmental Policy Act. See § 711.1 of the final rule.

Conformance with existing laws and regulations is covered under Alternative Plans, § 711.50(d) of the final rule. Indian tribes will be provided ample opportunity to become involved in the planning process when they are affected. See § 711.11 of final rule.

7. *Comment.* One commentor suggested adding a definition of "construction" as it is in the EPA regulations (40 CFR 122.47(b)(3)). Some commentors requested that additional programs be added and others requested that particular activities be excluded. Some commentors objected to the exemption clauses of proposed rule § 711.4 (c) and (d).

Response. A definition of "being implemented or under construction" has been added to the final rule as § 711.3(b). The definition is based on the definition used in the NED procedures, 18 CFR 713.3(a). Coverage and exemption has been edited but is essentially unchanged in the final rule as § 711.1(b) and § 711.3. After considering several options related to coverage, exemptions, and the definition of construction, it was concluded that the adopted text represents the best balance of the need to prevent undue loss of time or expenditure of public

funds, and any planning improvements which may result from new rules.

8. *Comment.* One commentator suggested that the P&S should conform with the CEQ NEPA regulations or that it should be made clear that if they differ, the CEQ NEPA regulations control.

Response. There are no known conflicts between the final P&S rule and the CEQ NEPA regulations. If any conflicts surface in the future, they will need to be handled on a case-by-case basis. It is inappropriate to state that one agency's rule in the Code of Federal Regulations has precedence over the rule of another agency.

General Planning Considerations

Federal, State, and General Public Participation and Review. (Proposed Rule § 711.23, § 711.13, and § 711.18/ Final Rule § 711.10, § 711.11, and § 711.12)

9. *Comment.* Some comments were received requesting that the lists of people to contact be expanded to cover specific groups including those in opposition to the project.

Response. The rule, as written, adequately includes all who may have concerns, could provide assistance, could be affected, or in any other way be related to the project or plan. Since it was not clear in the proposed rule that Indian tribes could be included in one of the categories, they have been specifically added in the final rule in § 711.11 to clarify that they are covered.

10. *Comment.* One commentator objected to considering the State governors and State agencies as part of the general "public."

Response. The sections on Federal-State Relationship and General Public Participation have been rewritten as § 711.10 and § 711.11 to stress the distinction between coordinated planning and participation by the general public.

11. *Comment.* One commentator suggested that State fish and wildlife agencies be contacted prior to initiating a study.

Response. This requirement has not been added because it is not appropriate to single out any one State agency for contact because there are likely to be several which should be involved. It should be noted that the Governor or designated State agency is to be contacted prior to initiating a study (§ 711.10(a)).

12. *Comment.* One commentator asked how and when the Federal agency is required to contact the groups listed for public participation.

Response. Requirements regarding when the Federal agency is to solicit public participation are in § 711.16 of the final rule. Guidance regarding how public participation may be solicited is provided in § 711.16(b) of the final rule.

13. *Comment.* One commentator suggested adding the phrase "or written" in § 711.13(b)(2) of the proposed rule.

Response. The final rule has been rewritten (§ 711.11(b)(2)) to delete the word "oral" and thereby not limit the types of expression.

14. *Comment.* One commentator stated that P&S seem to call for conflicting goals: First, encourage State cooperation; and second, rigid adherence to P&S.

Response. The final rule has been written to eliminate any known conflicts. It is recognized that the Federal agencies are responsible for compliance with P&S and that State objectives may often be different from the National objectives established by the P&S. Nevertheless, cooperation between the States and the Federal agencies is necessary for a successful planning effort. A Federal agency cannot complete a planning study without cooperation from the State and a State cannot receive assistance from a covered Federal program without cooperation of the Federal agency. See response to comment 199.

15. *Comment.* One commentator suggested that proposed rule § 710.23 was at odds with the A-95 process.

Response. Apparently the comment referred to the provisions of OMB Circular A-95 that require certain clearinghouses prior to initiating certain Federal actions. This requirement is not prohibited by P&S and is therefore not in conflict. It is not intended that the P&S contain every requirement that must be met for each covered activity. Some items will be covered in Part 712 and still others will need to be handled by the individual agencies for their particular program.

16. *Comment.* One commentator suggested that proposed rule § 711.18 and § 711.23 require consistency with the Fish and Wildlife Coordination Act.

Response. This requirement has not been added because it is considered to be inappropriate in the participation and review sections. Specific mention of the Fish and Wildlife Coordination Act is made pertaining to mitigation in § 711.50(g)(1) and tables 711.71-1, and -2.

Scoping (Proposed Rule § 711.12/Final Rule § 711.16)

17. *Comment.* One commentator suggested adding a phrase to paragraph (a) to ensure that unnecessary studies were not required.

Response. The suggested phrase has been added.

18. *Comment.* One commentator suggested changing "should" to "will" in paragraph (b) to tighten up the requirements for scoping.

Response. The final rule (§ 711.16(b)) uses the phrase "is to" to specify the scoping requirements.

19. *Comment.* Some commentators requested more references to require the public's involvement in scoping.

Response. References to numerous publics are included in § 711.16(a). Additional references to scoping have been added to the final rule to provide this linkage in § 711.10(b) and § 711.11(b)(1).

20. *Comment.* Some commentators suggested that scoping should be accomplished after inventorying and was therefore out of sequence.

Response. The sequence has not been changed in the final rule. It must be recognized that scoping must be done initially to focus on the identified problems that are to be addressed by the planning study. To do otherwise, would encourage planners to conduct extensive and extraneous studies which would not focus on the planning effort. Additional problems and opportunities may be addressed in the course of planning and the planning emphasis may well change and be reflected through subsequent iterations. See response to comment 204.

21. *Comment.* One commentator asked how to introduce new issues that arise.

Response. No change has been made in the final rule to reflect this. New issues can be introduced through repetition in scoping (§ 711.16(b)(8)) and iteration of the planning process (§ 711.108 of the final rule).

22. *Comment.* One commentator suggested modifying the Scoping section to address a lessening of the planning process for small projects.

Response. No specific revisions have been made to reflect the size of projects. It must be recognized that size, by itself, may or may not reflect significance. Scoping, if done properly and as intended, should tailor the planning process to the likely significant issues and eliminate unneeded and extraneous studies. Also, see response to Comment 96.

23. *Comment.* One commentator suggested adding the phrase "under consideration" to paragraph (c).

Response. The phrase has been added in § 711.16(c) of the final rule.

24. *Comment.* One commentator stated that the P&S definition of Scoping did not agree with the CEQ definition (40 CFR 1501.7).

Response. No change has been made to reflect this. After careful review of the CEQ definition and § 711.16, it has been determined that there is no conflict between the two. The P&S section on scoping contains some items related to planning studies and the CEQ section contains some detailed procedures which are not appropriate to P&S.

25. *Comment.* Some commentators suggested that previously studied issues need to be considered in the analysis even though they are not restudied.

Response. A sentence has been added to § 711.16(b)(3) to require appropriate consideration of other studies.

26. *Comment.* One commentator suggested that scoping should also include a reference to geographic extent of biological impacts in § 711.12(b) of the proposed rule.

Response. The reference to geographic area has been added to the final rule as § 711.16(b)(2) but covers all areas likely to be affected and is not limited to biological impacts.

27. *Comment.* Commentors suggested numerous changes to the sections on ground water and instream flow (§ 711.20 and § 711.21 of the proposed rule). Among the issues raised were:

1. Proper coordination with the States.
2. Recognition of existing water rights.
3. Relation of other studies to the scoping process.

4. Deletion of "within the scope of the planning process."

5. Provision of more emphasis on opportunities.

6. Definition of responsible Federal agency as defined in the Fish and Wildlife Coordination Act or other appropriate statute.

7. Recognition of beneficial effects of storage and gradual release of streamflow.

8. Consideration of relationships between ground water, streamflows, and withdrawals.

9. Relation of ground water and instream flow to wetlands and floodplains.

10. Consideration of estuaries.

Response. Specific sections on ground water and instream flow are not included in the final rule. The discussion has been incorporated into the final rule under Scoping, § 711.16(d) and Accounts, § 711.60(e).

Coordination with States and compliance with existing law are covered under § 711.10 and § 711.50(d) respectively. The other issues which

were raised are considered inappropriate detail for inclusion in the Principles and Standards but will be considered in development of Part 712.

Forecasting (Proposed Rule § 711.11/Final Rule § 711.17)

28. *Comment.* One commentator suggested that proposed rule § 711.11(c) be strengthened to require that EPA and State standards for water quality be met.

Response. The final rule has been revised (§ 711.17(d)) to require that all such rules receive appropriate considerations during the scoping.

Prices (Proposed Rule § 711.17/Final Rule § 711.18)

29. *Comment.* Some commentators indicated that the general price level prevailing during or immediately preceding the period of planning may not represent prices expected over the period of analysis.

Response. Section 711.18(b) has been revised to simply state that the general level of prices prevailing during or immediately preceding the period of planning is to be used for the entire period of analysis. Use of a fixed level of prices in planning does not indicate that a fixed level of prices is actually expected as was incorrectly implied in the proposed rule.

30. *Comment.* One commentator suggested that § 711.17(c) be revised to require documentation in all cases.

Response. Paragraph (c) has been deleted from the final rule. Possible changes in the relationships between monetized and non-monetized values are to be considered in plan selection (Subpart I).

31. *Comment.* One commentator suggested the addition of a paragraph on scheduling from the 1973 P&S, p. 24784 to follow the section on prices.

Response. This paragraph on scheduling was included in the proposed rule as § 711.104(c). It has been determined that this discussion is more appropriate in Subpart E—Alternative Plans. It has therefore been included in modified form in § 711.50(i) of the final rule.

Discount Rate (Proposed Rule § 711.16/Final Rule § 711.19)

32. *Comment.* Comments received concerning the discount rate included the following:

1. Discount rate is too high.
2. Discount rate is too low.
3. Changes should not be limited to plus or minus ¼ of one percent per year.
4. Discount rate should be held constant for a project throughout planning and installation.

5. Discount rate should be the rate in effect at the time construction begins.

6. Effects of additional discount rates should also be displayed.

Response. The basis for determining the discount rate has not been changed for the final rule. The method of determining the discount rate for evaluating projects has been affirmed by the Congress in Sec. 80, Pub. L. 93-251.

Period of Analysis (Proposed Rule § 711.14/Final Rule § 711.20)

33. *Comment.* Some commentators suggested that the proposed rule be revised to recognize that some effects are longer than others. Other commentators suggested that the period of analysis should be: The same for all plans; longer than 100 years; and shorter than 100 years.

Response. The final rule has been modified to require the same period of analysis for all alternative plans and has added a recognition of environmental factors that may extend beyond the period of analysis. The use of the 100 year period of analysis has been retained since it is generally accepted by the planning agencies as being reasonable for water resources planning.

Risk and Uncertainty—Sensitivity Analysis (Proposed Rule § 711.15/Final Rule § 711.21)

34. *Comment.* Some requests were made to improve the clarity of this section.

Response. The final rule has been modified for clarity.

35. *Comment.* One commentator suggested that the section was in conflict with the CEQ regulation, 40 CFR 1502.22, which states that where information is not reasonably available, and the agency decides to proceed, it should include a worst case analysis. Other commentators stated that the highest and lowest population projections should be used.

Response. The P&S require a determination of the most likely conditions (§ 711.17) and therefore assume that the information is available. This assumption is not in conflict with the CEQ regulation, which requires a worst case analysis only if the relevant information is unknown or unobtainable. The P&S section on risk and uncertainty—sensitivity analysis (§ 711.21) encourages consideration of reasonable alternative forecasts if they would appreciably affect the plans.

36. *Comment.* Some comments were received stating that the requirements for analysis of risk and uncertainty added requirements which were not necessary, were not likely to improve

the planning process, and did not clearly state how the analysis was to be made.

Response. It is felt that the consideration of risk and uncertainty will improve planning by identifying the areas of sensitivity so that decisions are made with full knowledge of the degree of reliability of the information. The methods of making the analysis are not appropriate for inclusion in P&S, but will be considered in the development of Part 712.

37. *Comment.* Some comments were received suggesting that P&S require planning and design for the greatest feasible degree of flexibility such as use of nonstructural measures.

Response. No specific change has been made to reflect this comment. However, the concern is covered in the sections on alternative plans.

38. *Comments.* One commentator suggested that § 711.15(b) be expanded to include risk and uncertainty for without project conditions.

Response. The final rule (§ 711.21(a)) has been changed to refer to the plans and their effects which include both with- and without-plan conditions.

39. *Comment.* One commentator suggested modification to recognize the practice of increasing safety factors in design as an alternative to collecting more data.

Response. The use of safety factors is recognized in § 711.21(d)(3) of the final rule. The reference had been included as § 711.15(b)(3) of the proposed rule.

40. *Comment.* One commentator stated that rules should provide certain minimum requirements on interview information.

Response. This has not been included in the Principles and Standards but will be considered in developing Part 712.

41. *Comment.* One commentator stated that many changes take place so rapidly as to make long-term projections meaningless.

Response. It is recognized that long-term projections or forecasts may vary. It is for this reason that some analysis of the risk and uncertainty is beneficial to the planning process.

Documentation (Proposed Rule § 711.22/ Final Rule § 711.22)

42. *Comment.* Some commentators questioned: The use and disposition of the documentation; the identification of the persons who would be reviewing the data; and the technical decisions to be reviewed. Other commentators suggested that the documentation should be easily accessible to the public.

Response. It is not appropriate for the P&S to limit the review to any particular area or group of reviewers. No specific mention is made of accessibility of

information to the public in this section of the final rule as it is adequately covered in the public participation section (§ 711.11 of the final rule).

Miscellaneous

43. *Comment.* Some commentators suggested that proposed rule § 711.19 should include a reference to inclusion of a broad array of planners including experts from outside the agency when necessary.

Response. A sentence dealing with expertise outside the planning agency has been added to the final rule in § 711.13.

44. *Comment.* One commentator suggested the inclusion of enforcement procedures or incentives to implement the Principles and Standards.

Response. No change has been made because the rules pertain only to activities inherently under the direction of the President.

45. *Comment.* One commentator suggested that P&S require funds for State Fish and Wildlife agency participation in the authorization for feasibility studies.

Response. No change has been made because funding requirements are not appropriate for inclusion in P&S.

National Objectives

46. *Comment.* Several commentators recommended an expansion of the objectives to include effects in the RED and OSE accounts.

Some commentators recommended that the EQ objective be expanded to the scope of the human environment as defined in the CEQ regulations. Several comments were focused on the life, health, and safety aspects of the OSE account. One commentator declared that placing health-related effects in the OSE account ignores the directives of NEPA.

One commentator declared that the emphasis on only the natural or historic aspects of the environment within the EQ objective and account is inappropriately narrow as compared to the declaration of policy in NEPA.

A few commentators urged that the objectives explicitly include economic development on Indian Reservations and protection of Indian cultural values and resources.

Recommended additions to the objectives also included promotion of trade and economic relations with other countries and contributions to the national balance of payments, to national security, and to national defense.

Response. The basis for the substance of the national objectives and the four accounts is the WRC policy decision established in the original 1973 version

of the P&S (38 FR 24778-24862), which is retained and clarified in the current 1980 version (18 CFR Part 711).

In a water policy message to Congress on June 6, 1978, the President stated, "The basic planning objectives of the Principles and Standards—national economic development and environmental quality—should be retained and given equal emphasis."

With respect to the accounts, the "human environment" cited in NEPA and the CEQ NEPA regulations (40 CFR Parts 1500-1508) is made up of the full range of resources collectively covered by the four accounts. For example, the EQ account consists of only that part of the NEPA human environment that identifies beneficial and adverse effects on significant natural and cultural resources that have one or more EQ attributes (ecological, cultural, aesthetic). Evaluation in all four accounts is necessary to fully address effects on the NEPA human environment.

47. *Comment.* Some comments were received expressing concern that even though NED and EQ objectives are declared to be coequal (§ 711.30(a)) the proposed rules did not assure this.

Response. Several changes have been made to promote coequal consideration of the NED and EQ objectives. The final rule regarding incremental analysis pertains to combined NED and EQ effects (see § 711.51(b)). The NED and EQ accounts sections (§ 711.61 and § 711.62 respectively) have been revised in the final rule to reflect equal consideration of the effects on the objectives.

48. *Comment.* One commentator implied that the selection of two, rather than four, national objectives has stemmed from difficulties in measuring and describing effects in the RED and OSE accounts. In the same vein, another commentator implied a conclusion that the WRC has excluded secondary benefits from the NED account because of difficulties in quantitative measurement.

Response. The selection and definition of national objectives were not based on the availability of either data or measurement methods. See response to comment 46.

49. *Comment.* Some commentators expressed concern that the NED and EQ objectives and accounts are defined in terms which will not adequately reflect the long-term benefits from soil erosion control. One of these commentators asked if benefits from sediment and erosion control are to be evaluated under just NED, just EQ, or both accounts. One commentator interpreted § 711.31 and § 711.32 to infer that erosion control benefits would be quantified in

monetary terms. Some commentators noted that erosion control benefits are difficult to evaluate in monetary terms and that net NED benefits are limited by the nature of erosion control which often imposes high short-term costs for benefits to be realized several years in the future. The feeling was expressed that the long-term benefits of maintaining soil productivity are indisputable.

One commentator recommended adoption of one of the following changes: (1) Expand the NED account to include a description of effects on long-term productivity in non-monetary terms; or (2) add an EQ value—"conservation of long-term productivity of renewable resources."

Response. As the accounts were defined in the proposed rule, benefits from erosion control would have been evaluated in the NED and RED accounts and possibly in the EQ and OSE accounts. The presence or absence of erosion control effects in the EQ account would have depended on the results of the scoping, inventory, assessment, and appraisal process. While this process is also in the final rule, there has been a significant change. The shift from five EQ values to three EQ attributes has broadened the framework and expanded the basis for evaluating erosion control effects (see §§ 711.32 and 711.62 of the proposed and final rules).

The list of categories in the OSE account has been expanded to include an item on long-term productivity of renewable resources (see § 711.64(e) of the final rule).

50. *Comment.* Some commentators had an opinion that under the Winter's Doctrine consideration of effects on Indian reservations should take precedence over the environmental concerns. They also stated that the Winter's Doctrine, especially as it relates to religious uses of the water, should be reviewed and reflected in the P&S.

Response. The Winter's Doctrine pertains to water rights, which must be considered in defining problems and opportunities and in formulating alternative plans (see § 711.16, § 711.31(b), § 711.32(b), § 711.41, and § 711.50(d) of the final rule).

51. *Comment.* One commentator requested an explicit definition of "conservation" as the term was used in § 711.30(a) of the proposed rule. The commentator noted that the term, as used in § 711.30(a), meant "capture, store, and save" and recommended that this definition be stated and used throughout the P&S. Another commentator suggested that § 711.30(a) be modified by inserting "development" after "conservation" in

the first sentence and substituting "conservation" for "protection" in the latter part of the second sentence.

Response. In § 711.30(a) of the proposed rule, the word "conservation" was used in reference to resources in general. This use of the word was not essential in introducing the two national objectives and is not included in this section of the final rule. The definition of water conservation in § 711.50(f) of the proposed rule is in § 711.50(e) of the final rule.

52. *Comment.* One commentator recommended that "or increased efficiency in the production of goods and services" be added to the definition of contributions to the NED objective and beneficial effects in the NED account.

Response. The value of production from resources released by increased efficiency in the production of goods and services is included in increases in the value of the national output of goods and services. However, this accounting for benefits from efficiency gains was not clearly stated in the proposed rule. Revised standards regarding measurement of benefits from increased efficiency are included in § 711.61(b)(2).

53. *Comment.* Some commentators inquired about the meaning of protection of national economic development in § 711.30(a) and recommended deletion of "protection and."

Some commentators suggested that § 711.32(a) be clarified by inserting "protection of or improvement" before "in the quality." Another commentator asked why "protection of or improvements in" was used in defining contributions to the EQ objective (§ 711.32(a)) while only improvements were included in a presumably parallel definition of beneficial effects in the EQ account (§ 711.62(b)).

One commentator suggested use of "increasing or conserving" rather than "protection of or improvement in" in defining contributions to the EQ objective (§ 711.32(a)).

Response. Protection and enhancement are relevant to NED as well as EQ within the context of § 711.30(a). Attention should be given to avoidance of adverse effects as well as the achievement of beneficial effects. "Protection" is not relevant in more specific situations involving a contribution to an objective or a beneficial effect in an account. However, the proposed rule was not clear and consistent. In the final rule, "favorable changes" is the key phrase in defining contributions to the EQ objective (§ 711.32(a)) and beneficial effects in the EQ account (§ 711.62(a)(2)).

Increasing the quantity of a resource does not necessarily contribute to the EQ objective. Thus, the phrase "favorable changes" has been used instead of "increases."

54. *Comment.* One commentator noted that the definition of contribution to the NED objective does not state whether increases in the value of the national output of goods and services are to be obtained from changes in prices or changes in the quantities of goods and services. The commentator explained that total revenue increases with a decline in output if demand is inelastic and that the definition of contributions to the NED objective appeared to exclude benefits of lower prices to consumers.

Response. Contributions to the NED objective are defined as increases in the value of the national output of goods and services in order to include benefits from an improved allocation of a given level of goods and services. The general measurement standard for the value of goods and services is defined as the willingness of users to pay for each increment of output from a plan (see § 711.61(b)).

55. *Comment.* With particular reference to deep draft navigation, one commentator stated that the objective should be to optimize project benefits rather than to maximize the net NED benefits. The commentator noted that maximizing benefits at one port would result in shifts of benefits from other ports.

Response. The comment seems to combine an element of good reasoning with a misunderstanding of the definition of a contribution to the NED objective. The NED objective and account pertain to the value of the national output of goods and services rather than the flow of commodities through a particular port.

56. *Comment.* One commentator recommended addition of the following sentence to § 711.30(b). "The best way to take advantage of an opportunity and contribute to the EQ objective may be to do nothing."

Response. The addition was not made to § 711.30(b). A paragraph on the EQ plan (§ 711.53(b)(2) of the final rule) has been modified to clarify that positive action may be necessary to realize the EQ objective if the without-plan condition forecasts a reduced EQ value. The alternative of taking no action is always to be considered in plan selection (§ 711.91(a) of the final rule). See response to comment 102.

57. *Comment.* Some commentators declared that it is unrealistic to include a provision that the NED and EQ objectives for the relevant planning setting are to be stated in terms of the

public's expressed desire to alleviate problems and realize opportunities. One commentator stressed the role of national policies as a source of guidance. Another recommended that the responsible governmental agencies take the lead in identifying problems especially those likely to result from proposed projects.

Response. The word "public" has been deleted from § 711.31(b) and § 711.32(b) of the final rule. Requirements regarding the identification of problems likely to result from an alternative plan are in Subpart F—Accounts.

58. *Comment.* One commentator stated that the P&S provided no basis for moving from national objectives to specific project area objectives.

Response. The P&S do not refer to "project area objectives." Statements of problems and opportunities provide the linkage between the national objectives and plan formulation. Numerous sections of the P&S pertain to the identification of problems and opportunities and to plan formulation in relation to these problems and opportunities. See § 711.10, § 711.16, § 711.17, § 711.31 (b) and (c), § 711.32 (b) and (c), § 711.41, § 711.50(a) and § 711.51 of the final rule.

59. *Comment.* Some commentators objected to the use of increased agricultural production in examples of problems and opportunities (§ 711.31(c) (1) and (2)). One commentator urged that the examples refer to "needed agricultural production." Another commentator recommended "national agricultural production."

Response. A problem or opportunity statement can refer to an increase in agricultural production in the planning area even though NED benefit is measured as the difference between production costs in the planning area and production costs on typical land in the WRC assessment subarea (see 18 CFR 713.405). However, a problem or opportunity can be directly related to a decrease in the costs of agricultural production in the planning area. Section § 711.31(c)(2) has been revised to illustrate the latter case.

60. *Comment.* Several commentators felt that the five EQ values listed in § 711.32(a) did not cover all of the possible resources. One suggested an additional value of cultural ecology. Another commentator said that there should only be three values—Ecologic, Cultural, and Sensory.

Response. The values were changed to attributes. The three attributes, Ecological, Cultural, and Aesthetic subsumed all of the five values and

allow coverage for all possible resources (see § 711.32(a) of the final rule).

61. *Comment.* One commentator felt that the EQ objective was poorly defined and would be easy to slight in plan formulation; additionally, the commentator felt that the agencies would be required to develop technical EQ guides.

Response. The national EQ objective is to provide for the protection and enhancement of environmental quality. Section 711.32 further defines the objective; § 711.62 defines the EQ account; and 18 CFR Part 714 provides procedures for determining EQ effects with various suggested technical guides.

62. *Comment.* Commentors said that the values were poorly defined, too narrow, or provided no guidance. Several commentators suggested changes in the definitions of the five values such as:

1. Include the plants and animals themselves as a resource.
2. Rephrase the definition of ecological and aesthetic values to reflect the possibility that they "could" provide or support the suggested requirements.
3. Add, "or contain an account of" to the historic value definition.

Response. Along with the change of values to attributes was the development of definitions for the three attributes, and examples were added for clarification. Guidance on how the attributes are utilized in evaluating the EQ effects is found in § 711.63 and 18 CFR Part 714.

63. *Comment.* One commentator urged that § 711.32(a) be revised to dispel the notion that the quantity of cultural resources can be increased through water resources planning.

Response. In the case of cultural resources a favorable change could be an increase in quantity as was presumed by the commentator. An "increase" in the number of cultural resources is possible if an alternative plan proposes preservation of some of those resources that would likely be lost in the without plan condition.

64. *Comment.* Two commentators requested identification of the party authorized to determine desirable levels of ecological, aesthetic, historical, education/scientific, and pristine values. With implicit reference to Soil Conservation Service (SCS) activities, one of these commentators recommended that the final decision be made by the planning team with guidance from the sponsor.

Response. In the context of the final rule the focus of this request shifts from the EQ values to the three EQ attributes. Determination of guidelines is made by

planners based on institutional, public, or technical recognition.

65. *Comment.* One commentator recommended that policy regarding objectives should require inclusion of improvement of fish and wildlife resources as a planning and protective objective where feasible (as determined by Federal and State wildlife agencies). On a related issue, one commentator recommended that § 711.32(c) be expanded to include a specific reference to EQ problems that may develop as an indirect effect of an NED problem.

Response. These recommendations are not included in the final rule. Problems and opportunities vary widely among regions and communities. There are numerous potential problems and opportunities and numerous sources of concern and information.

66. *Comment.* One commentator said that § 711.32 should contain the words, "and/or ensure the preservation of" after enhance.

Response. The thought of the comment is contained in the EQ national objective (§ 711.30(a)) in the words "protection and enhancement" of environmental quality. Therefore the change was not incorporated.

67. *Comment.* One commentator said that the example in § 711.32(c)(2) does not represent an "improvement" to a wetland.

67. *Response.* The example was changed.

The Without-Plan Condition (Inventory in the Proposed Rule)

68. *Comment.* One commentator suggested adding the word "preservation" as a possibility to be considered in the last sentence of § 711.41(b)

Response. The change has not been added because preservation is covered by the term "management", as a method of dealing with an identified problem or opportunity.

69. *Comment.* Some commentators pointed out that it was improper to include projections or forecasts in an inventory.

Response. The title of the subpart has been changed and the final rule has been revised to refer to both inventory and forecast.

70. *Comment.* One commentator asked who will determine the constraints on the planning team.

Response. No change has been made in § 711.42. The constraints must be very generally defined in the Principles and Standards. Constraints will be determined in the planning process through consultation, public involvement, reiteration, and ultimately be the agency decisionmaker.

71. *Comment.* One commentor suggested that the section on constraints, § 711.42, was part of the requirements for alternative plans and should be combined with § 711.50(e) (§ 711.50(d) in the final rule).

Response. The suggested change was not made in the final rule because § 711.42 pertains to identification of all constraints that could limit the attainment of the objectives and is considered a part of inventory and forecast. Section 711.50(d) in the final rule pertains to compliance with or proposed changes in statutes, administrative regulations, or common law.

72. *Comment.* One commentor suggested using scoping to determine the appropriate inventories to be made.

Response. A reference to scoping has been added in § 711.40(a).

73. *Comment.* One commentor suggested changing the phrase "further use or preservation" to "protection and enhancement" in § 711.40(a).

Response. The suggested change has been made in the final rule.

74. *Comment.* Some commentors suggested adding economic and social data in the inventory.

Response. The final rule has been modified (§ 711.40(b)) to clarify that economic and social as well as other environmental conditions are included.

75. *Comment.* One commentor suggested that the term "planning setting" was unclear in § 711.41(a).

Response. The term "planning setting" has not been changed in the final rule since it is used in a general way to tie the inventory and forecast with the problems and opportunities.

76. *Comment.* Some commentors suggested changing the word "characteristics" to "quality" in § 711.40(a).

Response. The suggested change has been made.

Alternative Plans

General

77. *Comment.* Several commentors expressed concern over the phrase "reallocating or preserving water" as a possible invasion of State water law in the proposed rule § 711.50(c).

Response. The phrase "reallocating or preserving water" are not included in the final rule since the phrase was not intended to imply an infringement on state water law. The paragraph in question has been rewritten as § 711.50(b).

78. *Comment.* One commentor suggested a requirement of specifying minimum instream flows for the alternative plans.

Response. It is not appropriate for the P&S to specify the minimum requirements. However, requirements for consideration of instream flow needs have been added to the discussion on scoping (§ 711.16(d)).

79. *Comment.* Several issues were raised regarding consideration of non-Federal alternative plans and alternative plans that were not in compliance with existing law (§ 711.50(d) and (e) of the proposed rule). The issues raised were:

1. Non-Federal alternative plans were not evaluated with the same intensity as Federal alternatives.

2. Non-Federal alternative plans should be considered viable by local people and should have a probability of implementation.

3. Alternative plans should not encourage possible changes to existing law.

4. Alternative plans should encourage changes to existing law if it contributes to the objective.

5. Alternative plans should not infringe on State water laws.

6. Alternative plans should not infringe on Indian water rights.

7. Non-Federal alternatives should be limited to those that compete with the Federal alternatives.

8. The alternative plans should be either in compliance with existing law or propose the necessary changes.

Response. The final rule has been revised to indicate that the alternative plans are to either comply with existing law or propose necessary changes (§ 711.50(d)) (issues (3), (4), and (8)). A specific reference to existing water rights (issues (5) and (6)) is included in scoping (§ 711.16(d)). No additional changes were made regarding intensity (issue (1)) and viability (issue (2)) as these are adequately covered by the application of the four tests (§ 711.51(c)). No additional changes were made to limit alternatives to those which compete with Federal alternatives (issue (7)) since all alternatives are to be developed to address the identified problems and opportunities (§ 711.50(a) and (b)) regardless of whether or not a Federal solution is available.

Water Conservation

80. *Comment.* Some commentors suggested changes to the definition of water conservation which generally placed more emphasis on water storage and water conservation devices and practices. Some commentors pointed out that the emphasis on water conservation was short-sighted because: water is reusable, the beneficial effects of irrigation return flows were ignored; and energy consumption was ignored. One

comment expressed support for water conservation as written.

Response. After consideration of the comments, the Water Resources Council has decided that the definition and discussion of water conservation in the proposed rules correctly reflected the intent of emphasizing methods of water conservation other than storage. No change has made in the final rule (§ 711.50(e)).

Mitigation

81. *Comment.* Several comments were received suggesting or requesting definitions and guidance for terms such as "mitigation", "appropriate", "when and where suitable" and "proportionate."

Response. The definition of mitigation has been incorporated into the final rule (§ 711.50(g)) by a specific reference to the CEQ NEPA rules (40 CFR 1508.20). The final rule (§ 711.50(g)) includes guidance for situations where concurrent and proportionate mitigation is physically impossible. The Council feels that the other terms should not be defined in these rules since they require case by case consideration and has specifically given the responsibility to the agency decisionmaker. A section on decisionmaking has been added (§ 711.14) to clarify the role of and responsibility for decisionmaking.

82. *Comment.* One commentor suggested deleting the reference to "habitat" so as not to exclude other forms of mitigation for fish and wildlife.

Response. The suggested change has been incorporated by adding the phrase "and their" in § 711.50(g)(1).

83. *Comment.* On proposed § 711.50(g), one comment was received stating that implementation instructions are inappropriate in a planning rule. Other comments stated that timely mitigation should be required.

Response. The final rule has been revised to require planning for timely mitigation (§ 711.50(g)).

84. *Comment.* Several comments were received on the reference to the rules for implementing the Fish and Wildlife Coordination Act pointing out that:

1. The rules did not apply to Pub. L. 566 projects.

2. The rules should be incorporated instead of just referenced.

3. The rules were not yet final.

4. Specific exceptions should be granted where excluded by other rules.

5. The Act only, not the rules, should be cited.

6. Other Acts should also be cited.

7. It was not clear whether mitigation referred to fish and wildlife only.

8. The reference was not needed since it was already covered by law.

to be considered in plan selection (§ 711.91(a)).

98. *Comment.* Some commentors pointed out that requiring a primarily nonstructural alternative was not consistent with the rest of the P&S because it focused on the solution instead of the identified problems and opportunities. Other commentors supported the requirements for requiring a nonstructural plan.

Response. The primarily nonstructural plan requirement has been retained in the final rule (§ 711.53(c)). Although it is recognized that some inconsistency may exist between requiring a primarily nonstructural plan and alternative plans addressing the NED and EQ objectives, the Water Resources Council feels that a primarily nonstructural alternative must be specifically required to insure that nonstructural measures are given sufficient consideration in the decisionmaking process.

99. *Comment.* One commentor suggested adding an energy conservation statement which would be comparable to the water conservation statement.

Response. A statement on energy conservation was not added to the final rule since it was felt that such discussion would be expanding the purpose and scope which is limited to planning for water and related land resources.

100. *Comment.* One commentor suggested integrating Executive Orders 11988 and 11990 into the rules.

Response. A reference to the two executive orders has been added to the final rule in Table 711.71-1. A reference to floodplain management and wetlands protection has been added to § 711.17(d).

101. *Comment.* One commentor suggested that, in the description of the EQ plan, (§ 711.51(b)(1) of the proposed rule) the word "preserve" be changed to "conserve and enhance."

Response. The phrase which included "preserve" is not in the final rule. Both preservation and enhancement are adequately covered by the first two phrases of the sentence, i.e. alleviate problems and take advantage of opportunities. See § 711.53(b)(1) of the final rule.

102. *Comment.* One commentor opposed the paragraph emphasizing the "no development" concept since it was only one of the items to be considered in formulating the EQ plan (§ 711.51(b)(2) of the proposed rule). Another commentor strongly supported the statement as a means to meet the EQ objective.

Response. The phrase has been modified (§ 711.53(b)(2) of the final rule)

to emphasize that positive action may be required to realize the EQ objective if the without-plan condition forecasts a reduced EQ value. See response to comment 56.

103. *Comment.* Several commentors requested that examples for both structural and nonstructural measures be included in § 711.51.

Response. The examples have not been added since they are inappropriate detail for the P&S. Example measures will be considered for inclusion in Part 712 when it is developed.

104. *Comment.* Several comments were received requesting clarification and suggesting changes in proposed § 711.51(c)(3) regarding nonstructural measures. Among the comments were—

1. The rule should not imply that it is necessary to choose the "ideal" nonstructural alternative. The "ideal" nonstructural plan would be the mix of nonstructural alternatives which best meets the objectives, taking OSE into consideration.

2. The rule should not imply that only two accounts are to be used for evaluation.

3. The without-plan condition, not the NED and EQ objective, is the basis for measuring benefits and cost.

4. Why is the concept of investing up to the point where marginal benefits equal marginal cost explicitly added for nonstructural alternatives but not structural alternatives?

5. The definition of a nonstructural alternative should be expanded to include actions, such as relocation of flood plain developments, energy conservation, etc., which do not affect natural or existing streams.

Response. General provisions regarding nonstructural measures have been rewritten for clarity and consistency as § 711.50(f). The primarily nonstructural plan requirement has been rewritten as § 711.53(c).

105. *Comment.* One commentor raised a question of what happens if a nonstructural plan does not meet the net benefits rule.

Response. The primarily nonstructural alternative plan is to be treated the same as any other alternative which could be recommended. The recommended plan must have combined NED and EQ net beneficial effects unless circumstances warrant an exception. See § 711.92 of final rule.

106. *Comment.* Some commentors suggested that the EQ plan and nonstructural plan could be the same and that this possibility should be recognized.

Response. The comment raises a valid point. Furthermore, in some cases, the primarily nonstructural plan could be

the NED plan. A sentence recognizing these possibilities has been inserted at the end of the first paragraph of § 711.53 for the final rule.

Other Alternative Plans

107. *Comment.* Some commentors suggested that a plan optimizing or balancing total net benefits be included as a required plan.

Response. No change has been made to add such a required plan. It must be recognized that the intent of the NED and EQ plans is to be able to display the range of alternatives that can be reasonably considered and show tradeoffs between the objectives. The other alternative plans are provided to allow a rational decision to be made. Ideally, the selected or recommended plan is the "best" (or optimum) plan.

108. *Comment.* One commentor suggested adding a new paragraph, § 711.52(e) to allow formulation of alternatives for special circumstances.

Response. The final rule has been revised to allow consideration of beneficial effects for life, health, and safety and other specific beneficial effects in particular situations. See § 711.54(b) of the final rule.

109. *Comment.* One commentor suggested that alternatives should be formulated with regard to their acceptability to benefactors.

Response. No change has been made since this is adequately covered by the acceptability test (§ 711.51(c)(4)).

110. *Comment.* One commentor stated that alternative plans should contain a mix of structural and nonstructural measures, as well as EQ and NED mix plans.

Response. This provision was included in § 711.50(b) of the proposed rule and is more specifically stated in the final rule (see § 711.50(a) and (f)).

111. *Comment.* One commentor suggested changing "trade-off" to "comparison" in proposed rule § 711.52(d).

Response. No change has been made (§ 711.54(d)(4) of the final rule) since one of the intents of the range of alternatives is to be able to display what must be traded from one objective in order to achieve the other objective.

112. *Comment.* Several commentors suggested inclusion of specific recognition of existing State plans in formulation and evaluation of alternatives.

Response. The recognition and consideration of such plans has been added as § 711.50(h) of the final rule.

Accounts

General

113. *Comment.* Several commentors recommended expansion of the NED and EQ accounts. The primary focus was on health effects and maintenance of long-term productivity in agriculture.

Response. This issue has been addressed in response to similar comments regarding expansion of the NED and EQ objectives. See response to comments 46 through 49.

114. *Comment.* One commentor stated that the proposed EQ account is more esoteric than in the existing P&S and will make the measurement process even more conjectural.

Response. The possibility of organizing the EQ account on the basis of aesthetic, ecological, and cultural values was introduced in the 1973 P&S (38 FR 24816). The final rules (P&S and EQEP) are intended to provide a rational process for development of the account.

115. *Comment.* Some commentors recommended that EQ effects be evaluated in monetary terms if possible.

Response. The EQ account has been developed to show environmental perspectives not reflected in economic values. Significant effects which can be evaluated in monetary terms are to be reported in one or more of the other accounts.

116. *Comment.* One commentor declared that replacement of "Social Well-Being" (SWB) with the new OSE account is a major step backward. The account has been reduced to a "catchall."

Response. It is not agreed that replacement of SWB with OSE is a step backward. The intent of the four account system is to encompass all significant effects of a plan on the "human" environment.

117. *Comment.* A commentor stated that negative NED and RED benefits should be applied to "no action" alternatives. Failure to update facilities may result in negative economic and social impacts.

Response. This change was not made because by definition the "no action" alternative has no effect. It is the base from which the effects of the alternative plans are evaluated.

118. *Comment.* One commentor recommended addition of a political stability account and a national security account.

Response. These items are not included as separate accounts, but if significant, they can be included in the OSE account.

119. *Comment.* A commentor stated that the NED and RED accounts are two perspectives (national and regional) of

the same economic development account. There are no comparable breakdowns of the EQ and OSE accounts to the national and regional level. The accounts should reflect a national and regional perspective on all effects.

Response. No change has been made because the national and regional perspective should be inherent in the description of the effects in the EQ and OSE accounts.

120. *Comment.* A commentor recommended taking out the reference to "human" environment in § 711.2(b). The distinction between environment and human environment is rather metaphysical.

Response. The term "human" environment has been retained to encompass the NEPA concept of the environment. The EQ account is part of the NEPA human environment, as defined in 40 CFR 1508.14.

121. *Comment.* One commentor stated that since only NED and EQ are objectives, some indication should be given as to the use of the information in the RED and OSE accounts. Another commentor suggested that there should only be two accounts, EQ and NED.

Response. The four accounts are needed to capture the full range of effects on the "human environment." See response to comment 46. The RED and OSE accounts provide information for the acceptability test during plan formulation (§ 711.51(c)(4) of the final rule). Effects in all four accounts are considered in selecting among plans that meet the net beneficial effects rule (§ 711.90 and § 711.92 of the final rule).

122. *Comment.* Several commentors expressed concern about § 711.60(c), which pertained to relationships between short-term use of the environment and maintenance and enhancement of long-term productivity and to irreversible or irretrievable commitments of resources.

One commentor noted that § 711.60 required only an identification of these effects, while Section 102(2)(c) of NEPA requires a "detailed statement" on these effects. The commentor recommended that the scope of § 711.60 be expanded to include evaluation and consideration.

One commentor suggested that § 711.60(c) be revised to include "any adverse effects which cannot be avoided."

One commentor asked why use of the environment was limited to the short-term in § 711.60(c).

Several commentors suggested alternative language for § 711.60(c).

Response. The accounts include only a portion of the process and information required by NEPA. Many of the

principles and standards for evaluation and consideration of effects are in other subparts.

The paragraph on relationship of short-term/long-term (§ 711.60(d) of the final rule) was not expanded to include "any adverse effects which cannot be avoided." Section 711.60(d) pertains to all candidate plans, only one of which becomes the recommended plan. Moreover, numerous sections of the P&S contain requirements regarding the identification of beneficial and adverse effects.

The focus on the relationship between short-term use of the human environment and long-term productivity reflects the provisions of Section 102(2)(C)(iv) of NEPA.

Section 711.60(d) of the final rule refers to "short-term use of the human environment." The word "human" had been inadvertently omitted in the proposed rule.

123. *Comment.* Several commentors noted that there is quite an imbalance in the coverage of the four accounts. One commentor declared, the planner is obviously receiving the most direction regarding NED account.

Some commentors characterized EQ measurement standards as "limited in number," "broadly described," "highly subjective," and "susceptible to manipulation." However, one of these commentors also noted that NED benefit estimates "are still subject to wide variations and speculation."

Response. The final rule has been revised to focus on what are considered to be principles and standards. The detail regarding specific NED measurement standards has been deleted. Several important definitions and concepts have been incorporated into the EQ account.

124. *Comment.* Commentors stated that § 711.60(f) requires monetary values in the accounts to be shown as average annual equivalents and that this requirement is in conflict with 18 CFR 713.25, which states that net NED benefits of a plan are to be calculated in present value terms. One commentor recommended use of present values in the accounts.

Response. The rule requiring expression of monetary values as average annual equivalents in the accounts is in § 711.60(h) of the final rule. There is no direct conflict between § 711.60(h) and 18 CFR 713.25. The net beneficial effects rule in P&S is based on a comparison of the combined beneficial NED and EQ effects with the combined adverse NED and EQ effects (see § 711.92(a) of the final rule). Average annual equivalents are judged to be more understandable than present

values in the application of the specified net beneficial effects rule. Planners could also display net NED benefits on a present value basis.

125. *Comment.* A commentator requested that the P&S include an explanation of the propriety of counting a particular benefit in several accounts.

Response. The final rule states that effects in the NED and EQ accounts are to be mutually exclusive (§ 711.60(b)). This separation is essential for a valid application of the net beneficial effects rule.

National Economic Development Account

General

126. *Comment.* One commentator urged that beneficial effects in the NED account be defined as net increases in the economic value of the national output of goods and services.

Response. The recommendation would result in unnecessarily complex standards. Adverse effects in the NED account often pertain to several beneficial effects. A net beneficial effects concept is relevant in a comparison of combined beneficial NED and EQ effects with combined adverse NED and EQ effects in decisions regarding inclusion of an individual purpose or increment of a plan and in selection of the recommended plan (§ 711.51(b) and § 711.92 of the final rule).

127. *Comment.* One commentator recommended that the NED account include secondary and induced benefits.

Response. National projections used in planning are to be based on a full employment economy (see § 711.17(c) of the final rule). Within this context secondary and induced effects are transfers among regions and are not included in the NED account.

128. *Comment.* One commentator urged inclusion of customs receipts on imports in calculating the effect of deep water ports.

Response. Customs receipts, like other tax revenues, are transfer payments and are not NED effects.

Goods and Services: General Measurement Standard

129. *Comment.* One commentator stated that the discussion of "willingness to pay" in § 711.61(b)(1) implies that the alternative techniques yield equivalent value. The commentator suggested a revision to avoid this implication.

Response. Revisions have been made to more clearly specify the appropriate use of the four techniques (see § 711.61(b) of the final rule).

130. *Comment.* One commentator urged that § 711.61(b)(1) be revised to require a determination of actual demand for the goods and services before using an alternative method to quantify their value. The same commentator recommended a similar revision in several of the specific measurement standards.

Response. Since demand is a price-quantity relationship, the comment must be in reference to goods and services supplied at zero, or near zero price and where realization of the benefit requires some positive action by the potential beneficiary. Thus, the concern appears to apply to navigation, recreation, and to situations involving a change in land use. Specific measurement methods are in 18 CFR Part 713 but are not included in the P&S final rule.

131. *Comment.* One commentator expressed concern that the measurement process may not be consistent throughout the economic evaluation and that techniques used to measure the value of benefits are commonly different from those used to measure costs. The commentator suggested development of a standardized economic assessment methodology focused only on measurements of willingness to pay and reasonable approximations.

Another commentator stated that the basic standard for NED benefits should be willingness to pay and that this standard is reflected adequately in the NED procedures (18 CFR Part 713).

Response. Willingness to pay is the basic standard; the other three standards provide an approximation of beneficial effects when willingness to pay is not directly observable. Similarly, opportunity costs are generally measured by market prices.

132. *Comment.* Two commentators requested that § 711.61(b)(1)(i) be clarified, especially with regard to the phrase, "if the effects cannot be estimated more precisely."

Response. The phrase has been replaced with "if price cannot be estimated for each increment of the change in output" (see § 711.61(b)(1) of the final rule).

133. *Comment.* There were several questions and recommendations regarding the use of change in net income as a measure of the value of intermediate goods and services from a plan (§ 711.61(b)(1)(ii) in the proposed rule).

One commentator asked if the word "producers" referred to final or intermediate producers.

Two commentators asked why net income is defined as the market value of producers' outputs less the market value

of producers' inputs exclusive of the cost of intermediate goods or services from a plan. The concern was with the exclusion phrase.

One commentator declared that the entire amount of an addition to net income should not be assigned to one of the many resources contributing to a change in net income.

Response. The phrase "producers of final consumer products" in the proposed rule has been replaced by "producers" in § 711.61(b)(2) of the final rule. The section has also been revised to clarify a focus on "the value of the change in output of intermediate goods and services from a plan."

Change in net income is a proxy for a direct measure of willingness to pay. Thus, the change in income should be net of all costs except the cost of the intermediate goods and services from the plan being evaluated.

Assignment of the entire amount of an addition to net income to the intermediate goods and services from a plan is based on an assumption that other production inputs are either: (1) The same with and without the plan; or (2) can be purchased as needed.

Intermediate goods and services not in one of these two categories should be provided by the plan being evaluated.

134. *Comment.* One commentator suggested that NED benefit estimates based on change in net income should be net of income tax in order to reflect the actual benefit to the beneficiaries.

Response. The NED account pertains to national benefits. Income taxes are transfer payments within the national economy.

135. *Comment.* One commentator recommended that § 711.61(b)(1)(iii) be revised to permit benefit estimates to be based on the most likely alternative only where there is evidence that the alternative means would be used.

Response. This recommendation was adopted (see § 711.61(b)(3) of the final rule).

136. *Comment.* Some commentators noted that § 711.61(b)(iv) implied considerable discretion in a decision whether or not to use administratively established values for recreation and that this implication was inconsistent with provisions in 18 CFR 713.903.

Response. A revision has been made to eliminate the incorrect implication (see § 711.61(b)(4) of the final rule).

Goods and Services: Categories

137. *Comment.* One commentator recommended addition of commercial trapping to the list of categories in § 711.61(b)(2).

Response. The recommendation was not adopted due to the relatively small

size of the commercial trapping industry and the limited relationship to Level C planning. NED benefits to the commercial trapping industry are permitted under the provisions of § 711.61(c)(12) of the final rule.

138. *Comment.* One commentator recommended that fish and wildlife be included as a separate NED benefit category.

Response. This recommendation was not adopted. NED effects associated with fish and wildlife are in the recreation and commercial fishing categories. Other effects are to be reported in the EQ account and in the OSE account if applicable.

139. *Comment.* One commentator recommended that the benefit categories specifically include steam electric power generation and self-supplied commercial and institutional water uses.

Response. These recommendations were not included in the final rule. The municipal and industrial water supply category includes water for steam electric power generation. Self-supply would be considered in defining the with and without plan situation and would be included in the municipal and industrial water supply category if affected by the alternative plan being evaluated.

NED—Specific Measurement Standards (Not in the Final Rule)

140. *Comment.* Several comments were received in regard to the specific measurement standards shown as § 711.61(b)(3) of the proposed rule.

Response. After consideration of the comments and the overall relationship of the principles, standards, and procedures, it has been determined that the proposed rule contained more detail than was appropriate for principles or standards. The detailed discussion has not been included in the final rule.

141. *Comment.* One commentator stated that the agricultural output benefit should be reduced by the replacement costs of wetlands lost by agricultural drainage.

Response. Mitigation costs are part of implementation outlays (§ 711.61(g)(1)) and are therefore accounted for in the calculation of net benefits for an alternative plan and in the allocation of cost among purposes.

142. *Comment.* One commentator stated that since railroad companies must pay for O&M of tracks, a fair comparison of water and rail transportation costs would require a prorating of waterway costs over the commodities shipped.

Response. The standard for measuring NED benefits is not intended to provide a basis for comparing cost by water and

rail. Standards regarding NED costs are in § 711.61 (f) and (g) of the final rule.

143. *Comment.* One commentator recommended that § 711.61(b)(3)(viii) be revised to exclude benefits which accrue to citizens and corporations outside the U.S.

Response. This recommendation is not in the final rule. The potential for benefits or any other effects to accrue outside the U.S. is not limited to deep draft navigation. A determination of the incidence of benefits and costs is extremely difficult. The final rule has been revised to permit the inclusion of any effects incident outside the U.S. (see § 711.61(i) of the final rule).

144. *Comment.* One commentator recommended inclusion of willingness to sell as a measure of value. The commentator declared that benefits foregone should be considered as a project cost where a net loss to a particular recreation benefit is projected.

Response. The value of displaced public recreational use is to be reported under the heading "other direct costs" (see § 711.61(g)(3) of the final rule). Measurement standards for adverse NED effects are in § 711.61(f) of the final rule.

External Economies

145. *Comment.* Some commentators expressed concern about § 711.61(c)(2) (§ 711.61(d)(2) in the final rule). One commentator stated that external economies should include decreases in the price of goods or services resulting from a plan. A commentator asked if price decreases are to be included as a direct effect in the NED account.

Response. Decreases in the price of goods and services from a plan are accounted for in the general measurement standard. See § 711.61(b) of the final rule.

146. *Comment.* One commentator stated that the example regarding reduction in downstream water treatment costs is not very good, since such benefits are often included under a water quality purpose.

Response. The example pertains to a project planned only for flood control and hydropower purposes. The distinction between external economies and goods and services from a plan is always related to the particular problems and opportunities considered in plan formulation.

Use of Otherwise Unemployed and Underemployed Labor Resources

147. *Comment.* Some commentators recommended that beneficial effects from the use of unemployed or underemployed labor be defined to

include offsite secondary and induced effects.

One of these commentators recommended deletion of § 711.61(d) (3), (4), and (5) and inclusion of a new section defining a "Labor Cost Adjustment Factor". The suggested adjustment factor, to be established annually by the WRC, would reflect both direct and indirect use of labor and would represent potential savings in private and public unemployment compensation, public assistance, and any other statistically available costs associated with unemployment.

One commentator urged that § 711.61(d)(3) be revised to include employment in operation and maintenance aspects of a plan where it is clearly shown that such employment alleviates chronic unemployment situations such as on Indian Reservations, etc.

One commentator recommended that benefits be adjusted by subtracting the cost resulting from post-construction unemployment exacerbated or caused by the plan. This commentator also recommended that beneficial effects from use of unemployed or underemployed labor be limited to those situations where the plan being evaluated is the most cost-effective form of Federal employment assistance.

Response. These recommendations have not been adopted. The WRC recognizes that the standard regarding beneficial effects from the use of otherwise unemployed or underemployed labor resources is somewhat arbitrary. The standard reflects identification and measurement problems and the requirement that national projections are to be based on a full employment economy. Section 711.61(d) of the proposed rule became § 711.61(e) of the final rule with no significant revision.

148. *Comment.* One commentator stated that underemployed labor is not recognized in the Procedures (18 CFR Part 713) and asked if the standard is in conflict with the procedure.

Response. The evaluation procedure in 18 CFR 713.1207(e)(1) pertains only to unemployed labor resources. A paragraph on alternative methods (18 CFR 713.1207(e)(2)) permits inclusion of benefits from use of underemployed labor.

149. *Comment.* One commentator recommended that effects from the use of unemployed or underemployed labor be treated as an adjustment to the adverse effects rather than in addition to benefits. The commentator explained that addition of an adjustment of benefits results in a lower benefit-cost

ratio than subtraction of the same adjustment from costs.

Response. The statement regarding the ratio of NED benefits to costs is correct as long as the ratio is greater than unity. However, the P&S use a net effects concept rather than a ratio of effects.

Adverse NED Effects: Measurement Standards

150. *Comment.* One commentator stated that the definition of costs in § 711.61(e) is inconsistent with the definition in 18 CFR Part 713.

Response. The measurement standard for adverse NED effects in § 711.61(e)(1) of the proposed rule (§ 711.61(f)(1) of the final rule) is consistent with the conceptual basis for estimating NED costs in 18 CFR 713.2003(a).

151. *Comment.* One commentator stated that the opportunity cost of resources committed to a publicly supplied water program cannot be evaluated in terms of an unlimited and unconstrained number of alternative uses. The commentator recommended deletion of all reference to opportunity costs.

Response. If market prices reflect the full economic value of a resource to society, they are to be used to determine NED costs. Associated costs, other direct costs, and external diseconomies are to account for any additional values. The general definition is based on opportunity costs in order to establish a logical basis for including associated cost, other direct costs, and external diseconomies.

NED Cost Categories

152. *Comment.* One commentator recommended that § 711.61(e)(2)(i) of the proposed rule (§ 711.61(g)(1) of the final rule) be revised to clarify the inclusion of construction, operation, maintenance, and replacement costs of mitigation features.

Response. The final rule defines implementation outlays in terms not dependent on a listing of individual items (see § 711.61(g)(1)).

153. *Comment.* One commentator requested a clarification and an example regarding exclusion of transfer payments in § 711.61(e)(2)(i) of the proposed rule.

Response. The requested change has been made (see § 711.61(g)(1) of the final rule).

154. *Comment.* One commentator noted that adjusting NED costs by an allowance for the salvage value of land at the end of the period of analysis can be interpreted to indicate that the net cost of land may be very low since the discounted salvage value may

approximate the present purchase cost or value.

Response. The commentator was apparently assuming that general inflation is to be projected in estimating land value at the end of the period of analysis. This is not the case (see § 711.18 of the final rule).

155. *Comment.* One commentator urged that the definition of project outlays (§ 711.61(e)(2)(i)) be expanded to include pollution control costs.

Response. The definition includes pollution control costs if relevant in a particular plan. See § 711.61 (f) and (g) of the final rule.

156. *Comment.* One commentator noted that associated costs in the examples in § 711.61(e)(2)(ii) would normally be handled in farm budget analysis and would not be included with project costs.

Response. Associated costs are defined on a residual basis (see § 711.61(g)(2) of the final rule) and do not include cost in a farm budget. The example is relevant where facilities are provided by a local district.

157. *Comment.* One commentator asked if downstream costs from increased salinity from either increased runoff or simply less dilution would be an external diseconomy and included in the NED account.

Response. External diseconomies from salinity are not limited to salinity increases caused by irrigation return flows. The example is not meant to be all inclusive.

158. *Comment.* One commentator expressed concern that kinds of external diseconomies are not defined and that no procedures are established for analyzing external diseconomies.

Response. Additional examples and procedures are in 18 CFR 713.2015.

Environmental Quality Account

159. *Comment.* One commentator said that inventorying did not include defining the EQ resources and values and that data collection should occur during assessment. It was also stated that using preservation and enhancement as a guideline was unnecessary since they are already established as an objective.

Response. The definition of EQ resources and attributes should precede detailed inventorying (data collection) so that the inventory can be properly focused on specific, well-defined EQ issues. Inventorying is accomplished prior to the assessment of effects (18 CFR 714.430) so that planners have the information needed before entering into an assessment (see 18 CFR Part 714, Subpart D). See 18 CFR 714.412(d)(5) for a discussion of the relationship between

guidelines and words such as preservation and enhancement.

160. *Comment.* One commentator wanted "long term productivity of renewable natural resources" to be added as one of the EQ values.

Response. Long term productivity has been added as a possible descriptor of effects (see § 711.62(d)(2)).

161. *Comment.* One commentator wanted beneficial effects to include "protection of" resources and values.

Response. Protection of resources and attributes (values) could be shown to be beneficial if a plan provides for protection and the without-plan condition allows a deterioration of the resource or attribute (see § 711.62(e)).

162. *Comment.* One commentator said the regulations should provide guidance on how to deal with divided or nonexistant public opinion.

Response. The P&S require the agencies to solicit public opinion, but it is beyond the scope of P&S to establish specific guidelines on how to solicit and arbitrate public opinion.

163. *Comment.* Commentors suggested that: EQ methodologies should be developed now; EQ methodologies exist now and should be utilized; specifically that FWS's HEP should be used; and EQ outputs should be quantified in monetary units and possibly incorporated into the NED account.

Response. Effects on natural and cultural resources that can be measured in monetary terms are included in NED (e.g. recreation). Examples of techniques that can be used to measure effects on natural and cultural resources in nonmonetary numeric terms or non-numeric descriptive terms are listed in the EQ evaluation procedures (Table 714.412). The listed techniques are not mandated for use but are presented as an aid to planners in identifying techniques that may be used. Additionally, WRC has undertaken a three year effort to identify a more comprehensive set of techniques for use in EQ evaluation. The final rule for EQ evaluation (18 CFR Part 714) may be supplemented to reflect the results of that effort at a future date.

164. *Comment.* One commentator felt that the EQ account (§ 711.62) contained only minimal contents as compared to the NED account (§ 711.61).

Additionally, it was suggested that § 711.61 had been used as a supplement to 18 CFR Part 713 rather than to display basic principles and standards.

Response. Some of the detail in § 711.61 of the proposed rule has been eliminated, while § 711.62 has been made much more specific.

165. *Comment.* One commentator said that in the present P&S, the planner is

making the decision that an effect is either beneficial or adverse, and that this should be left to the decisionmaker, unless the procedures establish a specific standard or threshold between beneficial and adverse.

Response. Planners are responsible for determining beneficial and adverse effects in terms of indicators and EQ attributes. These determinations are displayed (see 18 CFR 714.441) for the decisionmaker who determines a net EQ effect (see § 711.62(e)(3)).

166. *Comment.* One commentator felt that "natural" resources could be interpreted to mean only those resources which have not been altered by man; further that "natural" should include all aspects of land and water resources.

Response. The P&S are, as the title indicates, to be used for applicable planning for water and related land resources. It would be hard to interpret natural in this context to mean "unaltered by man". There are very few resources that have not in some fashion been affected by man.

Regional Economic Development Account

167. *Comment.* Some commentators noted that the RED account seemed to be a subpart of the NED account. One commentator expressed much concern about the appearance of NED effects in the RED account. The commentator urged that RED benefits to a region be net of disbenefits.

Response. The RED account shows both the incidence of NED effects and transfers among regions.

Assuming that "disbenefits to other regions" means transfers from other regions, the RED benefit net of "disbenefits" to other regions would be equal to the NED benefits. However, the introduction of "disbenefits" seems unnecessary and confusing. The recommendation has not been adopted.

168. *Comment.* One commentator urged that the scope of the RED account be expanded to show effects on the dispersion of production among regions and the implications in relation to: (1) Transportation costs; (2) relative efficiencies and willingness to produce; and (3) regional weather and disaster.

Response. The first two items are reflected in the NED and RED accounts. An effect on the concentration or dispersion of production which might effect life, health, and safety is to be reported in the OSE account (see § 711.64(c) of the final rule).

169. *Comment.* Numerous commentators objected to the provision that RED effects may be excluded if they cannot be estimated in a sound manner (§ 711.63(A)(3)). Several commentators

stated that inability to measure effects does not constitute a basis for ignoring effects which could be described in qualitative terms.

Response. An option of describing rather than measuring effects in the RED account has been included in § 711.63(a)(3) of the final rule.

170. *Comment.* Regarding the definition of regions for RED analysis (§ 711.63(a)(2)), one commentator suggested that the phrase "particularly significant income and employment effects" should be better defined.

Response. Specific guidance regarding RED analysis is being deferred for inclusion in Part 715. Meanwhile, decisions regarding the significance of income and employment effects will depend on the scoping process.

171. *Comment.* One commentator recommended that the discussion in § 711.63(b)(1)(i) be expanded to cover exceptions to the general statement that almost all NED benefits should accrue to the regions being analyzed. The comment implied an assumption that hydropower and recreation benefits would generally serve people outside of the regions being analyzed.

Response. Each region significantly effected by an alternative plan is to be included in the RED evaluation. A region receiving a significant benefit is to be included in the analysis (see § 711.63(a)(2) of the final rule).

172. *Comment.* One commentator suggested that § 711.63(b)(1)(ii) be revised to note that not all income benefits are transfers, particularly where unemployed or underemployed resources become employed as a result of plan construction and operation.

Response. Section 711.63(b)(1)(ii) has been revised to note that transfers are to be net of NED benefits from employment of otherwise unemployed or underemployed labor. This NED benefit pertains only to labor employed in the construction or installation of a plan (see § 711.61(e)(3) of the final rule). Income from employment in the operation phase of a plan is defined to be a transfer.

173. *Comment.* One commentator requested that the terms "income transfers" and "transfer payments" be defined more clearly.

Response. The final rule has been revised to more clearly define income transfers (see § 711.63(b)(1)(ii)).

174. *Comment.* One commentator urged that the RED account include post-construction unemployment of workers relocated to the area during construction.

Response. This revision was not included. Workers who relocate to an area during construction are presumably

mobile and able to relocate for subsequent employment.

Other social effects account

175. *Comment.* One commentator objected to the title of the OSE account because the word "other" suggests that the NED and RED accounts are social effects accounts. The commentator recommended "Sociological Effects Account."

Response. The title of the OSE account was intentionally selected to recognize that each of the accounts involve social effects. "Social" has a much broader meaning than "sociological." Since many of the items in the OSE account are essentially economic, the recommended title is inappropriately narrow.

176. *Comment.* One commentator objected to the discretionary language used in § 711.64(a)(1), which stated, "The categories of effects in the OSE account may be the following * * *". The commentator noted that categories in the other accounts are introduced with a definitional format, which requires consideration of particular effects. The commentator recommended replacing "may be" with "include."

Response. The recommended change is in the final rule (see § 711.64(a)(1)).

177. *Comment.* Several commentators declared that inability to satisfactorily quantify or describe effects with available methods, data, and information was not a valid reason for excluding effects from the OSE account.

Commentors specifically objected to the limitation that only available data be used. These commentators suggested deletion of § 711.64(a)(3) and dependence on the scoping process for identification of the issues to be studied.

Response. Section 711.64(a) was not revised. Effects which cannot be quantified may be described. There is no directive to use only available information.

178. *Comment.* One commentator suggested that § 711.64(a) be revised to better explain the relationship of the OSE account to the other accounts and to the decisionmaking process.

Response. This suggestion has been incorporated into revisions in other sections. The relationship among accounts is discussed in § 711.60 of the final rule. The role of effects outside NED and EQ in the formulation of alternative plans is defined in § 711.51(b) and § 711.54(b) of the final rule. Consideration of effects in plan selection is shown in § 711.90.

179. *Comment.* One commentator stated that § 711.64(b) focuses on only one target population and should be revised

to be inclusive of all group and class impacts relevant to the decisionmaking process. The commentator recommended deletion of the reference to OMB Circular A-116 and Executive Order 12074.

Another commentator noted that OMB Circular A-116 pertains to major policy or program changes rather than to individual projects. This commentator stated that close coordination with OMB will be necessary to clarify the application of the circular in field level planning.

Response. Numerous types of impacts and types of places are listed in § 711.64(b). OMB Circular A-116 and E.O. 12074 are cited as sources of information and policy guidance. Level C planning is not subject to the review requirements specified in OMB Circular A-116.

180. *Comment.* One commentator urged that particular attention be given to effects on Indians and tribal lands.

Response. The list of types of places to be included in a reporting of urban and community impacts was expanded to include Indian communities:

181. *Comment.* One commentator asked if "nonmetropolitan communities" include rural communities. Another commentator suggested that "rural communities" be added to the types of places in § 711.64(b)(4).

Response. Nonmetropolitan communities include rural communities; however, "rural communities" was added to the list in § 711.64(b)(4) of the final rule.

182. *Comment.* Several commentators recommended an expansion of the scope of the OSE account. Items suggested include: (1) Conservation of the resource base for use by future generations; (2) national defense; (3) emergency preparedness; (4) recreational opportunities; (5) loss of wilderness areas; (6) reduction in dependence on foreign sources of energy; and (7) effects on attitudes, beliefs, law, and justice.

One commentator noted that the items listed did not seem to include all significant effects on social well-being as required by Section 122 of the Flood Control Act of 1970.

One commentator recommended adding an "Additional Effects" category to the OSE account.

Response. From among the specific suggestions a category titled "Long-term productivity" was added to the OSE account (see § 711.64(e) of the final rule). The other specific suggestions were judged to be either already included in one of the accounts or of limited relationship to Level C planning.

Planning of water related defense facilities is not subject to P&S.

A comparison of the proposed rule to Section 122 of the Flood Control Act of 1970 led to an expansion of the OSE account to include displacement of people, businesses, and farms (see § 711.64(d) of the final rule).

183. *Comment.* Some commentators requested a definition of conservation within the context of § 711.64 (a) and (d).

Response. As used in § 711.64 (a) and (d), conservation pertains only to energy conservation. The word "energy" was inserted in the final rule.

184. *Comment.* One commentator declared that energy requirements and energy conservation can usually be expressed in monetary terms and therefore belong in the NED and RED accounts.

Response. The monetary value of energy requirements and energy conservation is reflected in the NED and RED accounts. Information regarding energy use is to be reported in physical units in the OSE account to provide an additional perspective on plan effects.

Displays

185. *Comment.* One commentator suggested that the definition of displays be expanded to include drawings and photographs.

Response. The final rule, § 711.70(a), has been modified as suggested.

186. *Comment.* One commentator suggested adding some general standardized formats.

Response. Two tables have been added as minimum requirements. Other standardized formats have not been added because it is considered inappropriate detail for the Principles and Standards. The use of additional standard formats will be considered during development of Part 712.

187. *Comment.* Some commentators suggested modification of proposed § 711.71(c) to provide more guidance on description of alternative plans. Another commentator suggested that proposed § 711.70 did not allow sufficient flexibility in the requirements.

Response. Other than the addition of Tables 711.71-1, and -2, no substantive changes have been made in this subpart. It must be recognized that judgment on the part of the agency decisionmaker will be necessary. The content and format will be determined by the planning agency in accordance with § 711.71.

188. *Comment.* One commentator stated that the requirements of § 711.70(b) did not meet the requirements of NEPA, Section 102(2)(C).

Response. It was not intended that all the requirements of Section 102(2)(C) of NEPA be included within the subpart on

displays. However, it is felt that the entire P&S, particularly the subparts on general planning, alternative plans, accounts, and plan selection do meet the requirements of NEPA and therefore no further changes are necessary in the final rule.

Cost Allocation

189. *Comment.* One commentator stated that the proposed rule regarding cost allocation was inconsistent with the 1973 P&S which provided for an allocation of costs between the NED and EQ objectives. In a rhetorical question, another commentator implied a suggestion that cost allocation should apply to all accounts.

Response. The final rule includes a modification of the separable cost-remaining benefit method to adjust for inclusion of a purpose which generates more than incidental or complementary EQ beneficial effects (see § 711.81 (c) and (d)). The final rule also permits joint cost to be allocated among purposes in proportion to use of facilities (see § 711.82). These options can be used to avoid an inequitably small allocation to purposes primarily serving the EQ objective.

190. *Comment.* One commentator objected to the implication that a thorough cost allocation must be done for each candidate plan whether or not cost sharing is involved. The commentator recommended that § 711.80(a) be revised to state, "Rough estimates of allocated costs for all alternative plans may provide inputs to the RED and OSE accounts."

Response. Cost allocation is relevant only if cost sharing is involved (see § 711.80(a) of the proposed and final rules).

The recommendation regarding use of rough estimates of allocated costs was not adopted. Information used in cost allocation is essentially the same as is used in plan formulation and in the NED account.

191. *Comment.* Some commentators were concerned about the definition of financial costs.

One commentator asked if there is a reason why local interests should not be required to pay their share of associated costs, other direct costs, and external diseconomies.

One commentator summarized cost classifications in the proposed rule and in 18 CFR Part 713 and concluded that project outlays and associated costs must be financial costs. The commentator requested a clear definition of the costs to be allocated.

One commentator suggested that interest during construction should be

considered in the identification of costs to be allocated.

Response. Non-Federal interests bear all, or essentially all, associated cost, other direct costs, and external diseconomies. The latter two categories do not involve a financial outlay. Associated costs are non-Federal unless there is Federal participation under programs not covered by the P&S (see § 711.61(g)(2) of the final rule).

Financial costs are implementation outlays plus transfer payments such as replacement housing assistance payments. The definition of financial costs has been revised (see § 711.80(b) of the final rule).

Interest during the installation period is not excluded from implementation outlays. The definition of period of analysis has been revised (§ 711.20(a)) to include the time required for implementation.

192. *Comment.* One commentator expressed an opinion in support of permitting cost to be allocated to the unemployed labor benefit category.

Response. This suggestion was not included in the final rule. Use of otherwise unemployed labor is not a purpose.

193. *Comment.* Some commentators inquired about the meaning of the requirement that all purposes be treated comparably.

Response. The same cost allocation standards apply to all purposes.

194. *Comment.* Some commentators recommended that the rule regarding cost allocation include a requirement that benefits for a purpose exceed separable cost for that purpose. Another commentator asked if each purpose must be justified.

Response. The final rule has been revised to direct formulation toward inclusion of increments only if its combined beneficial NED and EQ effects outweigh its combined adverse NED and EQ effects (see § 711.51(b)).

195. *Comment.* Some commentators recommended that cost allocated to a purpose be limited not to exceed the cost of achieving the same or equivalent benefits with a single purpose plan.

Response. This recommendation has been incorporated into the final rule (see § 711.81 and § 711.82).

196. *Comment.* One commentator recommended that joint cost be allocated in proportion to use of facilities in the case of plans with multiple purpose reservoirs and other plans for which a determination can be made of the percent use of facilities by purpose. For other plans in which the beneficial effects are expressed in monetary units the commentator recommended allocation of joint cost in

proportion to remaining benefits. For remaining plans the commentator recommended selection of a cost allocation procedure by the Secretary based on previously established criteria.

Some commentators noted that § 711.85 provided little guidance in either determining if the prescribed methods yield unreasonable results or in selecting an alternative method.

Response. The final rule (§ 711.82) permits allocation of joint costs in proportion to either remaining benefits or use of facilities.

A third option is applicable only if joint cost exceeds the sum of remaining benefits and if allocation of joint cost in proportion to use of facilities is not possible. The third option permits allocation of joint cost by an alternative method judged by the Secretary of a Department or head of an independent agency to provide a more equitable distribution of cost.

197. *Comment.* One commentator requested clarification of § 711.84 which specified a two step procedure for determining separable costs.

Response. The provisions in § 711.84 of the proposed rule were judged to be too detailed and too procedural for inclusion in the P&S and have been deleted.

Plan Selection

General

198. *Comment.* One commentator suggested a need for explaining the difference between Federal and Federally-assisted projects in proposed rule § 711.92.

Response. The explanation has not been included in the final rule because it is generally understood that Federally-assisted refers to those projects which are planned, installed, and maintained by local groups with the Federal agency providing assistance to the local group such as the SCS water and related land resources projects. Federal projects are those under control of the Federal government such as Corps of Engineers' civil works projects.

199. *Comment.* One commentator stated that a Federal agency must have veto power over plans selected by States or local sponsors if Federal funds or other support are provided. Another commentator suggested that the State must have a co-equal voice in plan selection.

Response. The final rule has been modified to deal with the role of the State in the planning process (§ 711.10). Although it cannot be explicitly stated in the P&S because of the differences among the States and the various Federal authorities, it must be

recognized that the State and the Federal agency each have within their authority certain "veto" power over the other. Federal agencies do not proceed with projects that are not supported by the States. Federal funds cannot be authorized for implementation until the plan is reviewed and approved by the various levels of the Executive Branch and/or the Congress. See response to comment 14.

200. *Comment.* One commentator stated that RED or OSE should take priority over NED in evaluating benefits for port facilities.

Response. The change has not been made in the final rule because it would not relate to the established objectives. All effects are considered in evaluating and selecting plans.

Net Beneficial Effects Rule

201. *Comment.* One commentator suggested that proposed rule § 711.91(a) be modified to clarify that it is the decisionmaker who judges the combined NED/EQ effect.

Response. No substantive change has been made in this section, (§ 711.92(a) of the final rule). However a new section on decisionmaking has been added as § 711.14 which addresses this concern.

202. *Comment.* One commentator stated that there was no rationale for developing RED and OSE accounts if they were not considered in the net benefits rule.

Response. No change has been made. The purpose of the net beneficial effects rule is to evaluate the overall effect of a recommended plan on the two objectives. The other accounts, RED and OSE, are intended to be used by planners, decisionmakers, and the public in evaluating other effects on the human environment. This would be helpful in: The selection of a plan from among several choices, all of which meet the net beneficial effects rule; reformulation of alternatives to minimize undesirable effects; determination of whether a situation warrants an exception to the net beneficial effects rule; etc.

203. *Comment.* Some commentators suggested that no exceptions should be allowed to the proposed net benefits rule (§ 711.93(b)). Other commentators requested clarification of when and where it could be waived. Still other commentators suggested specific reasons for exceptions, including life, health, and safety, Indian trust lands, RED considerations, and OSE considerations.

Response. No major change has been made in the exception paragraph (§ 711.92(b)) of the final rule. The WRC has considered the comments received and has decided that exceptions should

be allowed if warranted by special circumstances. Exceptions are permitted only by the Secretary of a Department or head of an independent agency. The final rule permits these exceptions only if in accordance with rules promulgated by the Secretary of the Department or head of the independent agency. Based on the number of exceptions to the net benefits rule in the 1973 P&S, exceptions are expected to be very rare.

Summary of the Planning Process

204. *Comment.* Some commentors suggested that an earlier step, prior to (1), was needed to provide a broad assessment to be able to examine the resource base first and not limit it to the NED and EQ objectives.

Response. The earlier step has not been added because Level C studies are initiated in response to locally identified problems and opportunities. The initial step is to specify these local problems and opportunities in terms of the two National objectives. It is recognized that additional problems and opportunities may be identified throughout the planning process and there will be ample opportunity to explore them through reiteration, various stages of scoping the study, and review. See response to comment 20.

205. *Comment.* Regarding § 711.101(a)(2), one commentor suggested that inventory and analysis include more than water and related land.

Response. No change has been made reflecting this comment in § 711.101(a)(2) because the necessary detail is contained in Subpart D.

206. *Comment.* One commentor suggested that § 711.102(c) be expanded by adding that opportunities include preserving the existing environment by taking no action.

Response. The suggested change has not been made because it is not necessarily correct. Often, in fact, it may be necessary to take a positive action if the existing environment is to be preserved as stated in § 711.53(b)(2).

207. *Comment.* One commentor stated that the premise that comparing quantitative items such as those in the NED account with nonquantitative items such as those in the EQ account to arrive at a logical, rational conclusion is illogical and should be replaced by a technique using weighting factors and assigning a monetary value to the total weighted environmental effect.

Response. No change has been made in the final rule to address this comment. It must be recognized that the effects in all accounts are to be expressed in numeric units where appropriate. See § 711.60(g) of the final

rule. Use of weighting techniques is not prohibited by the P&S and could be used where it is appropriate. Weighting is mentioned as a viable approach in the environmental quality evaluation procedures in 18 CFR 714.441(c)(2). WRC is continuing to develop and evaluate various EQ evaluation techniques as a part of its ongoing work.

Requirements for assigning a monetary value to the total weighted environmental effect is not included in the final rule because it is considered beyond the current state-of-the-art.

208. *Comment.* Some commentors stated that § 711.107, which refers to plan selection by the agency decisionmaker, was inconsistent with § 711.92 since, for some programs, the plan is selected by local sponsors. Another commentor remarked that § 711.107 and § 711.92 should permit local people to have the ultimate decision in plan selection.

Response. It is recognized that, for some programs, the plan is selected by local sponsors and the reference to agency decisionmaker has been deleted from § 711.107 of the final rule. In § 711.91(b) of the final rule, the distinction between Federal and Federally assisted programs has been retained in order to explicitly cover all the various programs which are subject to the P&S. In either case, it must be recognized and stressed that cooperation between the Federal, State, and local agencies and groups is essential for any successful planning effort. See § 711.10 and § 711.11. Also see response to comment 199.

209. *Comment.* One commentor suggested that the list of reasons for reiteration shown in § 711.108(a) should also include strong public opposition to the selected plan.

Response. The suggested addition has not been made in the final rule because the concerns of the public are adequately covered within the five reasons listed. That is, the concerns of the public are obtained throughout the planning process (§ 711.11) and are used in identifying the specific problems and opportunities and in judging the significance of effects.

210. *Comment.* One commentor suggested that shortfalls in mitigation be specifically included as a reason for reiteration in § 711.108(a)(1).

Response. This has not been added because mitigation is already sufficiently covered in § 711.50(g) of the final rule. The concern about insufficient mitigation would also be inherent in § 711.108(a)(5) of the final rule as a significant adverse effect.

211. *Comment.* Some commentors suggested that procedures were needed

to explain how the planning process was to be accomplished.

Response. This level of detail has not been included because it is considered inappropriate for the P&S. Procedures are being considered as part of the ongoing work of WRC.

212. *Comment.* One commentor suggested that the term assessment was confusing because it was inconsistent with the CEQ definition.

Response. The term assessment in the P&S is used to mean an act or process. It should not be confused with the term "Environmental Assessment" in the CEQ regulations, 40 CFR 1508.9, which is defined as a concise public document.

213. *Comment.* One commentor pointed out that the correct technical term is "iterate" instead of "reiterate."

Response. The term "iterate" has been used in the final rule. However, either term is correct.

214. *Comment.* One commentor suggested that nonstructural methods for flood control should be considered prior to structural methods.

Response. This requirement has not been added to the final rule. A primary thrust of the P&S is to explore a wide range of alternatives to address the problems and opportunities. The order in which they are considered is immaterial from the standpoint of the P&S.

215. *Comment.* One commentor suggested that each major reservoir should be developed to its maximum potential.

Response. This requirement or encouragement is not included in the final rule. However, it is recognized that as a part of the planning process, consideration can be given to the opportunity for additional development if the potential exists.

5. Principles For Water and Related Land Resources Planning-Level C

Introduction

Purpose and Scope

These Principles establish uniform requirements to be followed by Federal agencies in formulating and evaluating alternative plans for Level C Implementation Studies.

Level C Implementation Studies are defined as program or project feasibility studies generally undertaken by a single Federal agency and which are expected to result in project authorization, funding, and implementation. These studies are conducted in response to findings and conclusions identified in assessments and regional and river basin studies, or to specific national, regional, State or local problems and opportunities.

These Principles establish the basic process to be followed by the Federal agencies and specify how each phase of the planning process is to be performed.

The accounts established by these Principles encompass and are consistent with the concept of human environment as used in the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321, *et seq.*) and the appropriate portions of the NEPA regulations established by the Council on Environmental Quality (CEQ) in 40 CFR Parts 1500-1508. The national objectives established by these Principles incorporate only those aspects of the total human environment that contribute to national economic development and enhancement of ecological, cultural, and aesthetic attributes of significant natural and cultural resources.

Authority

These Principles are established pursuant to the Water Resources Planning Act of 1965 (Pub. L. 89-80), as amended (42 U.S.C. 1962a-2). These Principles supersede the *Principles for Planning Water and Related Land Resources*, 38 FR 24781-24788, September 10, 1973, and revisions in 44 FR 72978-72980, December 14, 1979, as they relate to Level C planning.

General Planning Considerations

Federal-State Relationship in Planning

The responsible Federal planning agency is to contact the Governor or designated agency for each affected State before initiating a study and enter into agreements as are appropriate to carry out a coordinated planning effort.

The State agency or agencies responsible for water planning are to be provided with appropriate opportunities to participate in defining the problems and opportunities, in scoping the study, and in review and consultation.

General Public Participation

Interested and affected agencies, groups, and individuals are to be provided opportunities to participate throughout the planning process. The responsible Federal planning agency is to contact and solicit participation of: Other Federal agencies; appropriate regional, State, and local agencies; national, regional, and local groups; other appropriate groups such as affected Indian tribes; and individuals. A coordinated public participation program should be established with willing agencies and groups.

Review and Consultation

Review and consultation with interested and affected agencies, groups,

and individuals are required in the planning process. Reviews are to be consistent with the requirements of the CEQ NEPA regulations (40 CFR Parts 1500-1508). The planning process described in these Principles and the CEQ NEPA regulations are complementary.

Interdisciplinary Planning

An interdisciplinary approach is to be used in planning to ensure the integrated use of the natural and social sciences and the environmental design arts. The disciplines of the planners are to be appropriate to the scope and issues identified in the scoping process.

Agency Decisionmaking

Decisionmaking is a dynamic and iterative process that leads to selection of a recommended plan. Decisionmaking begins at the field level and occurs at different levels through subsequent reviews and necessary approvals as required by the agency until it reaches the level having authority to approve the project (final level). The individual in the responsible planning agency making the decisions at each level is referred to as the "agency decisionmaker."

Scoping

Planning is to include an early and open process termed "scoping" to identify both the likely significant issues to be addressed and the range of those issues. The agency is to begin scoping as soon as practicable after a decision to begin planning and prior to completing the inventory. The scoping process includes affected Federal, State, and local agencies and other interested groups or persons. Scoping is to be used as appropriate throughout planning to ensure that all significant decisionmaking factors are addressed and that unneeded and extraneous studies are not undertaken.

Forecasting

Formulation and evaluation of alternative plans are to be based on the most likely conditions expected to exist in the future with and without the plan. The without-plan condition is the condition expected to prevail if no action is taken. The with-plan condition is the condition expected to prevail with the particular plan under consideration.

Prices

Relative price relationships for outputs and inputs prevailing during or immediately preceding the period of planning are generally to be used to represent the price relationships expected over the period of analysis, unless specific considerations indicate

real exchange values are expected to change.

The general level of prices for outputs and inputs prevailing during or immediately preceding the period of planning is to be used for the entire period of analysis. Deviation is permitted only to the extent that specific price changes reflecting changes in real values need not be accompanied by an offsetting adjustment of other prices.

Discount Rate

Discounting is to be used to convert future monetary values to present values.

Period of Analysis

The period of analysis is to be the same for each alternative plan.

Risk and Uncertainty—Sensitivity Analysis

Plans and their effects are to be examined to determine the uncertainty inherent in the data or various assumptions of future economic, demographic, social, attitudinal, environmental, and technological trends.

The planner's primary role in dealing with risk and uncertainty is to identify the areas of sensitivity and describe them clearly so that decisions can be made with knowledge of the degree of reliability of available information.

Documentation

Planning studies are to be documented in a clear, concise manner that explains the basic decisions that were made and the reasons for them.

National Objectives

Two coequal national objectives provide the basis for water and related land resources planning. These objectives are protection and enhancement of national economic development (NED) and protection and enhancement of environmental quality (EQ), as defined below.

Water and related land resource plans are to be formulated to alleviate problems and take advantage of opportunities that occur at the national, regional, State, and local levels in ways that contribute to the NED and EQ objectives.

Contributions to national economic development are increases in the value of the national output of goods and services.

Contributions to environmental quality are favorable changes in the ecological, cultural, and aesthetic attributes of natural and cultural resources that sustain and enrich human life.

The Without-Plan Condition

An inventory is to be made to determine the quantity and quality of water and related land resources of the planning area and to identify opportunities for protection and enhancement of those resources. The inventory is to include data appropriate to the identified problems and opportunities, as determined by scoping, and the potential for formulating and evaluating alternative plans. The inventory does not necessarily include an exhaustive listing of resources of the area. This inventory is to describe the existing conditions and shall be the baseline for forecasting with- and without-plan conditions.

An analysis is to be made of both existing and forecasted significant economic, ecological, cultural, aesthetic, and social conditions without any of the alternative plans. This without-plan condition is to be used for evaluating the effects of each of the alternative plans.

Alternative Plans

General

An alternative plan consists of a system of structural and/or nonstructural measures, strategies, or programs formulated to alleviate specific problems or take advantage of specific opportunities associated with water and related land resources in the planning area.

The various alternative plans are to be significantly differentiated from each other in terms of their effects on the NED and EQ objectives.

Alternative plans are not to be limited to those the Federal planning agency could implement directly under current authorities.

Alternative plans are either: To be in compliance with existing statutes, administrative regulations, and established common law; or to propose necessary changes in such statutes, regulations, or common law.

Water conservation is to be fully integrated into plan formulation as a means of achieving NED and EQ objectives.

Nonstructural measures are to be considered for all problems and opportunities.

Consideration is to be given to mitigation of the adverse effects of each alternative plan.

Other existing water and related land resources plans, such as State water resources plans, are to be considered as alternative plans if within the scope of the planning effort.

Formulation

Alternative plans are to be formulated in a systematic manner in accordance with the process outlined in Summary of the Planning Process.

Candidate Plans

Alternative plans that could be selected are identified as the candidate plans. It is from these candidate plans that the recommended plan is selected for approval and implementation or a decision is made to take no action.

Required Alternative Plans

Alternative plans are to include: A national economic development plan, an environmental quality plan, and a primarily nonstructural plan, except as noted below. These plans are required to ensure that reasonable consideration is given to the widest practical range of alternative plans. The concept of a practical alternative plan means that the NED or EQ plan may include elements that address the other objective. It is recognized that the primarily nonstructural plan may, in some cases, be the same as the NED or EQ plan, in which case it should be so designated.

A plan that is judged to reasonably maximize net contributions to the NED objective is to be included as one alternative, if possible.

A plan that is judged to reasonably maximize net contributions to the EQ objective is to be included as one alternative, if possible.

A "primarily nonstructural" plan is to be formulated and included as a candidate plan whenever structural project or program alternatives are considered.

Other Alternative Plans

Other alternative plans are to be formulated to adequately explore opportunities to contribute to various mixes of the objectives.

Additional alternative plans may be formulated to achieve specified beneficial effects for human life, health, and safety as long as they do not unreasonably reduce net beneficial effects to the NED and EQ objectives of the plans identified above, or to achieve other specified beneficial effects outside the NED and EQ objectives as specifically directed by the Secretary of a Department or head of an independent agency.

Accounts

Four accounts are to be used to organize information on the effects of candidate plans. These accounts are: National economic development (NED), environmental quality (EQ), regional economic development (RED), and other

social effects (OSE). These four accounts encompass all significant effects of a plan on the human environment as required by the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321, *et seq.*). They also encompass social well-being as required by Section 122 of the Flood Control Act of 1970 (Pub. L. 91-611, 84 Stat. 1823). Each account shows particular aspects of effects on the human environment. The EQ account shows effects on ecological, cultural, and aesthetic attributes of significant natural and cultural resources. The OSE account shows urban and community impacts and effects on life, health, and safety. The NED account shows effects on the national economy. The RED account shows the regional incidence of NED effects, income transfers, and employment effects. Effects in the NED and EQ accounts are to be mutually exclusive.

Displays

Displays are graphs, tables, drawings, photographs, summary statements, and other graphics in a format that facilitates the analysis and comparison of alternative plans. Concise, understandable displays are needed during the planning process and to provide documentation in compliance with NEPA.

Cost Allocation

The need for cost allocation stems from pricing and cost-sharing policies that vary among purposes. Purposes are defined in either generic or specific authorizing statutes. Cost allocation is the process of apportioning financial costs among purposes served by a plan. Costs are to be allocated only to purposes for which participants in plan implementation have cost-sharing authority unless the plan proposes a change in cost-sharing policy. Cost allocation among purposes and the apportionment of cost shares to Federal and non-Federal public and private interests are necessary for preparation of RED and OSE accounts.

Financial costs are implementation outlays plus transfer payments such as replacement housing assistance payments as specified in 42 U.S.C. 4623 and 4624.

Financial costs are to be allocated to those authorized purposes intentionally served by a plan. By definition, purposes do not include external economies and use of otherwise unemployed or underemployed labor resources. All purposes are to be treated comparably.

Plan Selection*General*

The planning process leads to the identification of alternative plans that could be recommended or selected. These plans are referred to as candidate plans. The culmination of the planning process is the selection of the recommended plan from among the candidate plans, or the decision to take no action.

Net Beneficial Effects Rule

A recommended plan (when considered on the basis of the with-plan versus without-plan comparison) must have combined beneficial NED and EQ effects that outweigh combined adverse NED and EQ effects. For example, a plan lacking net NED benefits may be recommended if net EQ beneficial effects are sufficiently large, even though EQ effects are not stated in monetary terms.

The Secretary of a Department or head of an independent agency may make an exception to the net beneficial effects rule in accordance with the rules promulgated by the Secretary of the Department or the head of the independent agency, if circumstances warrant such exception. The reasons for granting an exception are to be given and appropriately documented.

Summary of the Planning Process

The planning process consists of the following major steps:

- (1) Specification of the water and related land resources problems and opportunities (relevant to the planning setting) associated with the NED and EQ objectives.
- (2) Inventory, forecast, and analysis of water and related land resource conditions within the planning area relevant to the identified problems and opportunities.
- (3) Formulation of alternative plans.
- (4) Evaluation of the effects of the alternative plans.
- (5) Comparison of alternative plans.
- (6) Selection of a recommended plan based upon the comparison of alternative plans.

Plan formulation is a dynamic process with various steps that should be iterated one or more times. This iteration process, which may occur at any step, may sharpen the planning focus or change its emphasis as new data are obtained or as the specification of problems or opportunities changes or becomes more clearly defined.

These Principles are hereby approved: September 19, 1980.

Jimmy Carter.

6. Rule Promulgation

Accordingly, the Water Resources Council amends the Code of Federal Regulations, Title 18, Chapter VI, by adding Principles and Standards for Water and Related Land Resources Planning—Level C.

Approved: September 19, 1980.

Cecil D. Andrus,
Chairman.

Part 711 is added to read as follows:

PART 711—PRINCIPLES AND STANDARDS FOR WATER AND RELATED LAND RESOURCES PLANNING—LEVEL C

Subpart A—Introduction

Sec.

- 711.1 Purpose and scope.
711.2 Authority.
711.3 Applicability.

Subpart B—General Planning Considerations

- 711.10 Federal-State relationship in planning.
711.11 General public participation.
711.12 Review and consultation.
711.13 Interdisciplinary planning.
711.14 Agency decisionmaking.
711.15 Planning area.
711.16 Scoping.
711.17 Forecasting.
711.18 Prices.
711.19 Discount rate.
711.20 Period of analysis.
711.21 Risk and uncertainty—sensitivity analysis.
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Subpart C—National Objectives

- 711.30 General.
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Subpart D—The Without-Plan Condition

- 711.40 Resource conditions.
711.41 Problems and opportunities.
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Subpart E—Alternative Plans

- 711.50 General.
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Subpart F—Accounts

- 711.60 General.
711.61 National economic development account.
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711.63 Regional economic development account.
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Subpart G—Displays

- 711.70 General.
711.71 Content and format.

Subpart H—Cost Allocation

- 711.80 General.
711.81 Definitions.
711.82 Cost allocation standard.
711.83 Allocation of constituent cost.

Subpart I—Plan Selection

- 711.90 General.
711.91 Selection.
711.92 Net beneficial effects rule.

Subpart J—Summary of the Planning Process

- 711.100 Introduction.
711.101 Major steps.
711.102 Specification of the problems and opportunities associated with the NED and EQ objectives.
711.103 Inventory and forecast water and related land resource conditions within the planning area.
711.104 Formulation of alternative plans.
711.105 Evaluation of effects.
711.106 Comparison of alternative plans.
711.107 Plan selection.
711.108 Iteration.

Authority: Sec. 103 and 402, Pub. L. 89-80, 79 Stat. 245 (42 U.S.C. 1962a-2 and d-1).

Subpart A—Introduction**§ 711.1 Purpose and scope.**

(a) These Principles and Standards establish uniform requirements to be followed by Federal agencies in formulating and evaluating alternative plans for Level C Implementation Studies. They also provide the basic policy for Level C Procedures included or to be included as Parts 712 through 716 of this chapter.

(b) Level C Implementation Studies are defined as program or project feasibility studies generally undertaken by a single Federal agency and which are expected to result in project authorization, funding, and implementation. These studies are conducted in response to findings and conclusions identified in assessments and regional and river basin studies, or to specific national, regional, State, or local problems and opportunities. Studies for the following agency activities are explicitly covered:

- (1) Corps of Engineers (Civil Works) water resources plans.
- (2) Water and Power Resources Service water resources plans.
- (3) Tennessee Valley Authority water resources plans.
- (4) Soil Conservation Service water and related land resources plans.
- (5) National Park Service, Heritage Conservation and Recreation Service, and Forest Service water-oriented National Recreation Areas (NRA).
- (6) Forest Service and National Park Service wild, scenic, and recreational rivers.
- (7) Fish and Wildlife Service Federal waterfowl refuge plans.

(c) These Principles and Standards establish the basic process to be followed by the Federal agencies and specify how each phase of the planning process is to be performed.

(d) The accounts established by these Principles and Standards encompass and are consistent with the concept of human environment as used in the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321, *et seq.*) and the appropriate portions of the NEPA regulations established by the Council on Environmental Quality (CEQ) in 40 CFR Parts 1500-1508. The national objectives established by these Principles and Standards incorporate only those aspects of the total human environment that contribute to national economic development and enhancement of ecological, cultural, and aesthetic attributes of significant natural and cultural resources. Other potentially significant impacts on the human environment of plans formulated under these Principles and Standards that are not displayed in the accounts for these two objectives will be displayed in the Other Social Effects account (Subpart F) and will be discussed in any environmental assessments or environmental impact statements prepared pursuant to NEPA and the CEQ NEPA regulations.

§ 711.2 Authority.

These Principles and Standards are established as rules pursuant to the Water Resources Planning Act of 1965 (Pub. L. 89-80), as amended (42 U.S.C. 1962a-2 and d-1). These Principles and Standards supersede the *Principles and Standards for Planning Water and Related Land Resources*, 38 FR 24778-24862, September 10, 1973, revisions in 39 FR 29242-29243, August 14, 1974, and revisions in 44 FR 72978-72990, December 14, 1979, as they relate to Level C planning.

§ 711.3 Applicability.

(a) These Principles and Standards are applicable to studies for—

- (1) Plans that may be approved by agency administrators;
- (2) Plans requiring Congressional authorization; and
- (3) Plans authorized on or after October 25, 1973, that are not yet being implemented or under construction and for which agencies currently prepare postauthorization planning documents. Postauthorization studies for plans authorized prior to October 25, 1973, are exempt from complying with these Principles and Standards except—
 - (i) Where the Secretary of a Department or head of an independent agency requires compliance; or

(ii) Where the plan is resubmitted to Congress for authorization.

(b) For the purpose of this part, a plan is considered as "being implemented or under construction" when funds have been appropriated by the Congress or budgeted by the President for land acquisition or physical construction activity. Plans for which postauthorization planning documents are not required shall be considered as being implemented or under construction when authorized for implementation or construction.

(c) The Secretaries of Departments and heads of independent agencies have the discretion to review those plans not being implemented or under construction and may, under their discretionary authority, wholly exempt the studies for a plan from complying with these Principles and Standards, or partially exempt such studies and direct expedited additional planning to meet specific requirements. This discretionary authority may not be exercised after July 31, 1982. When this discretionary authority is exercised, the decision and reasons for it are to be recorded in the appropriate planning document.

(1) This discretionary authority applies to those studies for plans not yet authorized for which preauthorization planning is now complete or will be complete by the end of Fiscal Year 1981, and to studies for those authorized plans requiring postauthorization planning if such studies are now complete or will be complete by the end of Fiscal Year 1981. For purposes of these Principles and Standards, preauthorization or postauthorization studies shall be considered complete when the appropriate planning documents have been approved by the responsible agency's field office.

(2) Discretionary authority to exempt studies from these Principles and Standards is provided to prevent undue loss of time or expenditure of public funds in those cases in which the Secretary of a Department or head of an independent agency judges additional planning to be unnecessary.

(d) The administrator of each Federal or Federally assisted program covered by § 711.1(b) is responsible for applying these Principles and Standards. The responsible agency administrator is to adopt these Principles and Standards within 30 days after the date of their publication in the *Federal Register*.

Subpart B—General Planning Considerations

§ 711.10. Federal-State relationship in planning.

(a) The responsible Federal planning agency is to contact the Governor or designated agency for each affected State before initiating a study and enter into agreements as are appropriate to carry out a coordinated planning effort.

(b) The State agency or agencies responsible for water planning are to be provided with appropriate opportunities to participate in defining the problems and opportunities, in scoping the study, and in review and consultation.

§ 711.11 General public participation.

(a) Interested and affected agencies, groups, and individuals are to be provided opportunities to participate throughout the planning process. The responsible Federal planning agency is to contact and solicit participation of: Other Federal agencies; appropriate regional, State, and local agencies; national, regional, and local groups; other appropriate groups such as affected Indian tribes; and individuals. A coordinated public participation program should be established with willing agencies and groups.

(b) Public participation may be accomplished by appropriate means such as—

(1) Soliciting public opinion early in the planning process to assist in scoping the planning effort;

(2) Encouraging periodic expressions of public views and recording and considering them;

(3) Holding public meetings early in the planning process to advise the public of the nature of the study, to open lines of communication, to listen to the needs and views of the public, and to identify interested individuals and agencies;

(4) Holding additional public meetings as appropriate throughout the planning process; and

(5) Making pertinent plans, reports, data analysis, interpretations, and other information available for public inspection.

(c) Efforts to secure public participation should be pursued through public hearings, public meetings, workshops, information programs, citizen committees, and other appropriate means.

§ 711.12 Review and consultation.

Review and consultation with interested and affected agencies, groups, and individuals are required in the planning process. Reviews are to be consistent with the requirements of the

CEQ NEPA regulations (40 CFR Parts 1500-1508). The planning process described in these Principles and Standards and the CEQ NEPA regulations are complementary.

§ 711.13 Interdisciplinary planning.

An interdisciplinary approach is to be used in planning to ensure the integrated use of the natural and social sciences and the environmental design arts. The disciplines of the planners are to be appropriate to the scope and issues identified in the scoping process (see § 711.16). The planning agency is to supplement its available expertise, as necessary, with knowledgeable experts from cooperating agencies, universities, consultants, etc.

§ 711.14 Agency decisionmaking.

(a) Decisionmaking is a dynamic and iterative process that leads to selection of a recommended plan. Decisionmaking begins at the field level and occurs at different levels through subsequent reviews and necessary approvals as required by the agency until it reaches the level having authority to approve the project (final level). The individual in the responsible planning agency making the decisions at each level is referred to as the "agency decisionmaker." The identity of the agency decisionmaker depends upon the level of project development and review. For projects requiring Congressional authorization, the final agency decisionmaker is the Secretary of the Department or head of the independent agency. For projects that do not require Congressional approval, the final decisionmaker is the Secretary of the Department, head of the agency, or such other official as appropriately delegated.

(b) Within the context of these Principles and Standards, the decisionmaker is responsible for making the many "judgments" referred to as well as determining what is "reasonable," "appropriate," etc.

§ 711.15 Planning area.

The planning area is a geographic space with an identified boundary that includes:

- (a) The area identified in the study's authorizing document;
- (b) The locations of resources included in the study's identified problems and opportunities;
- (c) The locations of alternative plans, often called "project areas;" and
- (d) The locations of resources that would be directly, indirectly, or cumulatively affected by alternative plans, often called the "affected area."

§ 711.16 Scoping.

(a) Planning is to include an early and open process termed "scoping" to identify both the likely significant issues to be addressed and the range of those issues. The agency is to begin scoping as soon as practicable after a decision to begin planning and prior to completing the inventory. The scoping process includes affected Federal, State, and local agencies and other interested groups or persons. Scoping is to be used as appropriate throughout planning to ensure that all significant decisionmaking factors are addressed and that unneeded and extraneous studies are not undertaken.

(b) As part of the scoping process the agency is to:

- (1) Determine the extent to which the likely significant issues are to be analyzed.
- (2) Define the planning area based on the problems and opportunities and the geographic areas likely to be affected by alternative plans.
- (3) Identify and eliminate from detailed study any issues that are not significant or that have been adequately covered by prior study. However, important issues, even though covered by other studies, are still to be considered in the analysis.
- (4) Identify any current or future planning that is related to but not part of the study under consideration.
- (5) Identify review and consultation requirements so that cooperating agencies (as defined in 40 CFR 1508.5) may prepare required analyses and studies concurrently with the study under consideration.

(6) Indicate the tentative planning and decisionmaking schedule.

(7) Hold an early scoping meeting or meetings. The scoping meetings may be integrated with other early planning meetings.

(8) Repeat the above steps if there is a substantial change in the planning emphasis or if new circumstances or information make the repetition necessary.

(c) Scoping may be used to combine or narrow the number of problems, opportunities, measures, plans, effects, etc., under consideration so that meaningful and efficient analysis and choice among alternative plans can occur.

(d) Scoping is to include consideration of ground water problems and opportunities, including conjunctive use of ground and surface water, and instream flow needs. Appropriate consideration is to be given to existing water rights in scoping the planning effort.

§ 711.17 Forecasting.

(a) Formulation and evaluation of alternative plans are to be based on the most likely conditions expected to exist in the future with and without the plan. The without-plan condition is the condition expected to prevail if no action is taken. The with-plan condition is the condition expected to prevail with the particular plan under consideration.

(b) The forecasts of with- and without-plan conditions shall use the inventory of existing conditions as the baseline, and are to be based on considerations of the following (including direct, indirect, and cumulative effects)—

- (1) The national/regional projections of income, employment, output, and population prepared and published by or for the Water Resources Council;
- (2) Other aggregate projections such as exports, land use trends, and amounts of goods and services likely to be demanded;
- (3) Expected environmental conditions; and
- (4) Specific, authoritative projections for small areas.

Appropriate national and regional projections should be used as an underlying forecasting framework, and inconsistencies therewith, while permissible, should be documented and justified.

(c) National projections used in planning are to be based on a full employment economy. In this context, assumption of a full employment economy establishes a rationale for general use of market prices in estimating economic benefits and costs, but does not preclude consideration of special analyses of regions with high rates of unemployment and underemployment in calculating benefits from using unemployed and underemployed labor resources.

(d) National and State environmental and health standards and regulations are to be recognized and appropriately considered in scoping the planning effort. Standards and regulations concerning water quality, air quality, public health, wetlands protection, and floodplain management shall be given specific consideration in forecasting the without-plan condition.

(e) Other plans that have been adopted for the planning area and other current planning efforts are to be considered.

(f) Forecasts are to be made for selected years over the period of analysis to indicate how changes in economic conditions and environmental resources are likely to have an impact on problems and opportunities.

(g) Environmental forecasts are to be identified in terms of specific indicators of the quantity and quality of natural and cultural resources.

§ 711.18 Prices.

(a) Relative price relationships for outputs and inputs prevailing during or immediately preceding the period of planning are generally to be used to represent the price relationships expected over the period of analysis, unless specific considerations indicate real exchange values are expected to change.

(b) The general level of prices for outputs and inputs prevailing during or immediately preceding the period of planning is to be used for the entire period of analysis. Deviation is permitted only to the extent that specific price changes reflecting changes in real values need not be accompanied by an offsetting adjustment of other prices.

§ 711.19 Discount rate.

Discounting is to be used to convert future monetary values to present values. The discount rate to be used for the formulation and economic evaluation of plans for water and related land resources will be published by the Water Resources Council at the beginning of each fiscal year. The rate will be determined in accordance with § 704.39 of this chapter. This standard is affirmed by Section 80 of the Water Resources Development Act of 1974, Pub. L. 93-251.

§ 711.20 Period of analysis.

(a) The period of analysis is to be the same for each alternative plan. The period of analysis is to be the time required for implementation plus the lesser of—

(1) The period of time over which any alternative plan would serve a useful purpose; or

(2) A period not to exceed 100 years.

(b) Appropriate consideration is to be given to environmental factors that may extend beyond the period of analysis.

§ 711.21 Risk and uncertainty—sensitivity analysis.

(a) Plans and their effects are to be examined to determine the uncertainty inherent in the data or various assumptions of future economic, demographic, social, attitudinal, environmental, and technological trends. A limited number of reasonable alternative forecasts that would, if realized, appreciably affect plan design should be considered.

(b) The planner's primary role in dealing with risk and uncertainty is to identify the areas of sensitivity and describe them clearly so that decisions

can be made with knowledge of the degree of reliability of available information.

(c) Situations of *risk* are defined as those in which the potential outcomes can be described in reasonably well-known probability distributions such as the probability of particular flood events. Situations of *uncertainty* are defined as those in which potential outcomes cannot be described in objectively known probability distributions.

(d) Risk and uncertainty arise from measurement errors and from the underlying variability of complex natural, social, and economic situations. Methods of dealing with risk and uncertainty include:

(1) Collecting more detailed data to reduce measurement error.

(2) Using more refined analytic techniques.

(3) Increasing safety factors in design.

(4) Selecting measures with better known performance characteristics.

(5) Reducing the irreversible or irretrievable commitments of resources. Reducing risk and uncertainty may involve increased costs or loss of benefits. The advantages and costs of reducing risk and uncertainty are to be considered in the planning process.

§ 711.22 Documentation.

Planning studies are to be documented in a clear, concise manner that explains the basic decisions that were made and the reasons for them. The documentation should be prepared in a manner to expedite review.

Subpart C—National Objectives

§ 711.30 General.

(a) Two coequal national objectives provide the basis for water and related land resources planning. These objectives are protection and enhancement of national economic development (NED) and protection and enhancement of environmental quality (EQ), as defined in this subpart.

(b) Water and related land resource plans are to be formulated to alleviate problems and take advantage of opportunities that occur at the national, regional, State, and local levels in ways that contribute to the NED and EQ objectives.

§ 711.31 National economic development.

(a) Contributions to national economic development are increases in the value of the national output of goods and services.

(b) The NED objective for the relevant planning setting is to be stated in terms of an expressed desire to alleviate

problems and realize opportunities related to the output of goods and services or to increased economic efficiency.

(c) Each statement of a problem or opportunity is to be expressed in terms of a desired output. Example statements are—

(1) Reduce flood losses in the Red River floodplain to increase agricultural production;

(2) Reduce the cost of agricultural production in the irrigated sector of Tolland County; and

(3) Increase the value of the recreational experience at Lake Zoar.

§ 711.32 Environmental quality.

(a) Contributions to environmental quality are favorable changes in the ecological, cultural, and aesthetic attributes of natural and cultural resources that sustain and enrich human life.

(b) The EQ objective for the relevant planning setting is to be stated in terms of an expressed desire to alleviate problems and realize opportunities related to the ecological, cultural, and aesthetic attributes of natural and cultural resources.

(c) Each statement of a problem or opportunity is to be expressed in terms of a desired output. Example statements are—

(1) Stem the decline of the ecological attribute of riparian habitat in Rock River basin;

(2) Enhance the aesthetic attribute of the Beautiful Valley floodplain; and

(3) Maintain the cultural attribute of the Indian Winter Camp archeological site.

Subpart D—The Without-Plan Condition

§ 711.40 Resource conditions.

(a) An inventory is to be made to determine the quantity and quality of water and related land resources of the planning area and to identify opportunities for protection and enhancement of those resources. The inventory is to include data appropriate to the identified problems and opportunities, as determined by scoping, and the potential for formulating and evaluating alternative plans. The inventory does not necessarily include an exhaustive listing of resources of the area. This inventory is to describe the existing conditions and shall be the baseline for forecasting with- and without-plan conditions.

(b) An analysis is to be made of both existing and forecasted significant economic, ecological, cultural, aesthetic, and social conditions without any of the

alternative plans. This without-plan condition is to be used for evaluating the effects of each of the alternative plans. The without-plan condition must be the most likely future condition without a plan and must be forecast in accordance with § 711.17. The basis for projecting changes in the existing condition must be stated. Projections must not be based on speculation or unsupported subjective judgments.

§ 711.41 Problems and opportunities.

(a) Inventorying and forecasting are to include an analysis of the identified problems and opportunities and their implications on the planning setting. This analysis is to be used to redefine the specific problems and opportunities associated with the NED and EQ objectives.

(b) Based on this analysis, an appraisal is to be made of the potential for alleviating the problems and realizing the opportunities. The appraisal provides guidance on the possible scope and magnitude of actions needed to address each problem or opportunity. This appraisal should identify possibilities for management, development, preservation, and other opportunities for action. Resource inventories and forecasts may suggest additional problems or opportunities. These possibilities will indicate the resource capabilities relative to specific commodities, services, or environmental amenities desired by the public. By proper selection of these development or management possibilities, alternatives may be formulated for each problem or opportunity associated with NED and/or EQ objectives.

§ 711.42 Constraints.

Constraints to the attainment of the desired levels of national output of goods and services or environmental amenities for the planned period are to be identified. Constraints may include resource limitations, competitive use of the resources, legislation prohibiting desired use or development, or other limitations.

Subpart E—Alternative Plans

§ 711.50 General.

(a) An alternative plan consists of a system of structural and/or nonstructural measures, strategies, or programs formulated to alleviate specific problems or take advantage of specific opportunities associated with water and related land resources in the planning area.

(b) The various alternative plans are to be significantly differentiated from

each other in terms of their effects on the NED and EQ objectives.

(c) Alternative plans are not to be limited to those the Federal planning agency could implement directly under current authorities. Plans that could be implemented under the authorities of other Federal agencies, State and local entities, and nongovernment interests are also to be considered. Therefore, a cooperative role of local, State, regional, Federal, and nongovernment interests in implementing alternative plans is encouraged.

(d) Alternative plans are either—

(1) To be in compliance with existing statutes, administrative regulations, and established common law; or

(2) To propose necessary changes in such statutes, regulations, or common law.

(e) Water conservation is to be fully integrated into plan formulation as a means of achieving NED and EQ objectives. Water conservation consists of actions that will—

(1) Reduce the demand for water;

(2) Improve efficiency in use and reduce losses and waste; and/or

(3) Improve land management practices to conserve water.

A clear contrast is drawn between the above conservation elements and storage facilities. A range of measures that can, over time, balance water demand for various purposes with water availability is to be considered.

(f) Nonstructural measures are to be considered for all problems and opportunities such as those related to water supply, flood damage, power, transportation, recreation, fish and wildlife, etc.

(1) Nonstructural measures are complete or partial alternatives to traditional structural measures for addressing water resources problems and opportunities. Nonstructural measures include modifications in public policy, management practice, regulatory policy, and pricing policy.

(2) A nonstructural measure or measures may in some cases offer a complete alternative to a traditional structural measure or measures. In other cases, nonstructural measures may be combined with fewer or smaller traditional structural measures to produce a complete alternative plan.

(g) Consideration is to be given to mitigation (as defined in 40 CFR 1508.20) of the adverse effects of each alternative plan. Appropriate mitigation is to be included where suitable as determined by the agency decisionmaker. Mitigation measures included are to be planned for at least concurrent and proportionate implementation with other major project

features, except where such concurrent and proportionate mitigation is physically impossible. In the latter case, the reasons for deviation from this rule are to be presented in the planning report, and mitigation is to be planned for the earliest possible implementation.

(1) Mitigation for fish and wildlife and their habitat is to be planned in coordination with Federal and State fish and wildlife agencies in accordance with the Fish and Wildlife Coordination Act of 1958 (16 U.S.C. 661-664).

(2) Mitigation for other adverse effects, as reflected in any of the accounts (Subpart F), is to be planned in accordance with applicable laws and as determined by the agency decisionmaker.

(h) Other existing water and related land resources plans, such as State water resources plans, are to be considered as alternative plans if within the scope of the planning effort.

(i) Various schedules for implementing alternative plans are to be considered to identify the schedule that would result in the most desirable mix of effects on the national objectives.

§ 711.51 Formulation.

(a) Alternative plans are to be formulated in a systematic manner in accordance with the planning process, summarized in Subpart J.

(b) In the formulation of alternative plans, an effort is to be made to include only increments that provide combined beneficial NED and EQ effects outweighing combined adverse NED and EQ effects or, that achieve specified beneficial effects for human life, health, or safety without unreasonably reducing net beneficial effects to the NED and EQ objectives, unless the Secretary of a Department or head of an independent agency specifically directs formulation in one or more plans to achieve other desirable effects outside the NED and EQ objectives.

(c) Alternative plans are to be formulated in consideration of four tests: Completeness; effectiveness; efficiency; and acceptability.

(1) *Completeness* is the extent to which a given alternative plan provides and accounts for all necessary investments or other actions to ensure the realization of the planned effects. This may require relating the plan to other types of public or private plans if the other plans are crucial to realization of the contributions to the objectives. Beneficial and adverse effects must be treated comparably when relating water and land resources plans to other plans.

(2) *Effectiveness* is the extent to which an alternative plan alleviates the

specified problems and achieves the specified opportunities.

(3) *Efficiency* is the extent to which an alternative plan is the most cost effective means of alleviating the specified problems and realizing the specified opportunities.

(4) *Acceptability* is the workability and viability of the alternative plan with respect to acceptance by the public and compatibility with existing laws, regulations, and public policies.

§ 711.52 Candidate plans.

The previous formulation steps (§ 711.51), including application of the four tests, should begin to effectively identify the alternative plans that are to be considered as candidates for a recommended plan. The alternative plans that could be selected are identified as the candidate plans. It is from these candidate plans that the recommended plan is selected for approval and implementation or a decision is made to take no action. The candidate plans include required alternative plans specified in § 711.53 (i.e., NED, EQ, nonstructural) as well as other appropriate alternative plans (see § 711.54).

§ 711.53 Required alternative plans.

Alternative plans are to include: A national economic development plan, an environmental quality plan, and a primarily nonstructural plan, except as noted in paragraphs (a) and (b) of this section. These plans are required to ensure that reasonable consideration is given to the widest practical range of alternative plans. The concept of a practical alternative plan means that the NED or EQ plan may include elements that address the other objective. It is recognized that the primarily nonstructural plan may, in some cases, be the same as the NED or EQ plan, in which case it should be so designated.

(a) *National economic development plan.* A plan that is judged to reasonably maximize net contributions to the NED objective is to be included as one alternative, if possible. This plan is to be systematically formulated to alleviate the specific problems and take advantage of the specific opportunities that reflect the NED objective for the relevant planning area. If no plan with a net contribution to the NED objective can be formulated, this finding is to be documented.

(b) *Environmental quality plan.* (1) A plan that is judged to reasonably maximize net contributions to the EQ objective is to be included as one alternative, if possible. This plan is to be systematically formulated to alleviate the specific problems and take

advantage of the specific opportunities that reflect the EQ objective for the relevant planning area. If no plan with a net contribution to the EQ objective can be formulated, this finding is to be documented.

(2) In the formulation of alternatives to maximize net contributions to the EQ objective, it must be recognized that if the without-plan condition forecasts a reduced EQ value, positive action, such as zoning changes or public land acquisition, may be necessary to ensure realization of the EQ objective.

(c) *Primarily nonstructural plan.* (1) A "primarily nonstructural" plan is to be formulated and included as a candidate plan whenever structural project or program alternatives are considered.

(2) A primarily nonstructural plan is the plan that makes minimum use of traditional structural measures in addressing water resources problems and opportunities in ways that contribute to the NED and EQ objectives.

§ 711.54 Other alternative plans.

(a) Other alternative plans are to be formulated to adequately explore opportunities to contribute to various mixes of the objectives.

(b) Additional alternative plans may be formulated to achieve specified beneficial effects for human life, health, and safety as long as they do not unreasonably reduce net beneficial effects to the NED and EQ objectives of the plans identified in § 711.53 and § 711.54(a), or to achieve other specified beneficial effects outside the NED and EQ objectives as specifically directed by the Secretary of a Department or head of an independent agency.

(c) The number and variety of alternative plans will be governed by—

(1) The problems and opportunities associated with the water and related land resources in the study area;

(2) The overall resource capabilities of the study area;

(3) The available alternative measures; and

(4) Preferences of and conflicts among different segments of the public regarding the tradeoff between NED and EQ objectives.

Subpart F—Accounts

§ 711.60 General.

(a) Four accounts are to be used to organize information on the effects of candidate plans (see § 711.52). These accounts are: national economic development (NED), environmental quality (EQ), regional economic development (RED), and other social effects (OSE). These four accounts

encompass all significant effects of a plan on the human environment as required by the National Environmental Policy Act of 1969 (NEPA)(42 U.S.C. 4321 *et seq.*). They also encompass social well-being as required by Section 122 of the Flood Control Act of 1970 (Pub. L. 91-611, 84 Stat. 1823). Each account shows particular aspects of effects on the human environment. The EQ account shows effects on ecological, cultural, and aesthetic attributes of significant natural and cultural resources. The OSE account shows urban and community impacts and effects on life, health, and safety. The NED account shows effects on the national economy. The RED account shows the regional incidence of NED effects, income transfers, and employment effects.

(b) Effects in the NED and EQ accounts are to be mutually exclusive. This separation is essential for a valid application of the net beneficial effects rule (see § 711.92).

(c) The same effect may be shown only once within a given account except that the OSE account may show the incidence of an effect from more than one point of view. Beyond this exception, claiming the same benefit, cost, change in a resource attribute, or effect more than once in a given account would constitute double counting, which is not permitted.

(d) Relationships between short-term use of the human environment and the maintenance and enhancement of long-term productivity are to be identified in the appropriate account or accounts. Any irreversible or irretrievable commitments of resources are also to be identified in the appropriate account or accounts.

(e) Effects on the values and attributes of ground water and instream flow are to be reflected in the accounts.

(f) Effects of an alternative plan in each account are the differences between the forecasted conditions with the plan and forecasted conditions without the plan.

(g) Effects in the NED account are to be expressed in monetary units. Effects in the EQ account are to be expressed in appropriate numeric units or non-numeric terms. Effects in the RED and OSE accounts are to be expressed in monetary units, other numeric units, or non-numeric terms.

(h) Monetary values in the accounts are to be expressed in average annual equivalents by appropriate discounting and annualizing techniques using the applicable discount rate (see § 711.19).

(i) Effects incident outside the United States need not be separated from the accounts.

§ 711.61 National economic development account.

(a) *General.* (1) The NED account describes that part of the NEPA human environment, as defined in 40 CFR 1508.14, that identifies beneficial and adverse effects on the economy.

(2) Beneficial effects in the NED account are increases in the economic value of the national output of goods and services. These beneficial effects include: The value of goods and services from a plan; the value of output resulting from external economies caused by a plan; and the value associated with the use of otherwise unemployed or underemployed labor resources.

(3) Adverse effects in the NED account are the opportunity costs of resources used in implementing a plan. These adverse effects include: Implementation outlays; associated costs; other direct costs; and external diseconomies.

(4) The procedures for evaluating NED effects are in Part 713 of this chapter.

(b) *Goods and services: General measurement standard.* The general measurement standard for the value of goods and services is defined as the willingness of users to pay for each increment of output from a plan. Such a value would be obtained if the "seller" of the output were able to apply a variable unit price and charge each user an individual price to capture the full value of the output to the user. Since it is not possible in most instances for the planner to measure the actual demand situation, four alternative techniques can be used to obtain an estimate of the total value of the output of a plan: Willingness to pay based on actual or simulated market price; change in net income; cost of the most likely alternative; and administratively established values.

(1) *Actual or simulated market price.* If the additional output from a plan is too small to have a significant effect on price, actual or simulated market price will closely approximate the total value of the output and may be used to estimate willingness to pay. If the additional output is expected to have a significant effect on market price and if the price cannot be estimated for each increment of the change in output, a price midway between the price expected with and without the plan may be used to estimate the total value.

(2) *Change in net income.* The value of the change in output of intermediate goods and services from a plan is measured by their total value as inputs to producers. The total value of intermediate goods or services to producers is properly measured as the increase in net income received by

producers with a plan compared to net income received without a plan. Net income is defined as the market value of producers' outputs less the market value of producers' inputs exclusive of the cost of the intermediate goods or services from a plan. Increased net income from reduced cost of maintaining a given level of output is considered a benefit since released resources will be available for production of other goods and services.

(3) *Cost of the most likely alternative.* The cost of the most likely alternative may be used to estimate NED benefits for a particular output if non-Federal entities are likely to provide a similar output in the absence of any of the alternative plans under consideration and if NED benefits cannot be estimated from market price or change in net income. This assumes, of course, that society would in fact undertake the alternative means. Estimates of benefits are to be based on the cost of the most likely alternative only if there is evidence that the alternative would be implemented. In determining the most likely alternative, the planner is to give adequate consideration to nonstructural and conservation measures as well as structural measures.

(4) *Administratively established values.* Administratively established values are values for specific goods and services explicitly set and published by the Water Resources Council (WRC). An example of administratively established values is the range of unit-day values for recreation. A value within this range of set values may be selected in situations specified in § 713.903 of this chapter.

(c) *Goods and Services: Categories.* Goods and services in the NED account are limited to the following categories:

- (1) Municipal and industrial (M & I) water supply.
- (2) Agricultural floodwater, erosion, and sedimentation.
- (3) Agricultural drainage.
- (4) Agricultural irrigation.
- (5) Urban flood damage.
- (6) Power (hydropower).
- (7) Transportation (inland navigation).
- (8) Transportation (deep draft navigation).
- (9) Recreation.
- (10) Commercial fishing.
- (11) Categories of benefits based on procedures approved by WRC.
- (12) Other categories of benefits for which procedures are documented in the planning report and which are in accordance with the general measurement standards in paragraph (b) of this section.

(d) *External economies.* (1) The external economies to be included in the NED benefit evaluation are the

uncompensated, incidental, and unintended effects of a project that increase economic efficiency by increasing the output of intermediate or final consumer goods over and above the direct outputs accounted for in the plan or project. In this sense, the pertinent external economies are "external" to the plan or project. Pertinent external economies involve a technical or physical relationship. For example, a project planned only for flood control and hydropower purposes might reduce downstream water treatment costs; this reduction in costs would be shown as an external economy in the NED account.

(2) The external economies to be included in the NED account do not include decreases in the price of products or services resulting from the plan or changes in the prices of related goods and services.

(e) *Use of otherwise unemployed or underemployed labor resources.* (1) If otherwise unemployed or underemployed labor resources are used in implementing a plan, the social cost of implementation is less than the financial cost. The opportunity cost of employing otherwise unemployed workers is conceptually equal to the value of leisure time foregone by such workers but may be assigned a zero value since there is no generally accepted procedure for measuring the value of leisure time. The opportunity cost of employing otherwise underemployed workers is equal to earnings under the without plan conditions.

(2) Conceptually, the effects of the use of unemployed or underemployed labor resources should be treated as an adjustment to the adverse effects of a plan on national economic development. Since this approach leads to difficulties in cost allocation and cost sharing calculations, the effects from the use of such labor resources are to be treated as an addition to the benefits resulting from a plan.

(3) Beneficial effects from the use of unemployed or underemployed labor resources are limited to labor employed on site in the construction or installation of a plan. This limitation reflects identification and measurement problems and the requirement that national projections are to be based on a full employment economy.

(4) WRC is to periodically publish a list of planning regions with substantial and persistent unemployment. The list is to be based on criteria approved by WRC.

(5) If the planning region has been designated as having substantial and persistent unemployment and these

labor resources will be employed or more effectively employed in installation of the plan, the net additional payments to the unemployed or underemployed labor resources are defined as a benefit.

(f) *Adverse NED effects: Measurement standards.* (1) In evaluating NED costs, resource use is broadly defined to include all aspects of the economic value of the resource. This broad definition requires consideration of the direct, indirect, private, and public uses that producers and consumers are currently making of available resources or are expected to make of them in the future.

(2) If market prices reflect the full economic value of a resource to society, they are to be used to determine NED costs. If market prices do not reflect these values, associated costs, other direct costs, and external diseconomies are to be used to account for the additional values.

(3) NED costs may be adjusted by an allowance for the salvage value of land, equipment, and facilities that would have value at the end of the period of analysis.

(g) *NED cost categories.* For convenience of measurement and analysis, NED costs are to be classified as implementation outlays, associated costs, other direct costs, and external diseconomies.

(1) *Implementation outlays.* The NED costs of implementation include the outlays incurred by the responsible Federal entity and by other Federal or non-Federal entities for implementation of the plan in accordance with sound management principles. These costs do not include transfer payments such as replacement housing assistance payments as specified in 42 U.S.C. 4623 and 4624.

(2) *Associated costs.* These are the costs in addition to implementation outlays for measures needed to achieve the benefits claimed during the period of analysis. For example, associated costs would include the cost of irrigation water supply laterals and on-farm irrigation systems.

(3) *Other direct costs.* These are the costs of resources directly required for a project or plan, but for which no financial outlays are made. For example, other direct costs would include displaced public recreational use at a project site.

(4) *External diseconomies.* These costs are uncompensated, unmitigated, off-site NED losses caused by the installation, operation, maintenance, or replacement of project or plan measures. Examples of external diseconomies include increased downstream flood

damages caused by channel modifications, dikes, or the drainage of wetlands, and increased water supply treatment costs caused by irrigation return flows.

§ 711.62 Environmental quality account.

(a) *General.* (1) The EQ account describes that part of the NEPA human environment, as defined in 40 CFR 1508.14, that identifies beneficial and adverse effects on significant EQ resources and attributes.

(2) Beneficial effects in the EQ account are favorable changes in the ecological, aesthetic, and cultural attributes of natural and cultural resources.

(3) Adverse effects in the EQ account are unfavorable changes in the ecological, aesthetic, and cultural attributes of natural and cultural resources.

(4) The net effect on environmental quality is determined by an appraisal of the EQ beneficial and adverse effects.

(5) The procedures for evaluating effects included in the EQ account are in Part 714 of this chapter.

(b) *Significant EQ resources and attributes.* (1) An EQ resource is a natural or cultural form, process, system, or other phenomenon that—

(i) Is related to land, water, atmosphere, plants, animals, or historic or cultural objects, sites, buildings, structures, or districts; and

(ii) Has one or more EQ attributes (ecological, cultural, aesthetic).

(2) EQ attributes are the ecological, cultural, and aesthetic properties of natural and cultural resources that sustain and enrich human life.

(i) *Ecological attributes* are components of the environment and the interactions among all its living (including people) and nonliving components that directly or indirectly sustain dynamic, diverse, viable ecosystems. In this category are functional and structural aspects of the environment, including aspects that require special consideration because of their unusual characteristics.

(ii) *Cultural attributes* are evidence of past and present habitation that can be used to reconstruct or preserve human lifeways. Included in this category are structures, sites, artifacts, environments, and other relevant information, and the physical contexts in which these occur.

(iii) *Aesthetic attributes* are perceptual stimuli that provide diverse and pleasant surroundings for human enjoyment and appreciation. Included in this category are sights, sounds, scents, tastes, and tactile impressions, and the interactions of these sensations, of natural and cultural resources.

(3) Significant EQ resources and attributes are identified based on institutional, public, and technical recognition. Significant means likely to have a material bearing on the decisionmaking process.

(i) Significance based on *institutional recognition* means that the importance of an EQ resource or attribute is acknowledged in the laws, adopted plans, treaties, and other policy statements of the Federal Government, of States, regional entities, or local public entities with jurisdiction in the planning area, or of private groups.

(ii) Significance based on *public recognition* means that some segment of the general public recognizes the importance of an EQ resource or attribute. Environmentally related customs and traditions are also to be considered.

(iii) Significance based on *technical recognition* means that the importance of an EQ resource or attribute is based on scientific or technical knowledge or judgment of critical resource characteristics.

(c) *Evaluation framework.* The evaluation framework specifies the ways in which changes in significant EQ resources and attributes will be measured or otherwise described. The framework consists of indicators, units, guidelines, and techniques. For each EQ attribute, one or more indicators are specified. For each indicator, a unit, guideline, and technique are specified. The framework guides the collection of information about the existing, without-plan, and with-plan conditions of significant EQ resources and attributes.

(1) An *indicator* is a characteristic of an EQ resource that serves as a direct or indirect means of measuring or otherwise describing changes in the quantity and/or quality of an EQ attribute. A *unit* is a numeric or non-numeric term in which change in an indicator is measured or otherwise described.

(i) Quantity indicators describe how much of a resource attribute is present in terms of physical size, magnitude, or dimension.

(ii) Quality indicators are characteristics that describe the degree or grade of an attribute's desirability (how good or how bad).

(2) A *guideline* is a standard, criterion, threshold, optimum, or other desirable level for an indicator that provides a basis for judging whether an effect is beneficial or adverse. Guidelines are to be based on institutional, public, or technical recognition.

(3) A *technique* is a systematic procedure for measuring or otherwise describing current and future conditions

of a specified indicator in terms of the indicator's specified unit.

(d) *Significant effects.* (1) An effect on an EQ resource occurs whenever estimates of future with- and without-plan conditions of an indicator of the resource are different.

(2) An effect is described in terms of duration, frequency, location, magnitude, and other characteristics, such as reversibility, retrievability, and the relationship to long-term productivity, where their description is relevant and useful to decisionmaking.

(3) A significant effect is identified based on institutional, public, and technical recognition.

(e) *Appraisal of significant effects.* Significant effects of alternative plans are appraised as either beneficial or adverse in terms of indicators, attributes, and net EQ effect.

(1) Significant effects are appraised as either beneficial or adverse in terms of indicators based on the following criteria:

(i) An effect is beneficial if, for a given indicator, the with-plan condition more closely approaches or attains the indicator's guideline than its without-plan condition.

(ii) An effect is adverse if, for a given indicator, the without-plan condition more closely approaches or attains the indicator's guideline than its with-plan condition.

(iii) Where the relationship between an indicator's without-plan and with-plan condition changes over the period of analysis such that an effect would be beneficial part of the time and adverse at other times, the different desirabilities over time are shown.

(2) Significant effects are appraised as either beneficial or adverse in terms of EQ attributes based on the judgment of professionals with expertise relevant to each EQ attribute. The following are considered in appraising an effect in terms of an EQ attribute:

(i) The duration, frequency, location, magnitude, and other relevant characteristics of effects on the attribute's indicators.

(ii) The previous appraisals of effects on the attribute's indicators (beneficial or adverse).

(iii) The relationships among effects on the attribute's quantity and quality characteristics, as reflected in the duration, frequency, location, magnitude, appraisal and other characteristics of effects on the attribute's indicators. For example, the acreage of a particular habitat (quantity) may be beneficially increased with an alternative plan, but the habitat's productivity (quality) could be adversely affected by human activities, such as

recreation, attracted to the area.

Conversely, an improvement in the productivity of a habitat would not necessarily be beneficial unless an adequate amount of habitat would be available.

(iv) Whether effects on the attribute or the resource would fulfill or violate a public law, executive order, or other source of institutional recognition.

(v) Whether effects on the attribute or the resource would be supported or otherwise viewed as beneficial by the public, or would be opposed or otherwise viewed as adverse by the public.

(vi) Whether or not effects on the attribute or the resource would be critical based on scientific or technical knowledge or judgment.

(vii) Other considerations that may have a material bearing on decisionmaking. Such other considerations are to be clearly defined.

(3) The net (overall) EQ effect of an alternative plan is appraised by the agency decisionmaker as "net beneficial EQ effect," "net adverse EQ effect," or "no net EQ effect" based on the following criteria:

(i) A net beneficial EQ effect occurs when, in the judgment of the agency decisionmaker, an alternative plan's combined beneficial effects on EQ resources outweigh the plan's combined adverse effects on EQ resources.

(ii) A net adverse EQ effect occurs when, in the judgment of the agency decisionmaker, an alternative plan's combined adverse effects on EQ resources outweigh the plan's combined beneficial effects on EQ resources.

(iii) No net EQ effect occurs when, in the judgment of the agency decisionmaker, an alternative plan's combined beneficial effects on EQ resources equal the plan's combined adverse effects on EQ resources.

§ 711.63 Regional economic development account.

(a) *General.* (1) The RED account registers changes in the distribution of regional economic activity that result from each alternative plan. Two measures of the effects of the plan on regional economies are used in the account: Regional income and regional employment.

(2) The regions used for RED analysis are those regions within which the plan will have particularly significant income and employment effects. Effects of a plan not occurring in the significantly affected regions are to be placed in a "rest of nation" category.

(3) Effects that cannot be satisfactorily quantified or described with available methods, data, and

information or that will not have a material bearing on the decisionmaking process may be excluded from the RED account.

(b) *Positive effects on regional economic development.*—(1) *Regional income.* The positive effects of a plan on a region's income are equal to the sum of the NED benefits that accrue to that region, plus transfers of income to the region from outside the region.

(i) *Regional incidence of NED benefits.* Because of the definition of region used for the RED account, all or almost all of the NED benefits for the plan will accrue to the regions being analyzed. The NED benefits of a plan that accrue to a region are to be organized in the same benefit categories used in the NED account.

(ii) *Transfers.* Income transfers to a region as a result of a plan include income from: implementation outlays, transfers of basic economic activity, indirect effects, and induced effects. In each case income transfers refer to increases in net income within the region rather than to increases in total expenditure.

(A) Income from implementation outlays is that portion of project outlays that becomes net income in the regional economy, exclusive of NED benefits from use of otherwise unemployed or underemployed labor resources as defined in § 711.61(e).

(B) Income from transfers of basic economic activity is net income from economic activity that locates in the region as a direct result of differences between the with- and without-plan conditions.

(C) Income from indirect effects is regional net income resulting from expansion in the production of inputs to industries supplying increased final products and regional exports.

(D) Income from induced effects is regional net income resulting from changes in consumption expenditures generated by increases in personal income.

(2) *Regional employment.* (i) The positive effects of a plan on regional employment are directly parallel to the positive effects on regional income, so the analysis of regional employment effects is to be organized in the same categories using the same conceptual bases as the analysis of positive regional income effects. Regional employment associated with each of the regional income categories is to be calculated and listed accordingly.

(ii) To the extent practical, planning reports are to provide reasonable estimates of the composition of increased employment according to relevant service, trade, and industrial

sectors, including a separate estimate for agriculture. The nature of the employment increase to each sector is to be classified as to the level of skill required—unskilled, semiskilled, and highly skilled.

(c) *Negative effects on regional economic development*—(1) *Regional income*. The negative effects of a plan on a region's net income are equal to the sum of the NED costs of the plan that are borne by the region, plus transfers of income from the region to the rest of the nation.

(i) *Regional incidence of NED costs*. The NED costs of a plan that are borne by a region are to be organized in the same categories used in the cost section of the NED account. Information from the cost allocation and cost sharing analysis undertaken as a part of the planning process will be needed to estimate these direct regional expenditures.

(ii) *Transfers*. Income transfers from the region include net income losses from plan-induced shifts of economic activity from the region to the rest of the nation and losses in existing transfer payments, plus any impacts that may affect the region as a result of NED costs or transfers from the region.

(2) *Regional employment*. (i) The negative effects of a plan on regional employment are to be organized and analyzed using the same categories and conceptual bases used for negative regional income effects (paragraph (c)(1) of this section).

(ii) The incidence of negative regional employment effects is to be shown as required for the positive regional employment effects (paragraph (b)(2)(ii) of this section).

(d) *Relationship between RED and NED effects*. To the extent possible, income information in the RED account is to be organized in the same categories as the NED effects. The relationship between the affected regional economies and the national economy is to be recognized. Since the NED account registers all effects on the national economy, any differences between the regional and national economic effects of a plan must take the form of transfers from the rest of the nation. The effects of these transfers are to be listed in a "rest of nation" category. The effects in the rest of nation category are to be equal to the difference between the RED effects and NED effects of a plan. This rest of nation category is to be displayed in the RED account together with the RED and NED effects.

§ 711.64 Other social effects account.

(a) *General*. (1) The OSE account describes that part of the NEPA human

environment, as defined in 40 CFR 1508.14, that registers plan effects from perspectives that are not reflected in the other three accounts. The categories of effects in the OSE account include the following: Urban and community impacts; life, health, and safety factors; displacement; long-term productivity; and energy requirements and energy conservation.

(2) Effects are to be evaluated in terms of their impacts on the separate regions and communities affected.

(3) Effects on income, employment, and population distribution, fiscal condition, energy requirements, and energy conservation are to be reported on a positive or negative basis. Effects on life, health, and safety are to be reported as either beneficial or adverse. Other effects may be reported on either a positive/negative basis or a beneficial/adverse basis.

(4) Effects that cannot be satisfactorily quantified or described with available methods, data, and information or that will not have a material bearing on the decisionmaking process may be excluded from the OSE account.

(b) *Urban and community impacts*. (1) Urban and community impacts are the impacts listed in Office of Management and Budget (OMB) Circular A-116, which implements Executive Order 12074, Urban and Community Impact Analysis. While a formal and detailed Urban and Community Impact Analysis, as defined in OMB Circular A-116, is not required for level C studies, the specified types and locations of significant impacts are to be reported in the OSE account.

(2) The principal types of urban and community impacts are—

(i) Income distribution, especially the share received by low income households (as defined in the Comprehensive Employment and Training Act (sec. 3, Pub. L. 95-524, 92 Stat. 1909);

(ii) Employment distribution, especially the share to minorities;

(iii) Population distribution and composition;

(iv) The fiscal condition of the State and local governments; and

(v) The quality of community life.

(3) Impacts include direct and indirect effects and are to be reported in both absolute and relative terms.

(4) Impacts are to be reported for the following types of places: Central cities; suburban communities; nonmetropolitan communities; rural communities; distressed cities (as defined by HUD, Office of Urban Development Action Grants); communities with higher than average rates of unemployment;

communities with per capita income lower than the U.S. average; Indian communities; and other appropriate categories of places.

(c) *Life, health, and safety*. Effects in this category include such items as risk of flood, drought, or other disaster affecting the security of life, health, and safety; potential loss of life, property, and essential public services due to structural failure; and other environmental effects such as changes in air or water quality not reported in the NED or EQ accounts.

(d) *Displacement*. Effects in this category include the displacement of people, businesses, and farms.

(e) *Long-term productivity*. Effects in this category include maintenance and enhancement of the productivity of renewable resources, such as agricultural land, for use by future generations.

(f) *Energy requirements and energy conservation*. Effects in this category include such items as use of nonrenewable energy resources during construction and operation of facilities and conservation of nonrenewable resources.

Subpart G—Displays

§ 711.70 General.

(a) Displays are graphs, tables, drawings, photographs, summary statements, and other graphics in a format that facilitates the analysis and comparison of alternative plans. Concise, understandable displays are needed during the planning process and to provide documentation in compliance with NEPA.

(b) Displays are to be prepared to facilitate the evaluation and comparison of alternative plans necessary to make the following determinations:

(1) The effectiveness of given plans in solving the problems and taking advantage of the opportunities identified in the planning process.

(2) What must be given up in monetary and nonmonetary terms to enjoy the benefits of the various alternative plans.

(3) The differences among alternative plans in terms of their effects as shown in the four accounts.

§ 711.71 Content and format.

The content and format of the displays are to be determined by the planning agency subject to the following requirements:

(a) Existing and forecasted resource conditions without any of the alternative plans and the problems and opportunities related to the planning setting are to be reported.

(b) Displays regarding candidate plans (§ 711.52) are to include the following items:

- (1) Measures in each plan.
- (2) Effects in the NED, EQ, RED, and OSE accounts.

(c) Displays regarding the recommended plan (see Subpart I) are to include the following items:

(1) A table in the format of Table 711.71-1 that shows effects on particular types of resources that are recognized by certain Federal policies. The table is to be completed by entering the effect on each listed type of resource in the units indicated in the table. No other types of resources or measurement units are to be included in this table. The purpose of Table 711.71-1 is to provide decisionmakers with a ready, consistent,

aggregate display of effects on such resources.

(2) A table in the format of Table 711.71-2 that shows compliance with the WRC-designated environmental statutes, referred to in Office of Management and Budget Circular No. A-11. The table is to be completed by entering whether or not the recommended plan complies with the requirements of each listed statute. If the recommended plan is not in full compliance, the items of non-compliance are to be noted.

(d) Alternative plans that were considered but did not become candidate plans are to be described briefly. The descriptions are to include the plan measures and effects and the reasons for not designating the plans as candidate plans.

Subpart H—Cost Allocation

§ 711.80 General.

(a) The need for cost allocation stems from pricing and cost-sharing policies that vary among purposes. Purposes are defined in either generic or specific authorizing statutes. Cost allocation is the process of apportioning financial costs among purposes served by a plan. Costs are to be allocated only to purposes for which participants in plan implementation have cost-sharing authority unless the plan proposes a change in cost-sharing policy. Cost allocation among purposes and the apportionment of cost shares to Federal and non-Federal public and private interests are necessary for preparation of RED and OSE accounts.

(b) Financial costs are implementation outlays as defined in § 711.61(g)(1) plus transfer payments such as replacement housing assistance payments as specified in 42 U.S.C. 4623 and 4624.

(c) Financial costs are to be allocated to those authorized purposes intentionally served by a plan. By definition, purposes do not include external economies and use of otherwise unemployed or underemployed labor resources. All purposes are to be treated comparably.

§ 711.81 Definitions.

(a) Separable cost for each purpose in a plan is the reduction in financial cost that would result if that purpose were excluded from the plan. This reduction in cost includes—

- (1) The cost of facilities and activities serving only the excluded purpose; and
- (2) Reductions in the cost of facilities and activities serving multiple purposes.

(b) Joint cost is the total financial cost for a plan minus the sum of separable costs for all purposes.

(c) Alternative cost for each purpose is the financial cost of achieving the same or equivalent benefits with a single-purpose plan.

(d) Remaining benefit for each purpose is the amount, if any, by which the NED benefit or, when appropriate, the alternative cost exceeds the separable cost for that purpose. The use of alternative cost is appropriate when—

- (1) A purpose generates more than incidental or complementary EQ beneficial effects; or
- (2) Alternative cost for the purpose is less than the NED benefit.

§ 711.82 Cost allocation standard.

Cost allocation to each purpose is the sum of separable cost for the purpose and a share of joint cost as specified below:

- (a) Joint cost may be allocated among

Table 711.71-1.—Effects of the Recommended Plan on Resources of Principal National Recognition, Format for Display

Types of resources	Principal sources of national recognition	Measurement of effects ¹
Air quality.....	Clean Air Act, as amended (42 U.S.C. 1857h-7 <i>et seq.</i>).	(Enter area, in square miles, where State air quality classifications would change for each affected classification.)
Areas of particular concern within the coastal zone.	Coastal Zone Management Act of 1972, as amended (16 U.S.C. 1451 <i>et seq.</i>).	(Enter gains and losses, in appropriate units.)
Endangered and threatened species critical habitat.	Endangered Species Act of 1973, as amended (16 U.S.C. 1531 <i>et seq.</i>).	(Enter area of each critical habitat type gained and lost, in acres.)
Fish and wildlife habitat.....	Fish and Wildlife Coordination Act (16 U.S.C. Sec. 661 <i>et seq.</i>).	(Enter area of each habitat type gained and lost, in acres.)
Floodplains.....	Executive Order 11988, Floodplain Management.	(Enter area gained and lost, in acres.)
Historic and cultural properties.....	National Historic Preservation Act of 1966, as amended (16 U.S.C. Sec. 470 <i>et seq.</i>).	(Enter number and type of <i>National Register</i> (listed or eligible) properties affected.)
Prime and unique farmland.....	CEQ Memorandum of August 1, 1980: Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act.	(Enter area of each farmland type gained and lost, in acres.)
Water quality.....	Clean Water Act of 1977 (33 U.S.C. 1251 <i>et seq.</i>).	(Enter length in miles for water courses, and area in acres for water bodies, where State water quality classifications would change for each affected classification.)
Wetlands.....	Executive Order 11990, Protection of Wetlands Clean Water Act of 1977. (42 U.S.C. 1857h-7, <i>et seq.</i>).	(Enter area of each wetland type gained and lost, in acres.)
Wild and scenic rivers.....	Wild and Scenic Rivers Act, as amended (16 U.S.C. 1271 <i>et seq.</i>).	(Enter length of each river type gained and lost, in miles.)

¹ If a type of resource is not present in the planning area, enter "Not present in planning area". If a type of resource is not affected, enter "No effect".

Table 711.71-2.—Compliance of the Recommended Plan With WRC-Designated Environmental Statutes, Format for Display

Federal policies	Compliance
Archeological and Historic Preservation Act, 16 U.S.C. 469, <i>et seq.</i>	(For each statute, enter one of the following—Full compliance, Partial compliance, Non-compliance, or Not applicable.)
Clean Air Act, as amended, 42 U.S.C. 1857h-7, <i>et seq.</i>	
Clean Water Act (Federal Water Pollution Control Act), 33 U.S.C. 1251 <i>et seq.</i>	
Coastal Zone Management Act, 16 U.S.C. 1451, <i>et seq.</i>	
Endangered Species Act, 16 U.S.C. 1531 <i>et seq.</i>	
Estuary Protection Act, 16 U.S.C. 1221, <i>et seq.</i>	
Federal Water Project Recreation Act, 16 U.S.C. 460-1(12), <i>et seq.</i>	
Fish and Wildlife Coordination Act, 16 U.S.C. 661, <i>et seq.</i>	
Land and Water Conservation Fund Act, 16 U.S.C. 4601-4601-11, <i>et seq.</i>	
Marine Protection, Research and Sanctuary Act, 33 U.S.C. 1401, <i>et seq.</i>	
National Environmental Policy Act, 42 U.S.C. 4321, <i>et seq.</i>	
National Historic Preservation Act, 16 U.S.C. 470a, <i>et seq.</i>	
Rivers and Harbors Act, 33 U.S.C. 403, <i>et seq.</i>	
Watershed Protection and Flood Prevention Act, 16 U.S.C. 1001, <i>et seq.</i>	
Wild and Scenic Rivers Act, 16 U.S.C. 1271, <i>et seq.</i>	

NOTES

- a. *Full Compliance.* Having met all requirements of the Statute for the current stage of planning (either preauthorization or postauthorization).
- b. *Partial Compliance.* Not having met some of the requirements that normally are met in the current stage of planning. Partial compliance entries should be explained in appropriate places in the report and referenced in the table.
- c. *Non-Compliance.* Violation of a requirement of the statute. Non-compliance entries should be explained in appropriate places in the report and referenced in the table.
- d. *Not applicable.* No requirements for the statute required compliance for the current stage of planning.

purposes in proportion to remaining benefits.

(b) Joint cost may be allocated in proportion to the use of facilities, provided that the sum of allocated joint cost and separable cost for any purpose does not exceed alternative cost for that purpose.

(c) If joint cost exceeds the sum of remaining benefits and if allocation of joint cost under the provisions of paragraph (b) of this section is not possible, joint cost is to be allocated by an alternative method that is judged by the Secretary of a Department or head of an independent agency to provide a more equitable distribution.

§ 711.83 Allocation of constituent cost.

Cost-sharing policies for some purposes pertain to cost constituents such as land costs, construction costs, and operation and maintenance costs. Costs for each cost constituent specified in the relevant cost-sharing policy are to be allocated among purposes.

Subpart I—Plan Selection

§ 711.90 General.

The planning process leads to the identification of alternative plans that could be recommended or selected. These plans are referred to as candidate plans. The culmination of the planning process is the selection of the recommended plan from among the candidate plans, or the decision to take no action. The selection is to be based on a comparison of the effects of alternative plans and consideration of how well each plan meets the four tests (§ 711.51(c)).

§ 711.91 Selection.

(a) The alternative of taking no action, i.e., selecting none of the alternative plans, is to be fully considered.

(b) Selection of the recommended plan is to be made by the agency decisionmaker for Federal projects and by State or local sponsors for Federally-assisted projects.

(c) The basis for selection of the recommended plan is to be fully reported, including considerations used in the selection process.

(d) Plans are not to be recommended for Federal development if they would physically or economically preclude non-Federal plans that would likely be undertaken in the absence of the Federal plan and that would more effectively contribute to the NED and EQ objectives when comparably evaluated according to these Principles and Standards.

§ 711.92 Net beneficial effects rule.

(a) A recommended plan (when considered on the basis of the with-plan versus without-plan comparison) must have combined beneficial NED and EQ effects that outweigh combined adverse NED and EQ effects. For example, a plan lacking net NED benefits may be recommended if net EQ beneficial effects are sufficiently large, even though EQ effects are not stated in monetary terms.

(b) The Secretary of a Department or head of an independent agency may make an exception to the net beneficial effects rule in accordance with the rules promulgated by the Secretary of the Department or the head of the independent agency, if circumstances warrant such exception. The reasons for granting an exception are to be given and appropriately documented.

Subpart J—Summary of the Planning Process

§ 711.100 Introduction.

The planning process consists of a series of steps that identify or respond to problems and opportunities and culminates in the selection of a recommended plan. The process involves an orderly and systematic approach to making determinations and decisions at each step so that the interested public and decisionmakers in the planning organization can be fully aware of: The basic assumptions employed; the data and information analyzed; the reasons and rationales used; and the full range of implications of each alternative plan.

§ 711.101 Major steps.

(a) The planning process consists of the following major steps:

(1) Specification of the water and related land resources problems and opportunities (relevant to the planning setting) associated with the NED and EQ objectives.

(2) Inventory, forecast, and analysis of water and related land resource conditions within the planning area relevant to the identified problems and opportunities.

(3) Formulation of alternative plans.

(4) Evaluation of the effects of the alternative plans.

(5) Comparison of alternative plans.

(6) Selection of a recommended plan based upon the comparison of alternative plans.

(b) Plan formulation is a dynamic process with various steps that should be iterated one or more times. This iteration process, which may occur at

any step, may sharpen the planning focus or change its emphasis as new data are obtained or as the specification of problems or opportunities changes or becomes more clearly defined.

§ 711.102 Specification of the problems and opportunities associated with the NED and EQ objectives.

(a) The desire to alleviate problems and realize opportunities is to be specified for the planning area in terms of the NED and EQ objectives (see Subpart C). The problems and opportunities are to be broadly defined so that their definition does not dictate a narrow range of alternatives.

(b) The problems and opportunities are to be defined in such a way that meaningful levels of achievement are identified. This will facilitate the formulation of alternative plans in cases in which there may be resource, technical, legislative, or administrative constraints on the total alleviation of a problem or realization of an opportunity.

(c) The problems and opportunities are to be stated for both current and future conditions. Desired conditions for the future should be explicitly stated.

(d) The problems and opportunities are to reflect the specific effects that are desired by groups and individuals as well as the problems and opportunities declared to be in the national interest by the Congress or the Executive Branch. This identification and detailing of problems and opportunities is the process of making explicit the range of preferences and desires of those affected by resource development. It should be understood that the initial expressions of problems and opportunities may be modified during the planning process.

§ 711.103 Inventory and forecast water and related land resource conditions within the planning area.

The potential for alleviating problems and realizing opportunities is determined during inventorying and forecasting. The inventory and forecast of resource conditions are to be related to the problems and opportunities previously identified (see Subpart D).

§ 711.104 Formulation of alternative plans.

Various alternative plans are to be formulated as specified in Subpart E. Usually, many alternative plans are identified early in the planning process and become more refined through additional development and through subsequent iterations. Additional alternative plans may be introduced at any time.

§ 711.105 Evaluation of effects.

(a) *General.* The evaluation of the effects of each alternative plan consists of an assessment and appraisal.

(b) *Assessment.* Assessment is the process of measuring or estimating the effects of an alternative plan. Assessment determines the difference between without-plan and with-plan conditions for each of the categories of effects identified in Subpart F—Accounts.

(c) *Appraisal.* (1) Appraisal is the process of assigning social values to the technical information gathered as part of the assessment process.

(2) Since technical data concerning benefits and costs in the NED account are expressed in monetary units, the NED account already contains a weighting of effects; therefore, appraisal is applicable only to the EQ, RED, and OSE accounts.

(d) *Displays.* The information from evaluation is to be displayed according to the directions provided in Subpart G—Displays.

§ 711.106 Comparison of alternative plans.

(a) The comparison of plans focuses on the differences among the alternative plans as determined in the evaluation phase (see § 711.105).

(b) The differences are to be organized on the basis of the effects in the four accounts.

(c) The comparison of plans usually results in the designation of some of the alternative plans as candidate plans. This designation may be changed as a result of refinement of data or analyses, iteration, expressions of public concern, etc. (see § 711.52).

§ 711.107 Plan selection.

After consideration of the various alternative plans and their effects, public input, and appropriate iterations, a plan is selected following the general guidance in Subpart I.

§ 711.108 Iteration.

(a) The planning process described in these Principles and Standards is an iterative process in which returning to earlier phases is a key to successful implementation. Iteration will frequently occur after completion of the comparison of plans. Among the reasons for returning to an earlier phase at this point, or at any point, are the following—

(1) More detail is needed as the basis for selecting a recommended plan;

(2) The consideration of alternative plans reveals significant shortfalls in alleviating the problems or realizing the

opportunities of one or both of the objectives;

(3) Information on resource capability and alternative plans suggests that the initial specification of problems or opportunities was in error and requires modification;

(4) Public policy changes occurring during the planning study suggest the need for a change in emphasis for the NED or EQ objectives; and

(5) The consideration of alternative plans reveals significant adverse effects.

(b) The extent and number of iterations should be based on a judgment of whether new information, further detail, or other changes are likely to significantly change the identified problems or opportunities or the alternative plans.

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