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Digest of Water Resources Policies and Authorities

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Department of the Army
Office of the Chief of Engineers
Washington, D.C. 20314

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Pamphlet
No. 1165-2-1

28 September 1979

Water Resource Policies and Authorities
DIGEST OF WATER RESOURCES POLICIES

1. Purpose. This pamphlet provides a summary, in convenient form, of the existing administrative and legislative water resource policies and authorities pertinent to the Civil Works activities of the Corps of Engineers.
2. Applicability. This pamphlet applies to all OCE elements and all field operating agencies having Civil Works responsibilities.
3. References. Relevant published references are indicated in the text of each chapter.
4. Use of this Pamphlet. This digest was developed as a ready reference to policies diffused in a voluminous body of engineer regulations, manuals, technical letters and memoranda. Those documents are cited in each chapter and should be consulted for specific application in individual cases. In addition, the digest will be of value in orienting and familiarizing newly assigned personnel, military and civilian, with essential and paramount policies regarding Corps of Engineers Civil Works activities.
5. Future Changes in Policy. Although dated 28 September 1979, the information included in this pamphlet summarizes policies as of 15 July 1979. Many changes in policy are under consideration as a result of the President's Water Policy Reforms enunciated in June 1978 and other actions of Congress and the courts. This pamphlet indicates areas of likely changes and will be up-dated periodically as appropriate.

FOR THE CHIEF OF ENGINEERS:

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CHAPTER 1

THE FEDERAL RESPONSIBILITY IN WATER RESOURCES

1-1. General Concept. The Federal concern with natural resources is founded on the fact that they are the basis of our national wealth and future well-being. The fundamental goal of Federal participation in resource planning and development is to insure that an optimum contribution is made to the welfare of all the people. The Federal concern regarding water resources is shown by many legislative enactments by the Congress under the Commerce and Welfare clauses of the Constitution. A developing body of law has established varying degrees of National concern in such areas as navigation, flood control, beach erosion control, drainage, irrigation, recreation, fish and wildlife conservation, water supply and water quality. Since water and adjacent lands are primary natural resources, the Federal Government has a major role in their management. (ER 1165-2-1)

a. National Goals. National goals in water resources management are long-range in nature. Their achievement is of Federal concern, particularly in those aspects of our free enterprise system where effective incentives are lacking. Federal policy seeks to maintain a reasonable balance between the powers and responsibilities given to the Federal Government and those with the States, local governmental entities, and private enterprise.

b. Legislation. Legislation expresses the priority goals and objectives of the people, and is implemented by the executive agencies, and monitored by the courts. Laws governing agency activities permit some latitude in developing specific plans and courses of action to be recommended to Congress for authorization. Such latitude imposes a responsibility on Federal agencies to recommend proper division of responsibility between Federal and non-Federal entities. The legislative policies and principles governing operational activities, and other indicators of administration policy and Congressional intent, provide the basic guidance in these matters.

1-2. Sharing of Responsibility. States and local governments have more immediate and utilitarian interest in water resource management than the Federal government. Their well-being, as that of the Nation as a whole, depends upon the availability of water resources of adequate quality and quantity. Acts of Congress, and interpretations thereof by the Supreme Court, clearly indicate that

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the Federal Government may participate to some degree in all aspects of water and related land conservation, development, and management. However, the degree of Federal participation and financing is generally limited to that required to achieve national objectives in an optimal manner. Participation varies from a maximum for sound planning to less for construction, and to still less for operation and maintenance activities. Generally, Federal planning in water resources should be comprehensive in scope. Federal participation in planning, construction, and operation or maintenance activities is guided by careful consideration of applicable precedent and law; the likelihood of widespread and general benefits; local ability to solve problems; and savings to the Nation that might be achieved by meeting needs through economies of scale.

1-3. Dynamic Nature of Federal Policy. Legislative enactments reflect both long and short-range national priorities and require progressive adaptation. Rigid policies are undesirable when dealing with resources which affect the well-being of our people, and which have broad economic, environmental, and social implications. Changing technology and public priorities require flexible policies and informed leadership to meet urgent needs and to assure the welfare of future generations. Unusual and unique circumstances may present a valid basis for exceptions to existing policies. However, approval of departures from established Corps policies is not a delegated authority. Reporting officers must request special guidance in such circumstances. The Chief of Engineers will consult with higher authority when necessary.

CHAPTER 2

EXECUTIVE, LEGISLATIVE, AND JUDICIAL ROLES IN POLICY DEVELOPMENT

2-1. Executive Branch. The Executive Branch of Government includes the Executive Office of the President and the various Federal Departments and Agencies. The Department of the Army and the Corps of Engineers are charged by Congress with the major Federal program of water resources development. This has been the outgrowth of legislative and administrative activity over many years. The term "civil works program" is usually applied to these non-Military Corps activities. The Executive Office of the President, acting directly or through support offices, specifies policy, principles, methods, standards and procedures on water and related land resources programs to be used by Federal agencies in implementing their lawful activities. While much of this policy is established by law, a significant amount is not. Executive policy is consistent with policy established by law. Executive policies are issued through the Office of Management and Budget (OMB); the Water Resources Council (WRC); and the Council on Environmental Quality (CEQ). Pertinent Executive Orders are listed in Chapter 26. In addition, international commissions, and interagency councils and agreements have been developed to aid in the accomplishment of executive policy.

a. Department of the Army. The Secretary of the Army (SA) oversees direction of the Corps of Engineers (CE) and its civil works program. Civil Works laws authorize action in the following ways: action by the SA; action under the direction of the SA and supervision of the Chief of Engineers (COE); and by the SA acting through the COE. The COE regularly submits reports to the SA for review and transmittal, along with the SA's comments and recommendations, to OMB for its advice on the relation of the report recommendations to the programs of the President. The Office of the Assistant Secretary of the Army for Civil Works - ASA(CW) works closely with the Office, Chief of Engineers (OCE) on central or critical management areas, including general programming of the CE civil works budget; substantive policy issues; priorities for "new starts"; new or evolving functional areas of responsibilities for the CE; and legislative drafting services requested by members of Congress. The ASA (CW) reviews and transmits the proposed CE Civil Works Budget to OMB as a basis for the President's budget recommendations to Congress.

b. Office of Management and Budget (OMB). The current structure of OMB was established by Executive Order 11541,

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July 1970, in the Executive Office of the President. OMB coordinates Executive Branch reports on proposed legislation and reviews proposed projects to determine their relationship to the program of the President. It reviews proposed Executive Orders and assists in the preparation of the President's annual budget and in the formulation of the fiscal program of the Government, and also supervises and controls the administration of the budget. Administration positions relating to fiscal and budgetary matters are generally issued as OMB memoranda, circulars and bulletins. Appendix E lists pertinent OMB circulars.

c. Federal Regional Councils. Executive Order Nos. 11647, 11731 and 11892 established a Federal Regional Council in each of ten standard regions. The Council structure provides a framework for the concerned Federal agencies and the State and local governments to work together in coordination of their interrelated programs at the regional level. It also provides a way to focus resources of different agencies on special problems. The Corps has been asked to become an Associate Member of some Councils. Where the Corps has been asked to become a member of a Federal Regional Council, the Corps may be requested to support and participate in Council activities on a special ad hoc basis or to work with the Council on specific problems. (ER 1165-2-22).

d. Water Resources Council (WRC). WRC was established by the Water Resources Planning Act, Public Law 89-80, 22 July 1965. Its purpose is to encourage the conservation, development, and utilization of water and related land resources on a comprehensive and coordinated basis by the Federal Government, States, localities, and private enterprise. The members include the Secretaries of Agriculture; Army; Commerce; Energy; Housing and Urban Development; Interior; and Transportation; and the Administrator of the Environmental Protection Agency. The Chairman may invite the heads of other Federal agencies having authorities and responsibilities relating to the work of the Council to become Associate Members. Observers include the Department of Justice, the Office of Management and Budget, the Council on Environmental Quality, the Chairmen of Inter-Agency Committees and the River Basin Commissions and the U.S. Commissioners of the Federal-Interstate Compact Commissions. The principal functions of the Council were specified under three titles of the Act:

(1) Title I - Water Resources Council.

- Prepare and maintain a national water assessment;
- Coordinate water and related land resources planning policies and programs with and among the Federal participants;

- Establish principles, standards and procedures for Federal participants in the preparation of plans and formulation and evaluation of Federal water and related land projects.
- (2) Title II - River Basin Commissions.
- Establish and assist river basin commissions, inter-agency committees and coordinating groups;
 - Coordinate and review river basin and regional plans and programs prepared by Federal - State interests;
- (3) Title III - Financial Assistance to the States.
- Administer Federal financial grants to States for water and related land resource planning.

In addition, Executive Order 12113 and Executive Order 12141, established, within WRC, an independent water project review of function. In accord with the Order, WRC makes a technical review of pre-authorization reports and pre-construction plans and reports for Federal water and related land resources projects. Funds have not yet been made available to initiate this review.

e. Council on Environmental Quality (CEQ). The CEQ was established by Section 202 of the National Environmental Policy Act of 1969. The Office of Environmental Quality (OEQ), which was established by Public Law 91-224, 3 April 1970, provides staff for the Council. The CEQ advises and assists the President in providing leadership in protecting and enhancing the quality of the Nation's environment. It develops and evaluates Federal policies and activities on environmental quality. One of CEQ's primary functions in relation to water resources is the preparation of regulations concerning the development of environmental impact statements developed by the Corps and other agencies. CEQ regulations on implementation of the procedural provision of NEPA are printed in 40 CFR 1500-1508.

f. International Relations.

(1) Canada. The International Joint Commission (IJC) was established under the Boundary Water Treaty of 1909. It is empowered to establish local international boards to assure adherence to the

rules and regulations pertaining to the utilization and safeguard of United States and Canada boundary waters. IJC boards fall into two broad categories: boards of control, which are more or less permanent; and engineering or advisory boards, which are usually dissolved after completing their investigation. Members on an IJC board are in no sense representatives of their employers. Their board service is of a professional capacity under the direction of the Commission; their agency is not committed by their actions or those of the board. Initiation and approval of IJC reference actions by the U.S. Section of the Commission is through the U.S. Department of State. Funding of this activity is under the "International Waters Studies" account or under an on-going study or project account.

(2) Mexico. The International Boundary and Water Commission, (IBWC) United States and Mexico, was established pursuant to the Rio Grande, Colorado and Tijuana Treaty of 1944 and deals with the utilization of the waters of the three rivers basins. Activities of the U. S. Section of the Commission are funded under the Department of State. The Corps, upon request, of the U.S. Section, provides advisory and technical services to the Commission.

(3) Management of Activities. Corps members serving on Boards of these International Commissions and their subordinate groups are governed by AR 15-1, Committee Management; and ER 15-1-1, Committee Management Program. Members submit an annual fiscal year report on Board activities per ER 335-2-5 for the Chief's Annual Civil Works Report.

g. Interagency Agreements. These agreements represent a coordination device agreed upon by two or more Federal agencies to analyze or solve common problems in a consistent manner so as to optimize the results of the joint effort. Interagency agreements, adopted as common interagency policy, carry the authority of the respective agency heads. The scope and degree of formality of this limited form of Executive policy varies widely. Pertinent interagency agreements are listed in Chapter 27. (EP 1165-2-2.)

2-2. Legislative Branch. The basic legislation which governs the conduct of the Corps civil works program consists of numerous separate enactments of the Congress. The work of preparing and considering such legislation is done largely in the Senate Environment and Public Works Committee and the House Public Works and Transportation Committee. The tendency has been for Congress to gradually increase Federal responsibility in response to needs of the times. Some water resource project purposes were established through specific legislation. Others were established as a result

of repetitive Congressional authorization of projects containing resource purposes incidental to the "primary" project purposes. Pertinent Legislative Acts are listed in Chapter 25. While the public laws governing water resources are the basic source of formal, explicit policy, the Congressional intent which may be deduced from the documented history of these legislative statements is also an important policy source. Sources which express the sense of Congress include House and Senate Committee reports and resolutions and the Congressional Record of discussions during consideration of the proposed legislation.

a. Legislative Landmarks. The Corps civil works responsibility began with an Act of Congress in 1824 for the improvement of rivers and harbors for navigation. This led to legislation in 1879 creating the Mississippi River Commission and establishment of the Board of Engineers for Rivers and Harbors in 1902. Legislative expansion of the Corps functional responsibility has included:

- Regulatory activities over waters, 1899, and 1972;
- Hydroelectric power in dams, 1912 and 1917;
- Flood Control, 1917, 1927, 1936, 1974;
- Recreation navigation, 1932;
- Recreation, 1944, 1962, and 1965;
- Irrigation (limited), 1944;
- Water supply, 1944, 1958, and 1965;
- Shore and beach erosion protection, 1946, 1956, 1962, 1974;
- Hurricane protection, 1955, 1958;
- Water quality, 1961, 1972, 1974;
- Environmental concern and emphasis, 1970;
- Fish and Wildlife Conservation, 1958, 1965, and 1974;
- Wastewater Management, 1972
- Wetlands Development, 1976

These and other acts have expanded the legislative basis for Corps participation in the functional areas of water management to a more comprehensive basis. Recent years have also seen a qualitative change in public policy toward resource planning and development, spurred by the recognition that this Nation's natural resources are both interrelated and finite. Social objectives other than economic efficiency have evolved. Legislation on these hard to quantify and evaluate objectives is still of a general nature; they challenge the planner in developing recommendations that accommodate their intent.

b. Authorizing Legislation. House Public Works and Transportation and Senate Environment and Public Works Committee resolutions and specific legislation provide basic authorization for

survey investigations and other feasibility studies by the Corps. Generally, water resource developments recommended to the Congress in response to study authorities may not be implemented without being specifically adopted in law. The majority of the Corps water resource projects or programs fall into that category. However, Section 201 of the 1965 Flood Control Act, as amended delegated to the Secretary of the Army the right to administratively authorize water resource developments for which the estimated Federal cost is less than \$15 million. Approval by the Public Works Committees is required prior to project implementation. Use of this authority by the Secretary of the Army has been suspended pending enactment of the President's proposed cost sharing legislation (para 5-11b). Additionally, Congress has delegated continuing authority to the Secretary of the Army for construction of small projects for navigation, flood control, beach erosion control, and bank protection that meet certain specified criteria.

2-3. Judicial Branch. The role of the Federal courts is to clarify and define the responsibilities and limitations placed on the Corps Civil Works activities by Federal statutes and the Constitution. Judicial decisions have affected Civil Works policies in several major areas: basic authority to construct or operate projects; administrative practices and required factors of consideration in project construction and operation (including environmental factors); and the scope and application of regulatory authorities.

a. The Courts. The Federal Courts include the Supreme Court of the United States, the Court of Appeals, and the District Courts in the eleven Federal Judicial Circuits. Questions of law decided in one District or Circuit often foreclose similar questions in another District or Circuit. However, cases regarding the conduct of specific projects or activities are considered binding only with the District or Circuit in which the case was decided. The Court of Claims is also a Court of original jurisdiction. Conflicting decisions among the circuits are resolved by appeal to the Supreme Court.

b. Relation to Congressional Authority. Congressionally approved Corps projects must have been authorized in exercise of one of the powers granted to Congress by the Constitution. Such authorizations are generally based on the Congressional powers to regulate interstate and foreign commerce, or to tax and spend for the general welfare. Major Supreme Court decisions have established that those general powers include not only the power to promote navigation, but also to provide for flood control, hydropower production, watershed development, and similar activities of broad

water resources management. Furthermore, the powers can be applied by Congress not only to the main portions of a river or other body of water, but to it's watershed and non-navigable portions as well. Also involved is the resolution of interstate water problems. States often assert conflicting claims to the waters made available by a major interbasin project. The Supreme Court has ruled that Congress may adopt a comprehensive statutory plan for apportionment of the waters involved when authorizing a project. Similarly, the court itself may adjudicate such interstate disputes. Interstate cooperation is approved by Congress in the form of an interstate compact. (Para 4-5)

c. Interpretation of Legislative Policy. Policies in new or controversial fields often require judicial interpretation. In recent years judicial effect on policy has been most pronounced in matters of administrative procedures, particularly those involving public participation in decision-making and related environmental questions. The provisions of the National Environmental Policy Act have been applied by the courts virtually to the whole scope of the planning, construction, and operation of water resources projects, resulting in numerous changes in agencies' basic procedures. Due to this increased judicial scrutiny which occurred in the early 1970's, individuals and groups affected by present or proposed projects will have a continued opportunity to use the courts to test the propriety and application of administrative procedures.

d. Legislation and Corps Regulatory Activity. Corps regulatory authorities have been interpreted by the courts to require detailed attention to systematic decision-making and protection of the interests of the public at large as well as the particular interests of the persons or entities subjected to Federal regulation. The policies governing the administrative procedures in Corps regulatory programs have accordingly become increasingly detailed.

CHAPTER 3

NATIONAL OBJECTIVES AND POLICIES IN WATER RESOURCES MANAGEMENT

3-1. Defining the National Objectives. The concept of multi-objective planning to guide Federal programs has long been advocated. Public debate and actions by the Congress and the Administration have enlarged the attention given non-economic factors in preserving and developing national resources. Taken together, the policies established by these actions define the national objectives for water resource planning.

a. Congressional Objectives. In addition to specific legislation on environmental protection and enhancement, particularly water and air quality, Congress has taken significant actions in recent legislation in defining broad objectives. Among others, these actions include:

(1) The Clean Water Act of 1977 (PL 95-217). This Act amends Public Law 92-500 and continues the massive research and action program designed to clean up U.S. waters. The Environmental Protection Agency (EPA) has primary responsibility for implementing this program. However, under Section 404, the Corps of Engineers retains primary responsibility for permits to discharge dredged or fill material into waters of the United States. The Act also defines the conditions which must be met by Federal projects before they may make discharges into the Nation's waters.

(2) Water Resources Development Act of 1976 (PL 94-587). Section 150 authorizes the Chief of Engineers to establish wetland areas with dredged material from water resources projects.

(3) Water Resources Development Act of 1974 (Pub. Law 93-251). Section 73 states a general policy that, during planning, Federal agencies will give consideration to non-structural measures to reduce or prevent flood damage and that the Federal Government may participate in the costs.

(4) River and Harbor and Flood Control Act of 1970 (Pub. Law 91-611).

(a) Section 122 directed the Secretary of the Army, acting through the Chief of Engineers, to promulgate guidelines for

consideration of significant economic, social and environmental effects of proposed water resources developments, so that final project decisions are made in the best overall public interest.

(b) Section 209 expressed the intent of Congress that the objectives of enhancing regional economic development, quality of the total environment, well-being of people, and national economic development are to be included in the formulation and evaluation of Federally financed water resource projects.

(5) National Environmental Policy Act of 1969 (NEPA) (Pub. Law 91-190). NEPA declared it a national policy to encourage productive and enjoyable harmony between man and his environment, and for other purposes. Specifically, it declared a "continuing policy of the Federal Government ... to use all practicable means and measures ... to foster and promote the general welfare, to create conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." Sec. 102 authorized and directed that, to the fullest extent possible, the policies, regulations and public laws of the United States shall be interpreted and administered in accordance with the policies of the Act.

(a) Environmental Impact Statement (EIS). Section 102(2)(c) requires the preparation of an EIS to accompany every recommendation or report on legislative proposals, or other major Federal actions significantly affecting the quality of the human environment. The Corps of Engineers normally prepares an EIS for legislation, feasibility reports, operations and maintenance activities, regulatory permits and real estate management and disposal actions. Environmental assessments are prepared for other Corps actions which may not have a significant impact on the environment. A finding of no significant impact is prepared by the reporting officer to accompany an assessment when an EIS will not be prepared. Emergency activities do not require the preparation of an EIS. (ER 200-2-2)

(b) Notice of Intent. A notice of intent to prepare a draft EIS is published in the Federal Register as soon as practicable after reporting officers decide to prepare a draft EIS. (ER 200-2-1)

(c) Record of Decision. A Record of Decision is prepared to document the Corps final decision on a proposed action requiring an EIS. The Record of Decision identifies the alternatives considered; those which were considered environmentally preferable; the relevant factors including economic, technical, statutory missions, and national policy which were balanced to make the decision; and

whether all practicable means to avoid or minimize environmental harm have been adopted, and if not, why they were not. (ER 200-2-2)

b. Administrative Policy. Administrative policy has developed gradually but continuously over the years to implement laws and to encompass the growth of economic and social need and changing technology. Basic principles of formulation and evaluation were outlined in the report to the Inter-Agency Committee on Water Resources entitled, "Proposed Practices for Economic Analysis of River Basin Projects". The report was originally issued in May 1950 and revised in May 1958. In May 1962, the President approved use of the principles and standards contained in Senate Document 97, 87th Congress. In 1973, the President approved, and the Water Resources Council published its "Principles and Standards for Planning Water and Related Land Resources," (P&S) in the Federal Register (38 FR 24778). The P&S require that Federal and federally assisted water and land activities be planned toward achievement of National Economic Development (NED) and Environmental Quality (EQ) as co-equal national objectives. On 6 June 1978, the President in his Water Policy Reform Message to Congress, reaffirmed the P&S, giving emphasis to "water conservation" as a component of the two co-equal National objectives, and consideration of "non-structural" alternatives in planning. The major thrust of the new policy initiative he set forth was to:

--- Improve planning and efficient management of Federal water resources programs and to permit necessary water projects which are cost-effective, safe, and environmentally sound to move forward expeditiously;

--- Provide a new, national emphasis on water conservation;

--- Enhance Federal-State cooperation and improved State water resources planning;

--- Increase attention to environmental quality.

These initiatives are being implemented as a result of the following memoranda issued 12 July 1978.

(1) Improvements in the Planning and Evaluation of Federal Water Resources Programs and Projects. This memo called for: the WRC and its member agencies to revise the P&S to accomplish full integration of water conservation into project and program planning and review, as a component of the NED and EQ objectives, and consideration of non-structural alternatives; development of a planning manual for use in evaluating projects; establishment of an

Independent Water Project Review Function in the WRC to provide an impartial technical review of all water projects during pre-authorization and pre-construction planning to assure compliance with the P&S manual and Federal laws, regulations and guidelines relevant to the planning process. It also provided decision criteria for use in determining which projects will be supported by the Administration in authorization and appropriations bills. The planning manual was published in the Federal Register on 24 May 1979 as a proposed rule.

(2) Environmental Quality and Water Resources Management. This memo requires agencies with responsibility to implement environmental protection statutes to review their existing regulations and revise them as appropriate to insure timely and effective compliance. In addition, prior to requesting funds for construction, planning of a water resources project will determine whether any groundwater problems exist; the extent the Federal project will cause or contribute to the problem; and, actions which can be taken to avoid or minimize the problem. In cooperation with the States, Federal agencies shall improve, where possible, the operation and management of existing projects to protect instream uses. In planning, Federal agencies will establish and provide for the streamflow necessary to maintain instream needs below proposed dams or other facilities. Legislation is to be submitted to provide for maintenance of instream flows at existing projects when feasible.

(3) Water Conservation and Floodplain Management in Federal Programs. Called for agencies to implement water conservation policies applicable to their agency operations and to fully and expeditiously implement EO 11988 on "Floodplain Management".
(ER 1165-2-26)

(4) Conservation Pricing of Water Supplied by Federal Projects. Directs Federal agencies to take all necessary steps to increase water conservation and Federal cost recovery from Federal projects and to allow States to set the price of water supplies for municipal and industrial purposes above the full cost recovery level in order to fund water conservation programs.

(5) Emphasis on Nonstructural Flood Protection Methods. Directs Departments to utilize existing programs to encourage the use of nonstructural floodplain management practices. It directs the Secretary of the Army to organize and coordinate these efforts.

(6) Enhanced Federal-State Cooperation in Water Management. Directs the WRC to prepare legislation to make \$25 million available to States for technical assistance in water conservation; increase

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budget requests for funding of the State grants program under Title III of PL 89-80 to \$25 million; and prepare legislation to implement new cost sharing requirements for projects (see para 5-11b).

In addition, memorandums were issued regarding Federal and Indian Reserved Water Rights, Technical Assistance for Water Conservation in Water-Short Areas, Water Conservation in Housing Assistance Programs, Water Conservation at Federal Facilities, Water Conservation Provisions in Loan and Grant Programs for Water Supply and Treatment, Agricultural Assistance Programs in Water-Short Areas, and Improvements in Soil Conservation Service Programs.

3-2. Corps of Engineers Policy.

a. General. It is the policy of the Corps of Engineers to develop, control, maintain, and conserve the Nations' water resources in accordance with the laws and policies established by Congress and the Administration. In accordance with those laws and policies, the Corps carefully considers and seeks to balance the environmental and developmental needs of the Nation. Actions taken comply with all relevant environmental statutes, have no significant safety problem, and are in the overall public interest. The following guidelines summarize considerations taken to insure that actions taken are in the public interest.

(1) Range of Alternative Solutions. The full range of alternative solutions to a problem including their positive and negative impacts should be considered from the outset of the planning activity. Any water resource management proposal should be preceded by a thorough assessment of all relevant alternative means to achieve proposed project objectives and purposes singly or in combinations reflecting different choice criteria. Such an assessment should include a full range of structural and non-structural alternatives and an unbiased analysis of both Corps and non-Corps means of resolving water and related land use problems; while protecting, preserving, and enhancing the quality of the environment, restoring environmental quality previously lost, and minimizing or mitigating unavoidable adverse effects.

(2) With and Without Consequences. The with and without consequences of each feasible alternative should be determined adequately. The net effect of any proposed solution to a water resource problem should be carefully considered under a with - and without action framework, using projections of economic, environmental and social impacts. Beneficial and adverse project impacts may be evaluated by measuring the differences between indicator values which result if a proposed plan is implemented and their values if the natural forces of change continue to develop

free of the influence of action by the Corps. Provisions should be made for preserving unique cultural and biological resources, such as historic and archeological sites and threatened, endangered and otherwise significant species and their habitats.

(3) Options Foreclosed. Options foreclosed by the proposed action should be analyzed. Changing national values and priorities will be reflected in different approaches to the future well-being of the general public. In a rapidly changing society the needs of the future cannot be forecast with accuracy. Where evolving technology provides new alternatives a primary tenet of planning should be to maintain flexibility for the future. Phased development or deliberate delay may frequently be better than action for which incremental need has not been demonstrated thoroughly and the resultant effects have not been evaluated adequately. To maintain flexibility it is necessary to devote extra attention to those actions which would irrevocably limit freedom of action to deal with future changes to project-area water development problems and needs. Significant options retained or foreclosed should be specified.

(4) Cumulative Effects of the Plan. The cumulative effects of the plan and other similar activities should be analyzed. Each proposed water resource development activity is but a piece of a large-scale program. The combined beneficial and adverse economic, environmental and social impacts of individual projects, each of which may be relatively minor, can have a significant regional or national impact. At each level of the evaluation and review process it is necessary to assess the cumulative beneficial and adverse effects of individual project impacts. Significant effects should guide the decisions.

(5) Public Acceptance. The level of overall public acceptance of the solution to a problem is evaluated. Public participation is a viable and essential approach to problem and impact identification and evaluation, and determination of public acceptance of the final proposals. To promote public trust and confidence in the ability of the Corps planning process, it is necessary to plan in an open arena. An intensive effort must be made to translate the technical language of planning and the underlying research and methodology to a form understandable to all those interested in water resources planning, policies and techniques. Preliminary or interim alternative plans should be displayed and discussed; and expressions of conflicting public values, attitudes and preferences must be impartially encouraged. To make the process effective, it is necessary to incorporate public views into the planning process at its very beginning. Corps employees should not assume the role of project proponent or salesman.

(6) Response to Goals and Priorities. The plan should respond to the long-range development goals and priorities for the study area, and to National policies and objectives. Many regions and basins have long-range development goals and priorities, as specified in assessments, framework studies, comprehensive basin studies, and in other sources. Any proposed plan should be consistent with these objectives. To insure this consistency, adequate coordination must be achieved with regional planning bodies and all other interested parties.

b. Responsibility. Division Engineers are responsible for seeing that all actions of Civil Works personnel conform to established forms and forums for objective, professional analyses of water resource problems and alternative solutions; for full compliance with requirements for environmental impact statements and other information and evaluation displays; and for adherence to all established Executive Branch and Congressional policies regarding Federal - non-Federal cooperation. The continued successful accomplishment of the Corps mission assignments depends on avoidance of even the appearance of deviation from established procedures and particularly of being project proponents.

c. Opposition by a State. During the period from project conception through construction a Governor or other State official may request termination of a project or delay pending restudy of modifications or alternatives. The views of the State are given great weight in actions taken by the Corps of Engineers as discussed in the following paragraphs.

(1) Projects in preauthorization stages. The Corps traditionally defers to adverse views of a Governor on a proposed project located in his State. A favorable recommendation over the objections of a Governor would be justified only if the project: is physically located in more than one State and provides substantial and urgently needed interstate benefits; is an indispensable element of a major river basin plan; or involves compelling circumstances related to national interest or security. The survey report would contain a full documentation of the Governor's opposition and would be submitted to Congress for its decision.

(2) Authorized but unfunded projects. Projects in this category are proposed for deauthorization using the authority of Section 12 of PL 93-251 (para 6-5). If not eligible for deauthorization under Section 12 consideration is given to placing them in the inactive category (para 7-4).

(3) Projects funded for preconstruction planning. If gubernatorial opposition to projects in this stage occurs, the Corps generally will phase out and suspend planning as long as the Governor remains opposed. Congress is informed during appropriation hearings. If the project meets one of the criteria in paragraph 3-2 c(1) the Corps should propose to continue planning. If a project lacks local support, or if a Governor withholds or withdraws necessary assurances or contractual requirements, planning should cease and actions taken to classify the project as inactive. The final decision to terminate planning on projects rest with Congress, the Corps cannot unilaterally terminate planning.

(4) Projects with construction funds. Appropriation of construction funds is a major project milestone, signifying a decision by Congress to proceed with the project. All non-Federal commitments have presumably been met, and at that late point a Governor's objection should not, in itself, be the grounds for terminating a project. As a practical matter, projects that have been funded for construction but have not proceeded--or have only had minimal land acquisition--are in a somewhat different status than those actually under physical construction. If a Governor objects before construction is underway, the Appropriations Committees should be notified and the Corps position outlined. Ordinarily, the Corps defers all contract awards until after the next appropriations hearings in order to give the Committees an opportunity to explore the matter carefully, and construction would proceed if funding is continued. For projects where construction is underway, the Corps cannot, on its own, terminate construction except for engineering reasons. If a Governor raises objections to a project physically under construction, existing contracts should be continued. New contracts can be deferred until after appropriation hearings have been conducted, if they do not seriously delay progress on the project. Otherwise, the Corps should inform the committees of its intention to award new contracts and do so unless instructed not to. Only the courts or Congress can halt a project in this category.

CHAPTER 4

MANAGEMENT OF THE CIVIL WORKS PROGRAM

4-1. Delegation of Authority. Decentralization through delegation of authority is a basic tenet of the Corps organization and structure. To achieve decentralization, managers at each level are vested with sufficient authority to discharge their missions. It is the policy of the Chief of Engineers that every manager will receive from his superior clearly defined policies, principles, and criteria. Compliance with this guidance is checked with a minimum number of essential personal contacts, such as Command Inspections, staff visits, IG Inspections, various types of audits and a few well designed reports. Authority is ordinarily delegated to the next subordinate manager if: facts upon which to formulate a prudent decision are available to the manager; adequate resources, including personnel possessing the specialities and experience to make a professionally acceptable decision are available to the manager, or can be economically made available; no restriction on delegating or discharging the authority has been imposed by law or regulation of higher authority. (ER 1-1-3; ER 10-1-2)

4-2. Organizational Structure.

a. Office of the Chief of Engineers (OCE). OCE is the headquarters staff required to assist the Chief of Engineers in planning, directing, and controlling the activities of the Corps of Engineers. As a basic policy OCE performs staff supervision. Field activities direct, control and execute operations. The Civil Works functions of the Office, Chief of Engineers are supervised by the Director of Civil Works with requisite support from other Directorates and separate offices of OCE. The organization of the Office, Chief of Engineers, as defined in ER 10-1-1 is shown in Chart 4-1.

b. Directorate of Civil Works. The Director of Civil Works is responsible to the Chief of Engineers for the supervision of matters relating to the planning, design, construction, operation, and maintenance of the Corps civil works. Such works include management and improvement of rivers, harbors, and waterways, for navigation, flood control, multiple-use purposes and shore protection projects or programs. The Director is also responsible for the administration of laws to protect and preserve the navigable waters of the United States; for the conduct and direction of emergency operations pursuant to special authorities for flood control and navigation; and for the accomplishment of special projects as assigned. The

organization of the Civil Works Directorate in OCE is shown in Chart 4-2.

4-3. Boards and Commissions. Offices which advise and support the Chief of Engineers in civil works functions include:

- a. Coastal Engineering Research Board (CERB). This advisory board provides broad policy guidance and reviews plans for the conduct of research and development in the field of coastal engineering, recommends priorities of research projects in consonance with the needs of the coastal engineering field and the objectives of the Chief of Engineers. (ER 10-1-16)
- b. Board of Engineers for Rivers and Harbors (BERH). This board conducts independent reviews of planning documents and specials reports as requested by Acts of Congress or resolutions of Congressional Committees, or as directed by the Chief of Engineers. These reviews are for the purpose of determining the advisability of authorizing the construction of works for water resources development. The Board also reviews some Phase I General Design Memoranda and General Design Memoranda for proposed replacement or reconstruction of existing navigation improvements under the authority of Section 6 of the 1909 River and Harbor Act. (ER 10-1-7)
- c. California Debris Commission (SPKCD). This commission conducts studies and develops methods for the restraint and disposition of debris accompanying hydraulic mining; regulates hydraulic mining in the drainage areas of the Sacramento and San Joaquin Rivers, California, so that debris will not be carried into navigable waters or otherwise cause damages; and develops plans for control of Sacramento River floods. (ER 10-1-6)
- d. Mississippi River Commission (MRC). The statutory mission of the MRC whose boundary extends from Cairo, Ill., to the river's mouth, is to "take into consideration and to mature such plan or plans and estimates as will correct, permanently locate, and deepen the channel and protect the banks of the Mississippi; improve and give safety and ease to the navigation thereof; prevent destructive floods; promote and facilitate commerce, trade, and the postal service and, when so prepared and matured, to submit to the Secretary of the Army a full and detailed report of these proceedings and actions and of such plans with estimates of the cost thereof for the purposes aforesaid to be by him transmitted to Congress" (33 USC 647). MRC and its work are funded separately from other Civil Works projects under its own program entitled "Mississippi River and Tributaries." (ER 10-1-5)

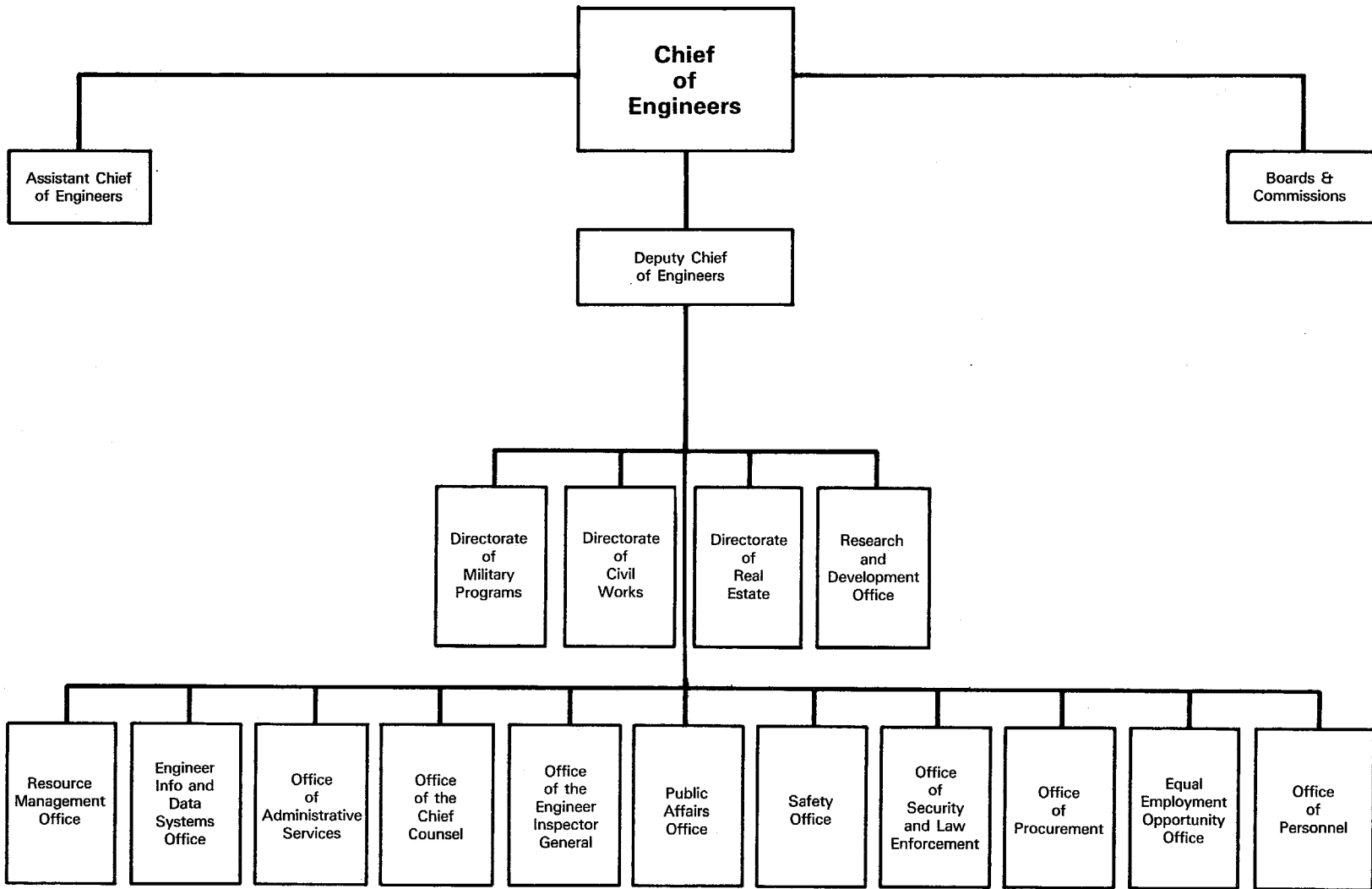


CHART 4-1 ORGANIZATION, OFFICE OF THE CHIEF OF ENGINEERS

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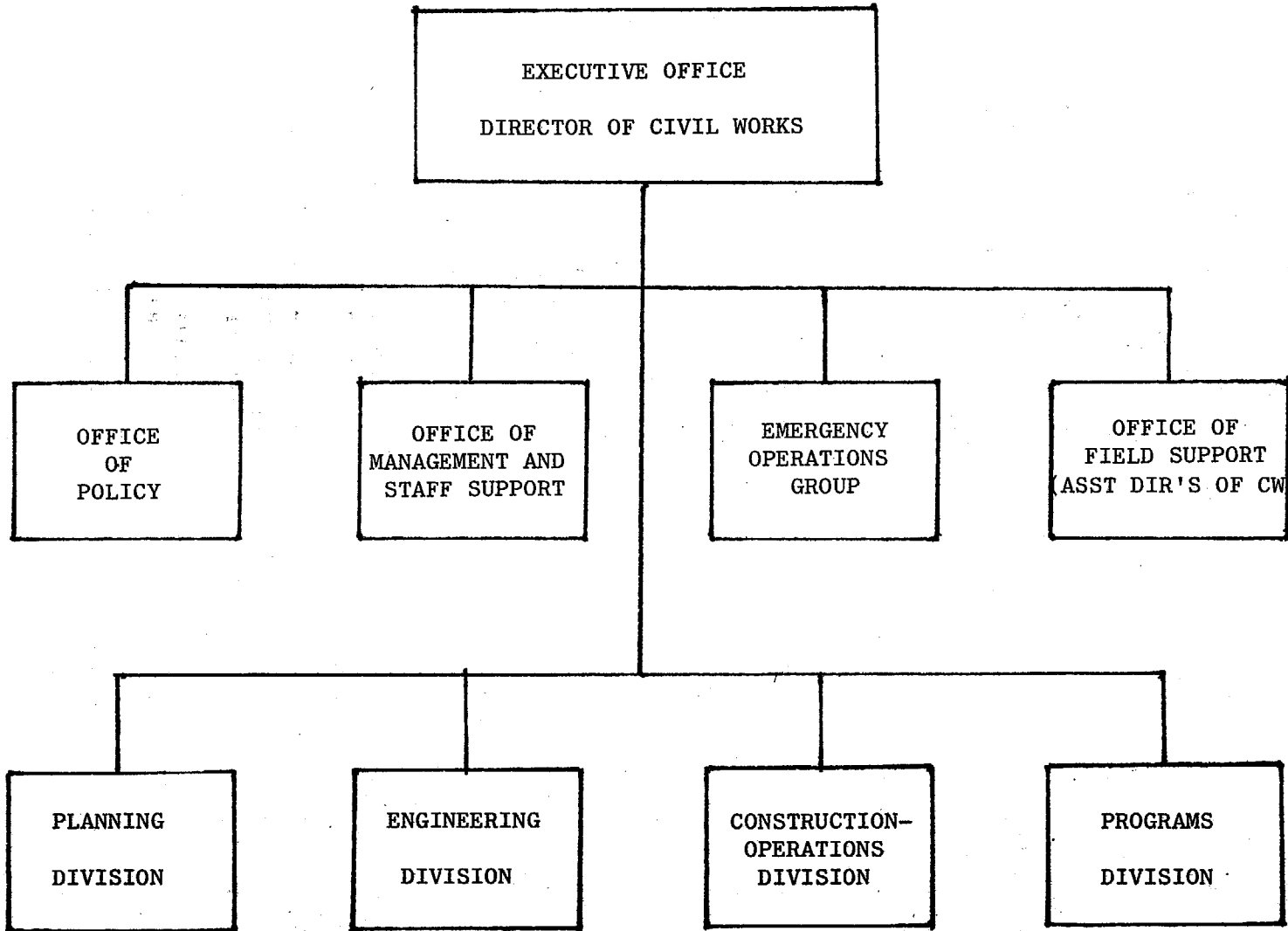


CHART 4-2 - ORGANIZATION OF DIRECTORATE OF CIVIL WORKS

e. Shoreline Erosion Advisory Panel (SEAP). The function of this panel is to advise the Chief of Engineers during a five-year period concerning shoreline erosion control development and demonstration program. The program consists of planning, constructing, operating, evaluating and demonstrating prototype shoreline erosion control devices, both engineered and vegetative, with emphasis on low-cost shoreline erosion control devices located on sheltered or inland waters. (Sec 54 of P.L. 93-251)

f. Chief of Engineers Environmental Advisory Board. The Environmental Advisory Board consists of six members selected by the Chief of Engineers representing a broad range of expertise and experience in environmental matters. The Board serves as advisor to the Chief of Engineers primarily for environmental policy and procedural matters.

4-4. Field Offices. The bulk of the Civil Works program assigned to the Chief of Engineers is accomplished through delegation to field officers and their staffs, under the supervision of OCE.

a. U. S. Army Engineer Divisions. These supervisory offices have jurisdiction over specified geographical areas. In discharging this responsibility Division Engineers:

(1) Administer the mission of the Chief of Engineers involving Civil Works planning, engineering, construction, operation and maintenance of facilities and related real estate matters.

(2) Command and supervise districts assigned to their control. This supervisory responsibility includes review and approval of the major plans and programs of the districts, implementation of plans and policies of the Chief of Engineers and review and control of district operations.

(3) Assign missions to the districts, coordinate execution, develop cooperative interests, and represent the division as a whole.

b. U. S. Army Engineer Districts. These are the principal planning and project implementation offices of the Corps. In discharging their responsibilities, District Engineers:

(1) Prepare and submit water resource needs and development studies in response to specific Congressional resolutions.

(2) Prepare engineer studies and develop the design for facilities.

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(3) Construct civil works facilities.

(4) Operate and maintain major water resource projects.

(5) Administer the laws for the protection and preservation of the navigable waters of the United States.

(6) Acquire, manage and dispose of real estate.

c. Research, Development and Support Activities.

(1) Water Resources Support Center (WRSC). Organizes, manages and performs studies and analyses for meeting regional, multi-regional and national objectives; to develop and coordinate guidance and new, innovative techniques in planning the comprehensive management and development of the Nation's water and related resources; to organize, manage, and coordinate all dredging related activities of the Corps; to provide consultative and problem-solving services and technical support to Corps field offices in the areas of water resources management and development and water resources data collection and monitoring. The Institute for Water Resources; the Port Facilities Division of the Board of Engineers for Rivers and Harbors; the Waterborne Commerce Statistics Center, New Orleans; the Hydrologic Engineering Center, Davis, California; and the Marine Design Division, Philadelphia are assigned to WRSC.

(2) U. S. Army Engineer Waterways Experiment Station (USAE WES). Conceives, plans, and executes engineering investigations, and research and development studies, in support of the Chief of Engineers and other Federal agencies, through the operation of a complex of laboratories in the broad fields of hydraulics, soil mechanics, concrete, engineering geology, rock mechanics, pavements, expedient construction, and environmental relationships. (ER 10-1-8)

(3) U. S. Army Coastal Engineering Research Center (CERC). Conceives, plans, conducts, and publishes research and data collection in coastal engineering and nearshore oceanography in order to provide a better understanding of, and scientific and engineering data and design criteria for, coastal winds, waves, water levels, tides, currents, and materials as they apply to shore and beach erosion control; flood and storm protection; the location, layout, design, construction, operation, and maintenance of harbor and of coastal and offshore structures; navigation improvement; and recreation; and to determine the effects of the coastal activities of the Corps of Engineers on the ecology of the coastal zone. Provides specialized consulting services and training on coastal engineering. (ER 10-1-9)

(4) U. S. Army Construction Engineering Research Laboratory (CERL). Develops methods of advancing the concepts and technology of the design, construction, operation, and maintenance of all types of Federal structures and facilities, through research, investigation, and analytical studies. (ER 10-1-26)

(5) U. S. Army Cold Regions Research and Engineering Laboratory (CRREL). As the Army Laboratory for science and technology in the cold environments of the world, USACRREL conducts and coordinates research and surveillance of technology applicable to the Army's needs in those geographic areas of the world where cold presents a severe problem. USACRREL is responsible for the research program in wastewater management via land treatment conducted in support of the Urban Studies program, and other Corps requirements for design, construction and operational criteria. It also has responsibility for the research project on Ice Engineering which provides for technical analysis and the development of techniques and designs for the solution of ice problems. (ER 10-1-25)

(6) U. S. Army Engineer Studies Center (ESC). Accomplishes studies that require assessment of the various interactions and implications affecting decisions relative to engineer systems. (ER-10-1-29)

(7) Corps of Engineers Hydrologic Engineering Center (HEC). The Center provides services to all offices of the Corps of Engineers associated with hydrologic engineering techniques and procedures. (ER 10-1-24)

(8) U. S. Army Engineer Data Processing Center (EDPC). The Center provides a central data processing service for ADP systems design, computer programming, collection, compilation, and production of reports and statistical data. (ER 10-1-43)

(9) U. S. Army Engineer Topographic Laboratories (ETL). Accomplishes research and development into the topographic sciences; provides scientific and technical advisory service to meet environmental design criteria requirements of military material developers; provides environmental resource inventory requirements of military and non-military programs. (ER 10-1-45)

(10) U. S. Army Engineer Institute for Water Resources (IWR). Develops methodology and guidance to be utilized by the Corps of Engineers for planning the comprehensive development and management of the Nation's water and related resources; initiates, performs and monitors studies to evaluate existing planning methods and criteria

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and to develop new and innovative techniques; performs studies and analyses to define policy issues and recommends alternative policy positions. (ER 10-1-23)

4-5. Institutions for Management of River Basin Operations.

a. Institutional Arrangements. The U.S. Water Resources Council (WRC) published a report in August 1967, on "Alternative Institutional Arrangements for Managing River Basin Operations." This report describes institutional arrangements developed and used to improve basin-wide management of the Nation's water and related land resources. The report identifies eight patterns of administrative organization which can be used to integrate management efforts: Interstate compact; Federal-Interstate Compact; River Basin Commission (Title II, Water Resources Planning Act); Basin Inter-Agency Committees; Regional Federal-State Commissions (Appalachian Regional Commission); Intra-State Special District (Soil and Water Conservation Districts); Federal Regional Agency (TVA); and a Single Federal Administrator (Colorado River):

(1) Interstate Compact. This is an agreement between two or more States whereby they obligate themselves to the terms of the compact. Such a compact must be consented to by Congress, but does not obligate the Federal Government to the terms and conditions of the compact. The Federal Government often assists, through a Federal representative, in the development of the compact and in the work of any compact-created agency. Interstate compacts can serve a wide range of functions, from the simple one-time allocation of the waters of an interstate stream to the vesting of enforcement and regulatory powers in an entity whose judgments are binding upon the member States (for example, as to water quality). A compilation of interstate compacts relating to water resources is contained in House Document 319, 90th Congress, "Documents on the Use and Control of the Waters of Interstate and International Streams".

(2) Federal - Interstate Compact. The most significant difference between this agreement and the interstate compact is that the United States is a signatory party. Except as stated in the compact, the exercise of Federal powers is subjected to the terms and conditions of the compact and the authority of any compact-created agency. The compact form must, as with the interstate compact, be consented to by the Congress. The Federal-Interstate compacts have been used to implement, in a single basin authority, the full range of managerial planning, construction, and operation and maintenance functions. The first of two such compacts, the Delaware River Basin Compact, is administered by the Delaware River Basin Commission. The second is the Susquehanna River Basin Compact administered by the Susquehanna River Basin Commission. In granting consent to the compacts, Congress attached reservations to prevent

impairment of the future exercise of Federal power and to avoid limitations on Congressional power to pass laws inconsistent with the compact.

(3) River Basin Commissions (Title II). River basin commissions are established by the President pursuant to Title II of the Water Resources Planning Act. The WRC and not less than one-half of the States within which the subject basin lies must concur. Members of a commission include representatives of interested Federal agencies and the affected states. These commissions are limited to planning and coordinating activities, which include preparing and keeping up-to-date a comprehensive plan for water and related land resources development within the basin; recommending priorities for data collection, investigation, planning, and construction of projects; and submission to WRC of recommendations for implementing the plan. They do not have authority to construct or operate projects. The participation by many agencies in the joint planning effort requires a significant amount of coordination in management and administration.

(4) Basin Inter-Agency Committees. These committees are composed of basin states and of interested Federal agencies acting through interagency agreement. These groups may manage framework studies and assessments and Regional or river basin plans, under the direction of the Water Resources Council. The committees cannot undertake construction or operation of projects. Unlike the institutional arrangements noted above, inter-agency committees are not created by statute and therefore have no statutory powers in their own right.

b. Activities. Compacts, river basin commissions, and Interagency committees influence the management of water and related land resources. The Chief of Engineers encourages their activity, and cooperates to the maximum extent possible.

CHAPTER 5

PLANNING INVESTIGATIONS

5-1. Authorization of Investigations. The Corps may undertake investigations of water and related land resources plans under specific authorizations by Congress or, for smaller studies, under general continuing authorities. Specific authorizations are either legislative actions by Congress or resolutions by either the House Public Works and Transportation or Senate Environment and Public Works Committee. Section 1 of the Water Resources Development Act of 1974 (Public Law 93-251) established a two-phase authorization procedure for major projects. Continuing authorities permit the Secretary of the Army and the Chief of Engineers to undertake investigations and construction of projects having a Federal cost not exceeding: \$2,000,000 for small flood control projects, \$3,000,000 in areas that have been designated disaster areas within the past 5 years; \$2,000,000 for small navigation projects; \$1,000,000 for small beach erosion control projects, \$250,000 for clearing and snagging; and, \$250,000 for emergency bank protection. A project under the special continuing authorities is the same independent and complete-within-itself project that would be recommended under regular authorization procedures. Other legislation empowers the Secretary of the Army and the Chief of Engineers to undertake investigations for modifying completed projects or their operation (Section 216 of the 1970 Flood Control Act), for modifying or adding to structures and operations of structures or for acquiring lands to conserve wildlife on projects not substantially completed before August 1958 (Section 2 of the Fish and Wildlife Coordination Act), and for mitigation of shore damage due to navigation projects (Section 111 of the 1968 River and Harbor Act). Section 22 of Public Law 93-251 establishes a program of cooperative assistance to States in preparation of comprehensive plans for water resources development, utilization, and conservation.

5-2. Types of Civil Works Investigations. The types of planning investigations conducted by the Corps vary in purpose of investigation, size of area, detail, number of agencies participating, nature of study authorization, and priority of need.

a. Framework Studies and Assessments (Level A). These studies are of regional or national scope. They are directed by the Water Resources Council with the Corps generally a major participant. Framework studies and assessments of major regions are designed to: (1) inventory the extent of water and related land problems, needs, and desires of people for the conservation, development, and

utilization of water and land resources throughout the region; (2) indicate the general approaches that appear appropriate for their solution; and (3) identify specific geographic areas with complex problems where more detailed regional, river basin, or implementation planning investigation and analysis are needed. Framework studies and assessments consider Federal, State, and local means of implementation and are multiobjective in nature. They do not normally provide a basis for recommending specific action for water resource development.

b. Regional or River Basin Studies (Level B). These studies are directed by the Water Resources Council generally with study participation by the Corps. They are reconnaissance-level evaluation of water and land resources more detailed in scope and more limited in area than framework studies. They are prepared to resolve complex long-range problems identified by framework studies and assessments and vary widely in scope and detail; they involve Federal, State and local interests in the area's water policy coordination and plan formulation; and they identify and recommend action plans and programs to be pursued by individual Federal, State, and local entities. Regional or river basin planning studies are concerned with a broad array of multiobjective component needs. Identification of the more urgent elements of the plan that require early action is used to guide subsequent implementation studies.

c. Implementation Studies (Level C). Implementation studies are detailed program or project feasibility studies generally undertaken by the Corps for the purpose of recommending authorization or initiation of plans to solve water resource problems. The studies can be conducted to implement findings, conclusions, and recommendations of framework studies and assessments and regional or river basin studies. Plan formulation for implementation studies focuses on the preparation of a recommended plan of action to meet long term needs and alleviate problems in a manner consistent with other long-range plans. Plans are oriented toward an identified set of planning objectives for the study area.

(1) Survey, Review and Interim Studies (Feasibility Studies). These are detailed studies for decision-making purposes concerning the need for and desirability of undertaking specific projects and programs. This is the largest class of Corps implementation studies. They are referred to as review studies when the study authority directs the review of a previous report. They are referred to as Interim studies when accomplished as a partial response to a large survey scope planning effort. While partial

(Interim) response to a study authority may permit earlier consideration of high priority problems of limited scope, it may also limit possible alternatives for the subsequent comprehensive planning effort.

(2) Legislative Phase I Studies. These studies are a continuation of pre-authorization planning authorized by Congress as part of the two-stage authorization process (para 6-3c). This process was used for selected projects in the Water Resource Development Acts of 1974 and 1976. Under this process a second report and EIS would be submitted to Congress for consideration of construction authorization.

(3) Investigations Under Continuing Authorities. These implementation studies are made to determine appropriate Corps action under one of the Special Continuing Authorities (programs of small projects for flood control, navigation, beach erosion control wherein legislation limits Federal expenditure per project). They differ from basic implementation studies by being more detailed in areas considered and in that they do not require specific Congressional authorization action. They are normally initiated by reconnaissance (Preliminary Feasibility) studies which are brief, non-detailed studies undertaken to determine whether more detailed implementation studies of specific problems are warranted. The Detailed Project Reports are prepared and serve as a basis for approval by the Chief of Engineers of a project for construction and also serves as a basis for preparation of contract plans and specifications. (ER 1105-2-50)

(4) Special Investigations. These include studies in the Corps report program which involve special considerations and may not be confined to natural river basins. They are carried out by the Corps with the cooperation, as necessary, of other Federal agencies and the States concerned. An example is the Northeastern United States Water Supply Study, which provides for development plans to meet long-range water supply needs for that area. The level of detail for Special Investigation Studies can vary from that of framework assessments to that of implementation studies.

(5) Urban Studies. Urban Studies are considered Level C studies although they do not develop alternative plans to the same level of detail as do other Level C studies. Urban studies generally utilize the first two of the three planning stages (para 5-3). An urban study continues into stage 3 only to support a recommendation for implementation of a plan element by the Corps of Engineers. (ER 1105-2-22)

d. Post-Authorization Studies (Advanced Engineering and Design). Phase I post-authorization studies provide an orderly extension of pre-authorization planning in both scope and detail. They update or reaffirm in greater detail the basic plan presented to Congress in the survey report with adjustments for physical, economic, environmental, and social changes which have occurred subsequent to the basic planning period and recommend appropriate changes. Their implementation is time-phased with the GDM Phase II, and the functional Design Memoranda. There are no Phase I or Phase II studies for projects under Special Continuing Authorities. (ER 1110-2-1150)

e. Flood Plain Information Studies. Section 206 of the 1960 Flood Control Act, P.L. 86-645, as amended, authorized studies of flood plains. Flood plain information reports were prepared on request during the period 1960 through 1978. These reports, which covered floodplains in over 3000 places, were phased out as new starts on non-Federal lands because of their similarity to flood insurance study (FIS) reports (para 24-18).

f. Assistance to States. Section 22, Public Law 93-251 authorized cooperation with States in the preparation of comprehensive plans for the development, utilization and conservation of the water and related resources of drainage basins located within the boundaries of the State and to submit to Congress reports and recommendations with respect to appropriate Federal participation in carrying out the plan. Expenditures in any one State can not exceed \$200,000 in any one year. Corps input to the State planning program is on an effort or service sharing basis in lieu of an outright grant (ER 1105-2-81). Section 214 of P.L. 89-298 and Section 204 of P.L. 91-611 provide authority to undertake studies in New York and Puerto Rico.

g. Research and Similar Planning Investigations. Research and similar study activities are accomplished by various Corps research offices in support of the Corps planning program or to further knowledge of unusual or special planning problems. The research category includes social, environmental and economic studies pertaining to such matters as regional ports, disposal of dredged material, public participation, and analysis of the effects of existing projects, as well as the generalized research in water resource areas such as hydrology, geology, and coastal engineering. Supporting activities by other agencies include stream gaging, precipitation studies, and fish and wildlife studies.

5-3. The Planning Process. The objective of the multiobjective planning framework is to guide planning for the conservation, development, and management of water and related land resources. The framework requires the systematic preparation and evaluation of alternative ways of addressing problems, needs, concerns, and opportunities under the Principles and Standards (P&S) objectives of National Economic Development (NED) and Environmental Quality (EQ). This results in information necessary to make effective choices regarding resource management under existing and projected conditions. Alternative plans are formulated without bias to structural or nonstructural measures.

a. Plan Development. Plans are developed in three stages, initial, intermediate, and final. During the initial stage, planners formulate a conceptual plan of study to guide subsequent planning. During the intermediate stage, a broad range of plans is developed and analyzed. In the final stage, plans are screened and detailed plans developed to furnish a basis for selection and recommendation. During each stage four functional planning tasks -- problem identification, formulation of alternatives, impact assessment, and evaluation -- are accomplished. A higher level of detail for data and analysis and more precise alternative plans are obtained as the study progresses through each plan development stage.

b. Plan Development Stages. Developing plans in three stages provides for improving and increasing the level of detail and reliability of data and analyses, and for incrementally developing more precise alternative plans throughout a study. The three stages are described below and are discussed more fully in ER 1105-2-210.

(1) Stage 1 - Reconnaissance. During the initial stage, the four planning tasks are performed at a preliminary level of detail to define the scope and character of the study to determine whether additional study is warranted and as a guide to subsequent planning. During this stage, principal emphasis is on identification of the range of issues related to resource management in the study area. Because of the introductory nature of the planning tasks at this stage, the effort generally involves analyzing a wide range of available data, which may be more qualitative than quantitative. The general purpose of this stage is to make an initial analysis of water and related land resources management problems and how they could be solved. The product is a Reconnaissance Report.

(2) Stage 2 - Development of Intermediate Plans. The intermediate stage emphasizes identifying and analyzing the range of alternative ways for addressing the planning objectives.

Considerable emphasis is placed on more specifically defining these objectives. Based on a more definitive analysis of the objectives, alternatives are outlined and refined without concentrating on detailed engineering or design considerations. Data should be sufficient to set forth and analyze alternative concepts of resource management. The expected impacts of these alternative plans are assessed and evaluated, concentrating on their significant consequences. A high level of detail is not appropriate at this stage. The alternatives developed provide choices concerning the different viable resource management options for more detailed studies in Stage 3.

(3) Stage 3 - Development of Detailed Plans. During the final stage, emphasis is on modifying, assessing and evaluating the intermediate alternatives carried into Stage 3 to produce detailed, implementable plans. Design, assessment, and evaluation in this stage require data that is specific and well defined. The alternative plans produced at its completion are at a comparable level of detail so that an effective choice can be made.

c. Functional Planning Tasks. Four functional planning tasks -- problem identification, formulation of alternatives, impact assessment, and evaluation -- each composed of specific activities, are to be carried out during each stage of the planning process. While emphasis may be on a particular activity at a given point in the process, successful accomplishment of each task, as well as the planning process in general, requires continuous integration of all activities. Each activity reflects the result of previous activities and complements the other activities required to carry out the study. The essence of each of the four planning tasks is outlined below:

(1) Problem Identification - Task 1. Problem identification is the determination of the range of water and related land resource problems a study will address. It provides for establishing planning objectives which give direction to subsequent planning tasks. It is carried out by identifying resource management problems and public concerns, analyzing them to determine the physical area to be studied, surveying existing and projected resource conditions in the area, and synthesizing this information into specific planning objectives. The problem identification task, including its associated activities relating to the identification of public concerns, analysis of resource management problems, defining the study area, description of the base condition, projection of future conditions, and establishment of planning objectives is more fully described and characterized in ER 1105-2-220.

(2) Formulation of Alternatives - Task 2. Formulation of alternatives is the development of different resource management plans to address the planning objectives. The plans which are initially formulated assessed and evaluated. Plans which best address NED, EQ and a mix of the two are identified. Candidates for the NED Plan are those which are likely to maximize net economic benefits, and candidates for the EQ Plan are those likely to make significant contributions to preserving, maintaining, restoring, or enhancing cultural and natural resources. During subsequent iterations, candidate plans are reformulated to insure that the best NED, EQ, and mixed plans are included in the final array of alternatives. Designation and reformulation of candidate plans requires substantial professional analysis and judgement and reflects public preferences and desires. The NED Plan and the EQ Plan are not intended to establish a polar condition, since plans which optimize NED and those which emphasize EQ must still meet a range of specific evaluation criteria and, therefore, could be similar or even the same plan. Where the NED Plan and EQ Plan are significantly different, other alternatives reflecting significant trade-offs between them are formulated so as not to overlook the best overall plan. Non-structural measures are considered in Stage 1 and Stage 2 and every reasonable effort is expended to carry such a measure, where viable, through Stage 3. Where relevant to addressing public concerns, "no development" plans are also formulated. The formulation of alternatives task including its associated activities relating to the identification of technical and institutional measures, the consideration of other plans proposed by governmental or nongovernmental interests, and the development of plans is more fully described and characterized in ER 1105-2-230.

(3) Impact Assessment - Task 3. Assessment is the identification, description, and if possible, measurement of the impacts of the alternative plans. Consistent with the requirements of the P&S, Section 102(2)(c) of NEPA, and Section 122 of the River and Harbor and Flood Control Act of 1970, impact assessment provides for analyzing the significant effects of each alternative. These are the economic, social, or environmental consequences of an alternative which would be likely to have a material bearing on the decision-making process. Impact assessment requires forecasting where and when significant effects could result from implementing a given alternative. This determination requires analyzing and displaying monetary and nonmonetary changes in an objective manner based on professional and technical assessment of the resources. The absence of change or no net change from the "without condition" could also be significant in certain instances and care must be taken to surface such information during this task. Describing

impacts does not reflect societal preferences; these preferences are determined through subsequent evaluation. The impact assessment task, including its associated activities relating to determining the source or sources of impacts, identifying and tracing impacts via cause and effect analysis, measuring impacts, and specifying the incidence of impacts is more fully described and characterized in ER 1105-2-240.

(4) Evaluation - Task 4. Evaluation is the analysis of each plan's impacts. Whereas impacts are identified through an objective undertaking largely on professional analysis, evaluation determines the subjective value of these changes. This is accomplished by conducting "with and without" analysis of the alternative plans based on the changes identified in impact assessment and ascribing values to the impacts based on public input and planner's judgment. The process begins by establishing the contributions of each alternative in relation to the planning objectives and the NED, EQ, RD (Regional Development), and SWB (Social Well-Being) account of the P&S. Then the response of the alternative plans to specified evaluation criteria is determined. From this information, judgments are made concerning the beneficial and adverse nature of the contributions of an alternative to establish its overall desirability. After this has been done for each alternative, plans that do not result in an improvement over the "without condition" are eliminated from further consideration. The first three activities listed below provide more explicit information on performing these aspects of evaluation. The relative merits of each remaining alternative in comparison with the other remaining alternatives is then established. By so doing, evaluation surfaces information which is incorporated in succeeding iterations so as to more fully achieve beneficial contributions while reducing adverse contributions. The evaluation task, including its associated activities relating to the appraisal of planning objective fulfillment, appraising system of accounts contributions, the application of specified evaluation criteria, the comparison of plans to effectuate trade-off analysis, and the designation of plans consistent with P&S criteria is more fully described and characterized in ER 1105-2-250.

(5) Iteration of the Planning Tasks. Within each planning stage, the four planning tasks are to be repeated or iterated at least once to develop more precise and detailed plans that more fully address the planning objectives while minimizing adverse economic, social, and environmental impacts.

d. Public Involvement in Planning. The public has significant involvement in the conduct of Corps planning activities. Public involvement is a continuous, two-way communication process that is

essential to successful planning. It involves: promoting public understanding of the manner and means by which water resources problems and needs are investigated and solutions are proposed; keeping the public informed regarding the status and progress of studies and the results and implications of planning activities; and actively soliciting citizen opinions and perceptions of problems, issues, concerns, and objectives, their preferences regarding resource use and alternative development or management strategies. Public involvement programs are planned systematically, and accomplished by: identification of publics; definition of information requirements; and selection of public involvement techniques. (ER 1105-2-800, ER 1105-2-502)

e. Institutional Considerations. An institution is an organization or political/social process that is highly structured, systematized and stable. It may be a formal or informal body, group, or agency as well as one or a set of formalized practices, procedures, customs or traditions. Institutions of both a political and social nature play an essential role in the planning process and can be critical determinants regarding implementability of a plan. Institutions are diverse and wide ranging and include, as limited examples, state governments, local planning agencies, established tax structures and general local or regional attitudes toward financial obligation. The basic analytical task is to determine the requirements imposed by alternative plans and the capability and willingness of existing institutions to meet those requirements. Analysis of institutions helps assure the feasibility of alternative plans. As the planner works through the planning process developing plans that are increasingly responsive to the planning objectives, a parallel effort is carried out whose purpose is to assure plan implementability.

f. Coordination with Federal, State, and Local Interests. The need for cooperation and coordination among Federal agencies concerned with water resources development has become more apparent as the Federal interest in this activity has grown. The interests of affected States and involved local interests are of significant concern and must be recognized and considered. In recent years, this has been amplified by a general concern for the environment, regional economic development, and social well-being.

(1) It is the policy of the Corps of Engineers to coordinate programs and to resolve differences whenever possible. Some of these efforts are established as legislative requirements. For example, in the Flood Control Act of December 22, 1944, and the River and Harbor Act of March 2, 1945, Congress clearly stated that

it is Federal policy to recognize the interests and rights of the States in the development of the watersheds within their borders, and their interests and rights in water utilization and control, in order to protect to the utmost all the established and potential uses of the water of the Nation's rivers. Other examples include the requirements of the Fish and Wildlife Coordination Act, the Clean Water Act, the Water Supply Act, the Federal Water Project Recreation Act, the National Historic Preservation Act of 1966, and the National Environmental Policy Act. In addition to legislative requirements, formal and informal agreements with other agencies, as well as coordination precedents, make coordination a thoroughly integrated part of the water resources planning and development process. The Water Resources Council has distributed a Coordination Directory for Federal agencies.

(2) Investigations are conducted so that affected States or agencies (including A-95 Clearinghouses) are fully included in the planning process. If differences remain in spite of adequate field coordination, the Chief of Engineers attempts to resolve such differences or to arrive at an acceptable working compromise with affected States or agencies. The Chief of Engineers has not made recommendations to the Congress over the express disapproval of the Governor of the State affected. (ER 1105-2-800, ER 1105-2-811)

(3) At the Washington (Departmental) level, coordination is accomplished by the Chief of Engineers through the transmittal of his proposed report, including the Environmental Impact Statement, to the affected States and Federal Departments for their review and comments. The letters expressing the views of the Federal, State, and local agencies are included in the study reports and are transmitted to the Congress along with the report of the Chief of Engineers.

(4) The responsibility for the accomplishment of a Corps of Engineers planning study is vested in the Corps. Accordingly, the Corps must assume full responsibility for the conduct of the various study components, overall plan formulation, assessment, and evaluation, conclusions, and recommendations. Sound, efficient study management and conduct requires full coordination with interested agencies as well as the participation of agencies having appropriate expertise when such agencies also have the capability and willingness to perform. Thus, active participation in the form of advice and assistance, as distinct from routine coordination, is sought from other agencies for those study components or features for which such agencies have an expertise. (ER 1105-2-8)

5-4. Identification and Administration of Cultural Resources. The Reservoir Salvage Act of 1960, P.L. 86-523, as amended provides Federal agencies the authority to expend up to one percent of the amount authorized to be appropriated for the project to conduct cultural resource surveys and follow-on activities. Primary emphasis is to provide for these activities prior to completion of project construction. However, where need for such activities may occur during the operation and maintenance of the project by the Federal government, it will be undertaken. Costs for cultural resource surveys, data recovery, or other mitigation, analysis, and publication are non-reimbursable to the one percent limit. If additional funds are required added authorization from Congress is necessary. The consideration of the effects of projects on cultural resources is initiated in pre-authorization studies. Studies are coordinated with the Heritage Conservation and Recreation Service; the Advisory Council on Historic Preservation; and the appropriate State Historic Preservation Officer. (ER 1105-2-460)

5-5. Consideration of Aesthetic Values. In planning, constructing and operating water resource developments, the Corps gives consideration to the aesthetic consequences of its recommendations and actions. Provisions are made for minimizing those consequences. Normally, the Corps confines itself to mitigation measures. Inclusion of measures to enhance aesthetic values requires advance approval of the Director of Civil Works. (ER 1165-2-2)

5-6. Water Quality Considerations.

a. General. The Federal Water Pollution Control Act of 1972 (FWPCA) as amended by the Clean Water Act of 1977 (CWA) established two Federal permit programs. Section 402 established the National Pollutant Discharge Elimination System (NPDES) which is transferrable to the States, to regulate the discharge of pollutants, in general, into water. Section 404 established a Federal permit program, administered by the Corps of Engineers, to regulate the discharge of dredged or fill material into water. Under the provisions of the CWA, part of this program may be transferred, by EPA, to the States. Once the State assumes responsibility to administer the program the Corps of Engineers must obtain a permit from the State to discharge dredged or fill materials. Section 401 requires applicants for Federal permits to discharge pollutants (including dredged and fill materials) to obtain a State water quality certificate. In accordance with Section 404(r) State permits or certifications may not be required if certain conditions, described below, are met.

b. Federal Projects. Federal water resource projects may not discharge dredged or fill material, not exempted by Section 404(f)(1), unless one of the two following conditions is met:

(1) In accordance with Section 404(r), information on the effects of the discharge of dredged or fill material into waters of the United States, including consideration of the Section 404(b)(1) Guidelines (40 CFR 230) is included in an EIS on the project, and the EIS is submitted to Congress before the actual discharge and prior to either authorization of the project or an appropriation of funds for construction. This procedure would exempt the discharge from regulation under Sections 301, 402 and 404 and is applicable only to projects specifically authorized by Act of Congress.

(2) The District Engineer obtains from the State a water quality certificate pursuant to Section 401(a)(1), or a Section 404 permit as appropriate.

c. Evaluations. The effects of the discharge of dredged or fill material into the waters of the United States is evaluated in accordance with Section 404(b)(1) Guidelines (40 CFR 230) and determinations and findings are made in accordance with those guidelines. If this evaluation was completed prior to 27 December 1977, no further action is taken to meet the requirements of Section 404 unless the location or method of discharge changes.

d. Application to Specifically Authorized Projects.

(1) Survey Reports. When the evaluation of the discharge of dredged and fill material into waters of the United States, including consideration of the Section 404(b)(1) Guidelines, has been completed information on the effects of the discharge is included in the report, and the EIS summary. These documents clearly state that the EIS contains information on the effects of the discharge of dredged (or fill) material, including consideration of the Section 404(b)(1) Guidelines, for submittal to Congress under the provisions of Section 404(r). When the evaluation has not been completed, the report and EIS summary state that the evaluation has not been completed and that the EIS does not include information required by Section 404(r). Phase I reports submitted to Congress under the two-phase authorization procedure are treated as survey reports for Section 404 purposes.

(2) Authorized Projects. If a Section 404 evaluation was completed prior to 27 December 1977, no further actions to comply with Section 404 is taken unless the location or method of discharge changes. For other projects an exemption under Section 404(r) is

sought by submitting an EIS or EIS supplement to Congress, (unless the project was exempted through the authorization process, falls under a Section 404(e) general permit, or was exempted under Section 404(f)). This action exempts the discharge from regulation under Sections 301, 402 and 404, unless the location or method of discharge changes. However, only the discharge of dredged or fill material is exempted from the requirements of Section 402; other elements of the project that may involve discharges of pollutants into water during construction and operation are not exempted. For projects not requiring preparation of an EIS, authorized under the authority of Section 201 of Public Law 89-298, as amended, and projects or elements of projects in which District Engineers have requested completion funds in FY 1979 or prior, permits or water quality certificates are requested from the State.

e. Application to Projects Not Specifically Authorized by the Congress. Required State certification and permits are obtained for all projects authorized under the authority of Section 201 of Public Law 89-298, as amended, and the Continuing Authorities Program (ER 1105-2-50) and emergency activities (ER 500-1-1).

5-7. Plan Selection. The planning process provides the basis for selecting one of the detailed plans and, if appropriate, recommending it for authorization. The selected plan is the one that is in the best public interest regardless of whether or not it is within the existing general authority of the Corps to implement. Plans recommended for Corps implementation must meet two basic criteria: the net benefits rule; and Corps authority to implement (ER 1105-2-200). Measures recommended for Corps implementation as EQ improvements must take advantage of opportunities created or related to the basic project.

5-8. Procedure for Determining Economic Feasibility. The purpose of the evaluation procedure is to obtain an estimate of those costs of a project which can be compared with the estimated benefits to determine whether the project is justified economically. Evaluation involves determining the beneficial and adverse effects of each alternative plan. On 24 May 1979 WRC published a Manual of Procedures for Evaluating Benefits and Costs of Federal Water Resources Projects in the Federal Register for comment. Upon final publication, the WRC procedures will supersede those discussed below and in Chapters 11 to 20, as appropriate. The manual will apply to all projects except those for which funds have been appropriated by the Congress for construction and for those budgeted by the President in the FY 80 budget. The S/A may also exempt projects for which planning is complete or will be complete by the end of FY 80

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or specific additional planning may be ordered which is less than full application. In the interim, the following techniques are utilized as a component of the evaluation activity to refine and optimize project contributions to national economic efficiency while maintaining the quality of the environment.

a. Cost-Estimating Procedure. Estimation of project costs for comparison with benefits involves determining the cost necessary to establish and operate the project; and incorporating this with other amounts such as loss of land yield from otherwise higher uses and interest during construction, into an estimated economic cost. Taken into account are the period the costs are to be incurred, interest charges, amortization of investments during the specified period, and similar factors. The estimated economic cost is expressed in equivalent average annual terms to permit direct comparison with estimated benefits similarly expressed.

(1) Economic Expenditures. The first cost of a project includes:

(a) The expenditure, subsequent to the authorization of the project, of labor, materials, and equipment necessary to design and construct the project, including those needed to minimize or eliminate adverse economic, social and environmental effects required by Section 122 of the 1970 Rivers Harbor Act (para 5-8a(4)).

(b) The costs of land and rights-of-way on which the project is located or which are required for its construction and operation.

(c) The compensation for damages, relocations of structures and facilities, any remedial measures, and all other adjustments expected to be made in connection with the project.

(d) The cost and benefits of highway betterments or improved housing standards, provided in response to P.L. 91-646, are not included in the project benefit-cost ratio. (ER 1165-2-117)

(2) Acquisition. In the case of acquisition of lands and rights-of-way, damages, relocations, and similar items, estimates of first cost are based on the extent of liability of the constructing agency as indicated by past action of the courts and of Congress. This practice excludes allowances for "consequential" damages, although unforeseen circumstances may cause these to occur. Current sales values in the locality concerned are used as the basis for monetary estimates of cost of land and property to be acquired.

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(3) Interest, Amortization, Replacement, Operation and Maintenance. An estimate is made of the period the project will be needed for the intended purposes. Even though a project might be needed indefinitely or for a very long period, for the purpose of economic analysis the estimated useful economic life is limited to 50 years except for large multiple purpose reservoirs, major long-term urban flood protection and main-line agricultural levees and hurricane protection which may estimate up to 100 years project life. The computation of an annual charge includes interest and amortization of the investment, cost of maintenance and operation, and replacements during project life. The maintenance, operation, and administration of a project includes all costs (other than those accounted for as investment costs) which are expected to be incurred during the assumed useful economic life of the project in order to utilize it for the intended purposes. Also included are the estimated costs of the major, as well as minor, replacements of portions of the project which are expected to have useful physical lives less than the assumed economic life of the total project.

(ER 1105-2-250)

(4) Non-Monetary Costs. In addition to the costs just described there are also costs which are not necessarily accounted for in the monetary evaluation. These costs include adverse environmental and social effects such as detrimental effects on fish and wildlife, loss of scenic or historic values of land or property acquired for the project, the loss of accumulated "goodwill" or "established market values" involved when a business enterprise must move to a new location, and other consequential damages. Section 122 of the 1970 Rivers and Harbors Act requires that adverse economic, environmental and social impacts of plans and projects be considered in project evaluation. Specifically, projects should be developed to eliminate or minimize possible adverse economic, social and environmental effects, among which are the following:

- (a) air, noise and water pollution;
- (b) destruction or disruption of man-made and natural resources; aesthetic values, community cohesion, and the availability of public facilities and services;
- (c) adverse employment effects and tax and property value losses;
- (d) injurious displacement of people, businesses, and farms; and
- (e) disruption of desirable community and regional growth.

(5) Adverse Effects and Associated Costs. Associated costs are costs other than those involved directly in establishing, maintaining, and operating the project, but necessary for realization of certain benefits of the project. Associated costs (detriments) may be deducted from the benefit estimates, except for those cases where mitigation measures add to the first cost of the project. The costs of a project are confined to the estimated expenditure of goods, services and intangibles to establish, maintain and operate the project. Costs include expenses incurred to mitigate against damages or detriments of a primary nature resulting from a project. An example is fish and wildlife mitigation. It is not required that all adverse effects must be directly mitigated. A deduction against benefits is made in appropriate circumstances. (ER 1105-2-129; EM 1120-2-101; EM 1110-2-38; EM 1120-2-104)

b. Benefit Estimating Procedures.

(1) Direct Outputs. The first step in the evaluation of project benefits is to determine the physical output of the project (e.g., acre feet of water, surface acres of recreation pool, feet of reduction of flood stage, etc.) The objective of primary economic benefit analysis is to determine increases, net of associated or induced cost, in the value of goods and services which result from conditions with the project, as compared with conditions without the project.

(2) Market. Where the market is considered reasonably adequate and competitive, the value of outputs is based on probable exchange values that are determined by supply and demand factors, and expressed in monetary terms by means of price, at the time of project construction. Where project output is substantial and is expected to influence market prices, a price midway between that expected with and without the plan may be used to estimate the total value. The appropriate market value for certain principal agricultural commodities is specified by the Water Resources Council.

(3) Non-Market. In the absence of an adequate competitive market, the expected costs of production by the most likely alternative source that would be utilized in the absence of the project may serve as a basis for measuring the value of goods and services. Recreation benefits are based on simulated market values.

(4) Unemployed or underemployed labor resources. These benefits are conceptually an adjustment to the cost of the project, because there is no economic cost associated with the use of an otherwise unemployed resource. Benefits are limited to payments to

unemployed and underemployed labor resources directly employed in the construction and installation of the plan. (ER 1105-2-354)

(5) External Economies. In national income evaluation the Corps does not normally attempt to place monetary values on the more extended benefits of a project such as stimulation of business activity, effects of business activity and effects of increased agricultural activity beyond the farm. The rationale is that similar effects would likely result from some other use of the goods and services necessary for the project. However, the proposed WRC manual may require such evaluations.

(6) Non-Monetary or Intangible Benefits. These are benefits that have value in satisfying human needs or desires, but are not fully measurable in monetary terms. They are evaluated and presented in qualitative form in the system of accounts. (ER 1105-2-921)

c. Comparison of Benefits and Costs.

(1) Benefit-Cost Analysis and Ratio. The ratio of benefits to costs, for any proposed undertaking, is one approximate indicator of its efficiency. It serves a purpose similar to the return on investment used in private business when expansion of facilities is contemplated. Costs and damages can be determined in monetary units and are usually computed at present-worth values and then amortized over the period of analysis. Benefits may be either tangible (capable of expression in dollar terms) or intangible (not capable of expression in dollar terms). Tangible benefits, as they are expected to occur, are brought back to present worth by a given interest rate and then amortized to obtain average annual benefits. The ratio derived from dividing average annual benefits by average annual costs is called the benefit-cost ratio. The benefit-cost ratio and net benefits are indicators of project worth. Projects are seldom authorized unless the B/C ratio exceeds unity.

(2) Interest and Discount Rate. The interest rate for discounting future benefits and computing costs, or otherwise converting benefits and costs to a common time basis, is specified annually by the Water Resources Council. Under the existing formula it represents the average yield during the preceding fiscal year on interest-bearing marketable securities of the United States which, at the time the computation is made, have terms of 15 years or more to maturity. The rate may not be raised or lowered more than one quarter of 1 percent for any year. The computation is made as of October 1 each year by the Treasury Department and the rate thus computed is used during the succeeding 12 months. Present policy for

projects which have received appropriations for construction is that the interest rates used to prepare the supporting economic data presented to Congress in justification of the initial appropriation of construction funds (including land acquisition) will be retained in making subsequent evaluations. This is a long standing administrative policy not to be confused with the statutory "grandfather" clause in Section 80 of 1974 WRDA. Section 80 freezes the interest rates at the rate in effect immediately prior to 24 December 1968 for projects authorized prior to 3 January 1969 provided satisfactory assurances of local cooperation were received by 31 December 1969. The administrative policy agrees with the intent and purpose of the grandfather provision of Section 80. It recognizes that local interests may have undertaken financial arrangements or other actions in anticipation of the project. The appropriation of construction funds implies a commitment and raises a strong and reasonable expectation that the project will be built. If after initiation of construction, reformulation studies indicate that another alternative solution to the basic problem is desirable, the current discount rate is applicable to the new solution. Partial reformulation to consider adding a new purpose or expanding an existing purpose, to a project under construction, would also use the current discount rate. An exception would be the addition of fish and wildlife mitigation to an authorized project, for which it is permissible to use the discount rate applicable to the authorized project. Reimbursement rates are based upon the computed rates except for water supply, recreation and irrigation rates are specified by legislation.

d. Project Optimization. This is the process through which tangible and intangible attributes are traded-off to determine the most favorable condition for carrying out an alternative. Optimization results in the most effective physical, economic, social, and environmental mix that the project can achieve. The process involves determining the level of resource use that best satisfies all constraints while maximizing net benefits and assuring efficient project operation.

(1) Project benefits and cost are refined during each iterative stage of planning and quantified in comparable terms to the fullest extent possible. This is to determine the level of resource development i.e., scale, timing and functional distribution at which net tangible benefits will be maximized.

(2) Intangible benefits and costs are determined by a thorough analysis of all significant impacts. These social and environmental beneficial and adverse effects are described in quantitative or qualitative terms, as appropriate.

(3) Determination of the beneficial or adverse nature of each impact provides the basis for trading off. Tangible and intangible costs and benefits are compared and combined in the context of societal preferences in such a way that optimum project solutions to meet the objectives are achieved.

(4) The result of this procedure is an array of projects that have been fully optimized to meet the planning objectives and constraints of the study.

5-9. Indian Lands. Acquisition of Indian Tribal Lands, which have been set aside by treaty, may be acquired by eminent domain only where there is a clear expression of Congressional intent to abrogate or modify the treaty. Project authorization reports must clearly identify Indian Tribal Lands to be acquired to insure that sufficient Congressional authority is given.

5-10. Cost Allocation.

a. Objective. The objective of the cost allocation is to divide the project costs among the purposes served so that all purposes share equitably in the savings realized from the multipurpose construction. In order to obtain an equitable distribution, the costs are distributed so that the allocated share of the costs to any purpose does not exceed its benefits and that each purpose will carry at least its separable cost.

b. Legislation. There is no uniform cost allocation method established by law. For the hydropower function, Section 5 of the 1944 Flood Control Act established the policy that power costs should be repaid through revenues. The continuous broadening of the scope of Federal resource projects has introduced additional needs for cost allocations. Existing law does not assign responsibility to any one agency for making allocations of cost, except for a few projects covered by specific legislation. Thus, the agency responsible for planning, constructing, operating, and maintaining the project is assumed to be responsible for the cost allocation.

c. Administrative Procedures. An inter-agency agreement, 12 March 1954, among the Departments of Army and Interior and the Federal Power Commission recognized three methods of allocation as acceptable. These were the Separable Costs - Remaining Benefits, the Alternative Justifiable Expenditure, and the Use of Facilities methods. This agreement and subsequent understanding standardized major principles and practices for allocations.

d. Principles and Methods of Allocation. Selection of the method to use in each case, except where specified by legislation, must be based on informed judgment. For this reason, it is considered undesirable to set rigid rules for assigning project costs among project purposes. Although there are exceptions, the Corps considers the Separable Costs-Remaining Benefits (SCRB) method as preferable for general application. In most instances this method provides an equitable distribution of total project cost among the different project purposes.

(1) The objectives of the SCRB method of cost allocation are:

(a) To allocate to each project purpose all costs associated with inclusion of that purpose in the project. This amount, referred to as incremental or separable cost, is the minimum that would be allocated to the included purpose.

(b) To allocate costs in such a way that costs allocated to a purpose do not exceed the benefits associated with inclusion of that purpose or the costs of the most economical alternative way of providing equivalent benefits. This amount would be the maximum that would be allocated to the included purpose.

(c) To distribute joint (or common) costs among all project purposes in such a way that each purpose shares equitably in the advantages of multiple-purpose development as compared with alternative single-purpose developments.

(2) While the procedure is complex, the principle is simple. All project costs are distributed among the purposes on the basis of the alternative costs that could justifiably be incurred to achieve equivalent benefits by alternative means. The costs used in an allocation include investment costs and operation, maintenance and replacement costs, all reduced to a common time basis. These costs may be expressed either as a present worth amount or an average annual amount. For allocation purposes, costs and benefits are presented as average annual equivalents.

(3) Although the above principles and methods followed by the Corps in allocations have been developed largely in connection with the determination of power costs, allocations are also necessary where other reimbursable functions such as water supply and irrigation are involved. Also, a cost allocation is required if the project includes future water supply and/or recreation to determine if the costs assigned to these purposes are within legal and administration limitations. Essentially the same principles and standards apply for these other purposes. (EM 1160-2-101)

5-11. Cost Sharing and Repayment.

a. General. Apportionment of project costs is the division or sharing of project costs among the various users, interests and agencies that will pay for the project. The cost allocated to specific project purposes are shared generally in accordance with pertinent Federal laws and the principles and policies discussed below and subsequent Chapters. Pre-authorization survey reports discuss the extent of local cooperation proposed or required and the ability of non-Federal entities to meet such requirements. In the preauthorization stage, a letter will be obtained from the Governor of the State involved, or a letter of intent, a resolution, or similar statement by a properly authorized non-Federal public agency stating its ability and willingness to cooperate. In post-authorization planning, a formal local cooperation agreement or contract is required pursuant to Sec. 221 of the FCA of 1970 as a prerequisite to initiating construction. In accordance with law, authorizations for local flood protection projects expire, if satisfactory assurances of cooperation are not provided by responsible non-Federal entities, within 5 years after being requested by the District Engineer. The amount of the local (non-Federal) cooperation involved, both monetary and non-monetary, is dependent upon the nature of the project under consideration and the general and specific laws pertinent thereto. Cost sharing for EQ improvements not established by law or administrative policy is proposed based upon the closest analogous Federal program. Traditional cost sharing for project purposes which are established by law or Federal policies are summarized in Table 5-1.

b. President's Cost Sharing Policy. On 6 June 1978, the President announced to Congress a series of water policy initiatives. One of these initiatives pertained to cost sharing. With respect to this issue, on 16 May 1979 draft legislation for changing cost sharing for water projects was submitted to Congress. The draft legislation had two parts and would apply to all projects not yet authorized by law.

(1) Require that States provide a legally binding commitment to contribute a 10% cash share of the construction costs associated with vendible outputs and 5% of the costs of other project purposes of water projects within their borders. Construction costs are all costs apportioned to the Federal and non-Federal interests for implementation of the Federal project. These costs are exclusive of non-Federal costs which will be incurred as a result of the Federal project but which are not considered part of the Federal project. Vendible outputs are defined as water supply, irrigation, power, and other benefits of projects for which the Federal government receives

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revenues from project beneficiaries under present policies. The States' cash contribution is to be paid concurrently and proportionately with the Federal contract obligation for project construction and is in addition to any contribution now required of project sponsors or beneficiaries. There would be a cap on State participation per project per year of 1/4 of 1% of the State's general revenues. Revenues from vendible outputs would be shared between the Federal government and the States in proportion to their respective investments.

(2) The modification of existing cost sharing rules so as to require, in addition to the above project financing requirements, a standard 20% non-Federal contribution for structural and non-structural Federal flood damage reduction measures. This requirement applies to all Federal agencies which provide flood protection benefits as project purposes. The 20% contribution can include any combination of cash or in-kind contribution and can be made prior to initiation of construction or in 10 annual installments.

Pending enactment of legislation, reporting officers include cost sharing in accordance with the President's policy in authorization reports to Congress. Cost sharing for project purposes in accordance with the President's policy are show in Table 5-2. Proposals which are not specifically authorized by Congress are proposed in accordance with existing general legislation. A separate cost sharing statement for each resource activity is presented in Chapters 11 through 20. (EM 1120-2-101)

c. Principles and Objectives of Cost Sharing. A fundamental objective of the Congress in authorizing Federal participation in resource development and preservation of environmental quality is to insure that such action makes an optimum contribution to the public good. At the same time, Congress seeks to maintain a reasonable balance between the responsibilities assumed by the Federal Government and those left with the States and other non-Federal entities. A planning agency, accordingly, must carefully consider all available specific indications in law as well as those principles and policies defined by Congress. As reflected in existing Federal water resources legislation, Congress has established generally that the Federal Government:

(1) Should undertake only those activities which local levels of government or private enterprise cannot do as readily or as well from the standpoint of the national interest;

TABLE 5-1
TRADITIONAL COST-SHARING
IN WATER RESOURCES PROJECTS

PROJECT PURPOSE	CONSTRUCTION COSTS PARTICIPATION (1)		LANDS, EASEMENTS, RIGHTS-OF-WAY, AND RELOCATIONS	OPERATION AND MAINTENANCE
	FEDERAL	NON-FEDERAL		
NAVIGATION				
Commercial - General Navigation Facilities	100%	0	Non-Federal	Federal
Recreation - General Navigation Facilities	50%	50%	Non-Federal	Federal
FLOOD CONTROL				
Major Reservoirs	100%	0	Federal	Federal
Local Protection - Structural	100%	0	Non-Federal (2)	Non-Federal
Local Protection - Non-structural	80%	20% (3)	Federal (11)	Non-Federal
Small Reservoirs in lieu of Local Protection	100%	0	Non-Federal (2)	Non-Federal
Major Drainage	50%	50% (3)	Non-Federal (2)(3)	Non-Federal
BEACH EROSION CONTROL				
Federally Owned Shores	100%	0	Federal	Federal
Publicly Owned Shores (Non-Federal)	50%	50%	Non-Federal	Non-Federal (5)
Private Shores-Publicly Used	50% (4)	50%	Non-Federal	Non-Federal (5)
Private Shores-Non-Public Use	0	100%	Non-Federal	Non-Federal
Public Shore Parks (Non-Federal)	70%	30%	Non-Federal	Non-Federal (5)
HURRICANE FLOOD PROTECTION				
Single Purpose	70%	30% (3)	Non-Federal (7)	Non-Federal
Combined with Beach Erosion	70% (6)	30%	Non-Federal	Non-Federal
HYDROELECTRIC POWER				
	100%	Repay	(8)	Non-Federal
WATER SUPPLY				
	100%	Repay	(8)	Non-Federal
IRRIGATION (Storage)				
	50%	50%	(8)	Non-Federal
RECREATION AND RECREATION FISH AND WILDLIFE				
Reservoir Projects - Separable Costs	50%	50%	(8)	Non-Federal
Reservoir Projects - Joint Costs	100%	0	Federal	Federal
Non-Reservoir Projects	50%	50% (3)	Non-Federal	Non-Federal
ENHANCEMENT OF FISH AND WILDLIFE AND ANADROMOUS FISH (RESOURCE ENHANCEMENT)				
Separable Costs	75%	25%	(8)	Non-Federal
Joint Costs	100%	0	Federal	Federal
Anadromous Fish - Federal Program	100%	0	Federal	Federal (9)
Anadromous Fish - Other	75%	25%	(8)	Non-Federal
ENHANCEMENT OF COMMERCIAL FISH (excluding anadromous fish)				
	100%	0	Federal	Federal
MITIGATION OF PROJECT-CAUSED DAMAGES (including fish & wildlife damages)				
	(10)	(10)	(10)	(10)
AQUATIC PLANT CONTROL				
Research, Planning, Evaluation	100%	0	NA	NA
Control	70%	30%	NA	70% Federal - 30% Non-Federal

(1) Construction costs include post-authorization engineering and design and interest costs during construction. It does not include costs of lands.

(2) Local cooperation requirements based on Section 3 of the 1936 Flood Control Act, as amended, consist of providing lands, easements, rights-of-way; hold and save the United States free from damages; maintain and operate the project after completion. In addition, it is policy to require a local cash contribution in windfall land enhancement cases to equal 50 percent of total project costs allocated to land enhancement benefits.

(3) Costs for determination of local share include costs of lands, easements, rights-of-way, and relocations. This results in a required local cash contribution for some projects.

(4) The 50 percent Federal participation is multiplied by the ratio of public benefits to total benefits along the subject private shores. The local share includes the costs allocable to private benefits.

(5) Periodic beach nourishment (sand replacement) is defined in law as construction and eligible for Federal participation for the period specified in project document.

(6) The Flood Control Act of 1970 provides discretionary authority to Chief of Engineers and Secretary of the Army for 70 percent Federal participation of construction cost (exclusive of land costs) of shore projects which include hurricane protection as well as beach erosion control.

(7) Credited toward minimum 30 percent non-Federal share of total investment costs.

(8) Costs are allocated to the project purposes and shared on the same basis as construction costs for each purpose.

(9) Maintenance by Federal agency other than Corps of Engineers.

(10) Cost sharing is the same as for the purposes causing the damages (causative purposes). The entire costs of mitigation including construction, lands required for mitigation, and computed present worth of future operation and maintenance are cost shared on the same basis as for the purpose causing the damage. Responsibility for actual performance of O&M is normally assigned to non-Federal interests.

(11) Lands, easement, rights-of-way, and relocations are shared on the same basis as the construction costs.

NA - Not applicable

TABLE 5-2

PRESIDENT'S COST SHARING POLICY

PROJECT PURPOSE	SPONSOR'S CONSTRUCTION COST PARTICIPATION (1)	STATE FINANCING CONTRIBUTION (11)	LANDS, EASEMENTS, RIGHTS-OF-WAY, AND RELOCATIONS	OPERATION AND MAINTENANCE
<u>NAVIGATION</u>				
Commercial - General Navigation Facilities	0	5%	Non-Federal	Federal
Recreation - General Navigation Facilities	50%	5%	Non-Federal	Federal
<u>FLOOD CONTROL</u>				
Major Reservoirs	20% (2)	5%	(10)	Federal
All Others	20% (2)	5%	(10)	Non-Federal
<u>BEACH EROSION CONTROL</u>				
Federal Shores	0	5%	Federal	Federal
Public Shores (Non-Federal)	50%	5%	Non-Federal	Non-Federal (4)
Private Shores - Publically Used	50% (3)	5%	Non-Federal	Non-Federal (4)
Public Shores - Parks (Non-Federal)	30%	5%	Non-Federal	Non-Federal (4)
<u>HURRICANE FLOOD PROTECTION</u>	20% (2)	5%	(10)	Non-Federal
<u>HYDROELECTRIC POWER</u>	(5)	10%	(6)	Non-Federal
<u>WATER SUPPLY</u>	(5)	10%	(6)	Non-Federal
<u>IRRIGATION (Storage)</u>	50%	10%	(6)	Non-Federal
<u>RECREATION AND RECREATION</u>				
<u>FISH AND WILDLIFE</u>				
Reservoir Projects - Separable Costs	50%	5%	(6)	Non-Federal
Reservoir Projects - Joint Costs	-	5%	(6)	Federal
Non-reservoir Projects	50% (7)	5%	Non-Federal	Non-Federal
<u>ENHANCEMENT OF FISH AND WILDLIFE AND ANADROMOUS FISH (RESOURCE) ENHANCEMENT)</u>				
Separable Costs	50%	5%	(6)	Non-Federal
Joint Costs	-	5%	(6)	Federal
Anadromous Fish - Federal Program	-	5%	Federal	Federal (9)
Anadromous Fish - Other	25%	5%	(6)	Non-Federal
<u>ENHANCEMENT OF COMMERCIAL FISH COMMERCIAL FISHERIES</u>				
(excluding anadromous fish)	-	5%	Federal	Federal
<u>MITIGATION OF PROJECT - (CAUSED DAMAGES)</u>	(8)	(8)	(8)	(8)
<u>AQUATIC PLANT CONTROL</u>	30%	5%	NA	70% Fed - 30% Local

(1) Construction costs include post-authorization engineering and design and interest during construction. It does not include costs of lands.

(2) May be cash, in-kind, or monetary contributions over time.

(3) The 50 percent sponsor participation is increased by 50% multiplied by the ratio of private benefits to total benefits along the subject private shores.

(4) Periodic beach nourishment (sand replacement) is defined in law as construction and eligible for Federal participation for the period specified in project document.

(5) Cost are repayed by users or project sponsor.

(6) Costs are allocated to the project purposes and shared on the same basis as construction costs for each purpose.

(7) Costs for determination of local share include costs of lands, easements, rights-of-way, and relocations. This results in a required local cash contribution for some projects.

(8) Cost sharing is the same as for the causative purposes.

(9) Maintenance by Federal agency other than Corps of Engineers.

(10) Lands, easement, rights-of-way, and relocations are shared on the same basis as the construction costs. The project sponsor may contribute these as part of their share.

(11) Based on the first cost of construction which include all costs for implementation of the project. These costs are exclusive of non-Federal costs incurred as a result of the Federal project but not considered part of the Federal project.

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(2) May bear a part of the costs of projects and programs that benefit the Nation as a whole, or are deemed necessary to protect the interest of future generations, particularly in those fields in which profit-making organizations do not operate;

(3) Should provide for mitigation of any damaging effects of Federal projects, or carry out measures to compensate for such effects;

(4) May, where special circumstances make such action necessary or desirable in the national interest, provide services which normally would be provided by private enterprise or non-Federal public entities. (Examples are when long-range financial returns are not sufficiently attractive in the short-range view of private enterprise; or when costs are included for purposes not readily marketable; or when problems of comprehensive and coordinated development cannot be readily resolved below the Federal level);

(5) May construct certain works for which local interests will be willing to pay, or may provide subsidies, as by permitting repayment at low Federal interest rates;

(6) May develop comprehensive plans embracing even those purposes for which a high degree of responsibility remains with non-Federal entities;

(7) Should not consider all purposes to warrant equal or maximum Federal participation.

The costs of establishing and maintaining resource programs must be borne, in one way or another, by the primary beneficiaries, secondary beneficiaries, State or other non-Federal public entities, or the Nation. (ER 1165-2-1).

d. Formulas, Legislative, and Administrative Rules. The costs of water resources projects under the jurisdiction of the Corps of Engineers are shared between Federal and non-Federal interests in accord with: (1) the provisions of general river and harbor, flood control, and other laws; (2) the specific requirements of acts authorizing the projects in some cases; and (3) administrative instructions issued by the Office of Management and Budget or the Water Resources Council, or approval thereby of specific proposals by the Secretary of the Army in interpretation of general law or discretionary authority, where the rules for cost sharing in particular cases are not specified by law. Legislative authorizations have defined general rules for cost sharing, (such as, the "a-b-c" policy of Section 3 of the 1936 Flood Control Act as

amended), or have prescribed percentages of costs required by non-Federal entities. Some percentage formulas have been devised by the Corps based on analogous precedents (as in reclamation by drainage and irrigation), and others by a sense of equity (as for recreational small boat harbors). The administrative origin of some rules becomes established policy by Congressional acceptance and approval of recommendations for projects proposed on such bases. Arrangements for cost sharing may include one or a combination of several aspects of the program, such as planning, design, construction, operation, maintenance and management, or an interest therein such as provision of advice, data, materials, labor, cash, or other contributions.

e. Special Beneficiary Situations. Much of current cost sharing and reimbursement legislation and policy stems from Section 2 of the Act approved 5 June 1920 (33 USC 547) which specified that:

"Every report submitted to Congress in pursuance of any provisions of law for a survey, in addition to other information which the Congress has directed shall be given, shall contain a statement of special or local benefits which will accrue to localities affected by such improvement and a statement of general or national benefits, with recommendations as to what local cooperation should be required, if any, on account of such special or local benefits."

In addition, the Office of Management and Budget and the General Accounting Office view the incidence of large benefits to a few beneficiaries as warranting special scrutiny in determining the acceptability of proposed conditions of local cooperation. Obvious special situations of this kind are:

- (1) Windfall land enhancement benefits of unconscionable magnitude accruing to limited special interests resulting from reduction of flood hazards;
- (2) Special benefits accruing from navigation improvements that would serve to benefit a single user;
- (3) Special savings to land owners in the cost of fill material or enhancement of land values as a result of disposal of spoil excavated from project areas.

These situations will be identified in pre-authorization studies, and the basis for including or excluding special non-Federal cooperation therefore succinctly stated in the report and its recommendations.

f. Payment. Project costs are sometimes shared by assignment of specific items of work, such as acquisition of land, provision of relocations, etc. In some cases, however, cash payments are required toward first costs, as in local contributions toward small boat harbor projects, recreational developments, and special benefits such as windfalls, land fill, and single user cases. Normally, the payment is in a single lump sum or in annual payments as construction proceeds. However, in special cases, payment may be by several installments, or on a long-term repayment contract with interest. The specific laws and directives for each purpose differ and must be consulted. The recommended arrangements, and options, if flexibility is deemed warranted, should be specified in the authorizing report recommendations. The existence of a responsible non-Federal entity empowered to cooperate with the Corps of Engineers is essential. Its establishment is required as a condition of local cooperation and authorization of a Federal project. Authorities for advance work by non-Federal entities with subsequent reimbursement are available and may be considered when helpful in achieving timely accomplishment of needed actions. Where lump sum or continuing major repayments are not practicable, as in sale of power, other arrangements through Federal power marketing agencies are available. Costs of services, such as at manned boat launching ramps may be collected as warranted economically. Section 40 of PL 93-251 provides general authority to permit local interests to make cash contributions in annual payments as construction proceeds, rather than in a lump sum prior to initiation of construction.

5-12. Conditions of Local Cooperation. The items of local cooperation required as administrative policy are specified in various directives for guidance in the formulation of recommendations. They attain legal standing for a particular project when incorporated in report recommendations and later authorized by Congress or when they are applied under the general continuing authorities for small projects delegated to the Secretary of the Army. Legislative language authorizing a project usually states that the project is authorized in accordance with the recommendations of the Chief of Engineers in a specific document. Occasionally it may contain provisions specifying the conditions of local cooperation. It is a general principle that the requirements specified in the law or document prevail despite any administrative directives or guidelines that may have been issued previously or thereafter.

a. General Requirements. Aside from contributions of money, cooperation required of non-Federal interests may include one or more of the following:

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(1) Provide without cost to the United States all lands, easements, right-of-way, and relocations necessary for the construction, and subsequent operation and maintenance of the project including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial and subsequent disposal of spoil and necessary retaining dikes, bulkheads, and embankments therefor, or the costs of such retaining works. Accomplish without cost to the United States all alterations and relocations of highway bridges, buildings, streets, storm drains, utilities, and other structures and improvements. (In some cases, such contributions may be credited against cash requirements - see Table 5-1);

(2) Hold and save the United States free from damages due to the construction works except damages due to the fault or negligence of the United States or its contractors.

(3) Provide and maintain public terminal and transfer facilities, recreation navigation service facilities, dredge berthing and dock areas, alter utilities;

(4) Assume operation and maintenance of certain types of projects and project facilities;

(5) Regulate use of floodplain areas so as not to degrade or encroach on project capacities or hinder maintenance and operation;

(6) Pay for betterments not project-related;

b. Other Non-Federal Participation Requirements. There are other general but necessary requirements, tailored to individual circumstances. These may include cash contributions, repayment requirements, maintaining public use of beaches in beach erosion control projects, annually informing residents of the limited degree of flood protection being provided, and preventing the release of stored water for purposes other than intended.

5-13. Recommendations. The recommendations in a study report are based upon the study findings and are a concise statement of the plan or improvements recommended, or of no Federal participation at this time, as appropriate. When Federal participation is recommended, clear, standard wording in simple statement form is used since it becomes the basis of authorization and is thus, for all practical purposes, draft legislation. Reliance is placed on a simple citing of the selected plan presented in the report. Similarly, citations of Acts bearing on non-Federal participation is simple and paraphrasing avoided.

a. Nature of Recommendations. Recommendations for Federal participation generally consist of two parts. The first is the authority being sought for the Chief of Engineers to undertake, modify, and maintain, as appropriate, the cited improvements as Federal projects or programs, with discretionary authority for modifications. Second, is the specification of non-Federal participation in construction, operation, maintenance and the requirements of non-Federal assurances for other necessary requirements, such as the prevention of encroachments on flood control channels. It is not necessary to list all routine requirements of generally applicable Federal legislation such as those for pollution control, civil rights, and safety. Where cost estimates are shown, they will be presented in the context of estimates for information and not as binding amounts.

b. Changes in Recommendations. The initial recommendations are those in the basic report, which is usually that of the District Engineer, and should be consistent with legislative requirements, precedents, and the policies of the Chief of Engineers. They may be modified in the subsequent indorsements or covering reports of the Division, BERH, and the Chief of Engineers. For those reports which are submitted to the Congress, there may be instances where the recommendations of the Chief of Engineers are not concurred in by the Administration (WRC/OMB). In most cases, the Administration states its reservations or non-concurrences, and indicates that it has no objection to submission of the report to Congress. In rare cases, they indicates a desire for a change in recommendations. The Chief of Engineers, who is responsible for the soundness of the Corps recommendations, must then determine whether a change is necessary in his report. Finally, however, the Secretary of the Army, in his letter transmitting the report to Congress, may make changes in his recommendations to conform to administration views.

5-14. Release of Information on Civil Works Investigations and Reports.

a. Disclosure of Information. It is Corps policy that the maximum amount of information shall be made available to the public. Disclosure of information is the rule and withholding of information is the exception. The Freedom of Information Act Amendments of 1974 (P. L. 93-502) includes a requirement, among other provisions, that a decision to release or not to release records must be made "within ten days" (as defined therein). The Corps Civil Works function requires preparation of many types of reports leading to a variety of actions. Information must be gathered and used to permit a thorough analysis, reach sound

conclusions, and make appropriate recommendations. Information needed includes market and sales information; present and future commodity movements; plans of expansion and new locations of industry; operating costs of transportation companies; damage estimates of real and personal property; and real estate appraisals. These data are vital to preparation of the Civil Works reports that lead to recommendations concerning sizeable expenditures of public funds. While in many instances the necessary information can be obtained only on a privileged "in confidence" basis, the Corps will endeavor to release sufficient information to permit public scrutiny of the non-privileged data supporting the reports, especially those recommending expenditures of public funds. Questions as to the propriety of release of data considered sensitive or privileged must be identified and forwarded to the Chief of Engineers, the initial denial authority (IDA), within three working days following receipt of the request for a determination. (AR 340-17 and OCE Supplement 1 to AR 340-17)

b. Collection and Use of Privileged Data.

(1) Whenever feasible, information will be requested and obtained in such a manner that it can be released to the public.

(2) Any information or data which has been obtained with the express understanding it will not be disclosed will be used in a manner that will protect the privileged nature of that information.

(3) Upon request, the maximum information consistent with the above will be made available to the public from the Corps Civil Works records.

c. Releasable Information. The following types of data can be made available upon request:

(1) Final reports in response to Acts of Congress and Resolutions of Congressional Committees.

(2) Complete records of public hearings, including transcripts, correspondence, and information from the public except any requested to be held in confidence.

(3) Reports of the District and Division Engineers after issuance of the public notice, or approval of the report by the Chief of Engineers for Detailed Project Reports and General Design Memoranda.

(4) Letters and information to and from the public regarding any type of Civil Works reports except those containing a statement that the contents are to be held in confidence.

(5) Material previously published for public use.

(6) Engineer Regulations (ER's) and Engineer Manuals (EM's) on Civil Works activities.

d. Non-Releasable Information. The following types of information will not be released by the action officer but must be forwarded to the IDA for a determination.

(1) Trade secrets, inventions and discoveries, or other proprietary data. Formulae, designs, drawings, and other technical data submitted in confidence in connection with research, grants, or contracts.

(2) Matters specifically exempted from disclosure by statute.

(3) Privileged or commercial and financial information obtained expressly as confidential (for such time as the person furnishing the information specifies that it is privileged).

(4) Interagency and intra-agency memorandums and letters which would not be available by law to a private individual in litigation with the Department of Defense or any agency of the Department.

(5) Internal letters, memorandums, and other internal communications within the Civil Works element of the Corps of Engineers that contain evaluations, opinions, recommendations, or proposed solutions, and are primarily of a decision-making nature. These include staff papers containing advice, opinions, suggestions or recommendations preliminary to decision or action by the Chief of Engineers and the Department of the Army.

(6) Records, papers and advice exchanged internally in preparation for administrative settlement of potential litigation. Evaluation of contractors and their products which constitute internal recommendations or advice and which involve a significant measure of judgment on the part of evaluating personnel.

(7) Advance information on such matters as proposed plans to procure, lease or otherwise hire and dispose of materials, real estate, facilities, or functions when such information could provide undue or unfair competitive advantage to private personal interests.

(8) Design Memoranda for Real Estate, Public Use Plan, Land Requirements for Public Use, and Master Plans until final acquisition of lands covered has been completed.

(9) Data on commodity origins and destinations, tonnages, costs, etc., if it would identify specific firms or persons and thereby disclose or reveal other privileged information.

(10) Drafts of reports in the process of preparation presenting unresolved questions are not released to the public. In particular, care is taken that reports requiring notification of the Office, Management and Budget and the Public Works and Appropriations Committees of Congress are not released prior to completion of such notifications. This does not preclude necessary coordination with State, local and Federal agencies who are requested to withhold public release of such information prior to completion of the required coordination. Special care is taken to avoid releasing project proposals which are often changed during the review and approval process. Premature disclosure of such preliminary proposals is a disservice to both the public and to the Corps of Engineers. (AR 340-17; ER 360-2-103; ER 360-2-104)

5-15. Sales of Corps Civil Works Publications and Reports. Public Law 85-480 authorizes publishing and sale of information pamphlets, maps, brochures, and other material on river and harbor, flood control, and other Civil Works Activities, including related public park and recreation facilities under the jurisdiction of the Chief of Engineers.

a. One or more gratuitous copies of publications are available upon request by industry, private organizations, or the general public provided stocks permit and there are no restrictions on release, such as inclusion of classified, protected, proprietary, or copy righted information.

b. Quantities distributed per request will not exceed 50 copies. If production cost of the copies is less than \$50, the quantity limitation does not apply.

c. When considered appropriate, a fee may be charged for the copies. See AR 37-30 for a schedule of fees and charges.

d. Requests for copies of publications under the Freedom of Information Act will be processed in accordance with AR 340-17.

e. Sale price cannot be less than cost of reproduction. The cost formula authorized by Title 44 of the United States Code for use by the Superintendent of Documents, Government Printing Office, is applied. The components of the formula are: Cost of press time, cost of paper, cost of bindery operations, and a 50% surcharge added to the total of the first three items. The sale price is obtained by dividing the total cost of these components by the number of publications produced.

f. Proceeds received from the sale of publications are transmitted to the Finance and Accounting Officers for deposit in accordance with Chapter 4, ER 37-2-10.

g. Construction drawings and specifications can be sold to potential contractor bidders. (ER 1180-1-1)

CHAPTER 6

REPORT PREPARATION, PROCESSING AND PROJECT
AUTHORIZATION, DEAUTHORIZATION

6-1. Pre-authorization Reports.

a. Purposes. Planning reports are prepared to document results of a study. The end result is to make fully supported recommendations or provide useful planning information for others, in response to some problem or need. Planning reports show the professional and personal concern of the reporting officer in serving the public interest. They note the effort to arrive at the soundest possible conclusions from the studies, observations, and consultations made in the investigations. (ER 1105-2-920, ER 1105-2-403)

b. Effects. Reports aim for effective presentations that satisfy the purpose for which they were prepared, and generally enhance the effectiveness of the program. Successful presentations are achievable through the continuous application of quality standards and forethought given to report requirements during the information development phases of studies or other reporting effort.

c. Quality. The quality of overall report presentation is suggestive of the adequacy of the studies or information involved and the soundness of any recommendations. Report quality is also a reflection of the Corps capability and competence. Planning reports thus collectively influence the water resource program and its effectiveness. (ER 1105-2-403)

d. Characteristics. The major elements or characteristics of a report to which effort is directed are its organization, content, format, and appearance.

(1) Organization involves the arrangement of the main report and its appendixes containing the technical details and other supporting information. The main report will document the logic of the planning process and its conclusions in accordance with the requirements of the ER 1105-2-200 series. The main report outline is basically structured in accordance with the four functional planning tasks: problem identification, formulation of alternatives, impact assessment and evaluation. Conclusions derived from analyses of economic, environmental, social, and engineering

information will be presented in the main report and will reference data and more detailed analyses contained in the appendixes. Table 1 of the System of Accounts (ER 1105-2-921) is presented in the conclusions section of the main report. A concise EIS will be a part of the main report.

(2) The content of the report also involves the length and level of detail. Such detail will be sufficient to fully support the essential analyses and conclusions of the study, to support the recommendations, and to enable reviewers to understand the rationale for the conclusions and recommendations. This will facilitate detailed reviews conducted by divisions and the Board of Engineers for Rivers and Harbors, policy review by higher authority, and authorization by Congress.

(3) The interrelated report aspects of format and appearance have a bearing on ease of reading and understanding as well as report use.

(4) Inadequate attention to format and appearance detracts from the quality of a study because the visual characteristics of the report often are an implicit gauge of the quality of the study and plan. (ER 1105-2-920, ER 1105-2-403)

6-2. Processing and Review of Pre-authorization Reports.

a. Assignment. Investigations of potential water resources projects by the Corps are authorized in acts or resolutions of Congress. After the President has signed a Congressional Act authorizing an investigation, or after the Chief of Engineers has received formal notification of a committee resolution authorizing an investigation, the Chief of Engineers normally assigns the task of report preparation to (1) the Division Engineer who has jurisdiction in the area subject to investigation, who in turn, assigns the task to the District Engineer for the location; or (2) the President, Mississippi River Commission, in the case of localities under jurisdiction of that commission, who then will normally assign the task to the District Engineer who has jurisdiction. (EM 1120-2-101)

b. Division Review. After the report is completed by the District Engineer, it goes through a series of formal checks or reviews on project design, analysis, formulation, and presentation. The first check is the Division review to insure that required regulations and high standards of professional practice are observed

in the investigations. The principles and procedures prescribed in the Engineering Manuals and Regulations are the basis for Division review. (EM 1120-2-101)

c. Review by the Board of Engineers for Rivers and Harbors (BERH). Upon completion of review of the report by the Division Engineer, copies are sent to the BERH and the Chief of Engineers. Public Notice of the conclusions and recommendations in the report is made by the Division Engineer. Following issuance of the public notice interested parties may send their views to BERH for consideration. Board members other than the Chairman and Resident Member are Division Engineers who obtain the advice of their own staffs for use in formulating their respective views as Board members. The Resident Member's staff of specialists in various aspects of water resources planning prepares staff analyses for use by the Board. The Resident Member and the staff consult with appropriate OCE elements and others (HEC, WES, expert consultants, etc.) as necessary. Review of the engineering aspects of authorization reports are undertaken by OCE and comments are provided to the Resident Member. The Director, Coastal Engineering Research Center reviews the engineering aspects of reports involving coastal works. The Resident Member consults with appropriate OCE elements regarding other report aspects as required. When the Board completes its review, views and recommendations to the Chief Engineers are made public. BERH prepares a proposed report of the Chief of Engineers. (ER 1105-2-903)

d. Referral to States and other Agencies. The proposed report of the Chief of Engineers, together with the reports of the District Engineer, the Division Engineer, the report of the Board, and other-pertinent papers, are submitted by BERH to the Governors of affected States and to Federal agencies having general or specific interest in the investigation, for their review and comment. States and Federal Agencies that review the proposed report of the Chief of Engineers may furnish their comments to the Chief of Engineers within 90 days. (ER 1105-2-903)

e. Submission to the Secretary of the Army. Upon receipt of the comments of other Federal agencies and the States, the final report of the Chief of Engineers is prepared for his signature. This completed report, together with the other pertinent papers is forwarded in the two packages, one for WRC and one for OMB, to ASA(CW) for further processing.

f. Review by WRC. In accordance with EO 12113 reports will be furnished to WRC for impartial technical review by the Secretary of the Army. Proposed rules for this review were published by WRC in

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44 FR 10316 on 16 February 1979. Funds have not yet been provided for this review.

g. Consideration by Office Management and Budget (OMB).

Reports along with the comments of the other Federal agencies, WRC, and the states, as well as a copy of the Secretary of the Army's proposed letter of transmittal to Congress, are furnished to OMB by the Office of the Secretary of the Army for determination of the relationship to the program of the President. (EM 1120-2-101)

h. Submission by the Secretary of the Army. The Secretary of the Army's letter transmits the report of the Chief of Engineers, with accompanying papers, to Congress. This constitutes the final step in the processing of feasibility studies authorized by Congress. (EM 1120-2-101)

6-3. Authorization of Plans for Improvements. Projects undertaken under the Civil Works program receive specific authorization by legislative action of the Congress, except for projects under certain continuing or special authorities. Upon receipt of a report in Congress, it is referred to the Senate Environment and Public Works Committee (SEPWC) and House Public Works and Transportation Committee (HPWTC). Reports that contain recommendations for authorization or information which should be made readily available for future reference are printed as a House or Senate Document and become the basis for congressional authorization action. Reports which do not contain recommendations for authorization are usually not printed but are available to the committees for consideration. The committees or individual members of Congress may, but rarely do, introduce a special bill proposing authorization of a particular project. Normally, the reports are accumulated and are considered by the committees for inclusion in an omnibus authorization bill, usually at 2-year intervals. However, projects of less than \$15 million Federal cost may be approved by resolutions of both Committees.

a. Congressional Hearings. The SEPWC and HPWTC establishes a schedule of hearings. Each report is discussed at a hearing scheduled to permit the Corps to present a brief summary of information and to permit interested members of Congress, other Federal Agencies, the States and the public, opportunity to present their views.

b. Authorization of Projects under \$15 million Federal Cost. Section 201 of Public Law 89-298, as amended, provides a procedure for authorization of projects with an estimated Federal first cost of construction of less than \$15 million. The decision to recommend

the application of the Section 201 Authority is made by the Secretary of the Army. Such recommendation is made in the letter transmitting the study report to Congress. Use of this authority will be recommended by the Secretary of the Army only in those cases where there is little or no controversy and reflects no departure from established policy. Pending enactment of the President's proposed cost sharing legislation the Secretary of the Army has suspended use of this authority. It generally is not used for smaller projects eligible under other continuing authorities. The project is authorized upon adoption of approval resolutions by both the SEPWC and the HPWTC. (ER 1105-2-9)

c. Two-Phase Congressional Authorization. Section 1 of the Water Resources Development Act of 1974 (Public Law 93-251) established a new procedure for authorization of major water resources development projects of the Corps of Engineers. It authorized the Secretary of the Army, acting through the Chief of Engineers, to undertake the Phase I advanced engineering and design for eighteen specifically named major projects substantially in accord with the survey report recommendations. Similarly, the Water Resources Development Act of 1976 (PL 94-587) contained 37 Phase I authorizations. Eight of those are conditional upon submittal of a survey report to the Secretary of the Army and notification to Congress of the approval of the Chief Engineers. If the Phase I results in only minor change from the Survey report plan, and the project is without substantial controversy, the Chief of Engineers, upon transmittal of his finding to that effect to the Committees is authorized to continue project planning pending project authorization by later action of Congress. Division Engineers may proceed with Phase II AE&D upon direction of the Chief of Engineers. If project changes are significant or there is substantial controversy, further planning must be curtailed pending further action by Congress. Authorization of construction by Congress would be provided in a Water Resources Development Act. Land acquisition and commencement of construction must await authorization by Congress. Phase I studies of this type are termed "Legislative Phase I Studies" and are a continuation of pre-authorization studies. They are funded from the General Investigations appropriation category. As a general policy the Corps does not recommend two-phase authorization to Congress. Recommendations for a two-phase authorization require approval of the Director of Civil Works prior to issuance of the Division Engineer's public notice and are made only for compelling reasons which include:

- (1) Congress previously authorized the Phase I GDM stage of advance engineering and design for a plan under investigation;

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(2) The policy issues involved in a study, or the potential size of the federal investment in feasible solutions, warrant an early commitment from the administration and Congress for district engineer to develop and recommend a plan for implementation.

d. Delegation of Authority to Approve Projects. The Secretary of the Army has continuing authority to approve certain flood control, navigation, and shore protection projects with specified limits on Federal participation per project. In addition, there are blanket continuous authorities for snagging and clearing work, for flood control and navigation and emergency bank protection. (ER 1105-2-50)

6-4. Post-Authorization Planning and Engineering Studies. Post-authorization studies are required for authorized construction projects, each reconstruction project, and each rehabilitation project to establish the most suitable overall plan for accomplishment of the improvement and to establish the basic design of the project features. Such studies include an analysis based on current criteria to either reaffirm the basic planning decisions made in the general investigations stage (survey report) or to reformulate the project to be responsive to changed needs since authorization; provide a basis for updating the environmental impacts and effects; and provide for coordination of all aspects of the project with the other governmental agencies and local interests. The results of these studies are presented in reports identified as "Design Memorandum". Individual projects normally require, as a minimum, the submission of a Phase I and Phase II general design memorandum. These may be combined upon approval of the Chief of Engineers. Initiation and scheduling of post-authorization studies depends upon the relative importance of the project, views of local interests and prospects of fulfillment of terms of local cooperation, prospective availability of construction funds and other conditions pertinent to scheduling of the project.

a. Phase I GDM. A Phase I AE&D Study is the planning and related activities required to update a feasibility report. The results of a Phase I AE&D study are presented in a Phase I GDM. This planning document updates the feasibility study information and data on formulation, evaluation, costs and their allocation, items of local cooperation, and public acceptability. The Phase I GDM provides the Chief of Engineers with the basis for approving, or requesting OMB or Congressional approval for, proceeding with detailed engineering and design and may be transmitted to WRC for review in accordance with EO 12113. Some Phase I GDM's may be approved by Division Engineers. (ER 1105-2-32)

b. Phase II report. Detailed technical engineering design is usually accomplished during Phase II AE&D studies. The Phase II AE&D report is a functional engineering design document concerned chiefly with the technical design of the structures necessary to achieve the objectives selected in Phase I. (ER 1110-2-1150)

c. Feature Design Memoranda. For the more complex projects the results of post-authorization studies are presented in a series of design and real estate feature memorandums. (ER 1110-2-1150)

6-5. Project Deauthorization Review Program. Section 12 of Public Law 93-251 as amended by Section 157, PL 94-587, requires that the Congress annually be provided a list of unconstructed Corps of Engineers projects which no longer are considered appropriate for continued authorization. Congressional criteria for consideration for deauthorization action are that the project has been authorized for a period of at least eight years without any Congressional appropriations within the last eight years. Prior to the submission of the list to Congress, the Secretary of the Army, acting through the Chief of Engineers, shall obtain the views of interested Federal departments, agencies, and instrumentalities, and of the Governors of affected states. The concerned members of Congress must also be notified. This list is delivered to both houses of Congress simultaneously while in session. A project on the list becomes deauthorized after 90 calendar days of continuous session unless one of the Committees on Public Works adopts a resolution stating that such project shall continue as an authorized project. (ER 1105-2-82)

CHAPTER 7

PROGRAMMING, BUDGETING AND APPROPRIATIONS

7-1. Budget Preparation.

a. General. The Corps of Engineers' annual budget recommendation is submitted by the Secretary of the Army (SA) to the Office of Management and Budget (OMB) for review in behalf of the President. The recommendation is subject to OMB budget criteria and goals, and is prepared by the Chief of Engineers in consultation with the SA after review and analysis of recommendations of Division Engineers. Budget submissions are prepared on principles and requirements outlined in the annual budget guidance and OMB circulars. The OMB frequently places a specific ceiling on the overall Civil Works budget recommendation.

b. Zero Base Budgeting (ZBB). The Executive Branch of government now formulates the President's Budget using the concepts and methods of ZBB. The ZBB concept involves total re-examining of existing activities (projects, studies, programs) to determine their validity and necessity. Each activity is rejustified and recosted each time a budget is prepared. The method involves assigning a priority ranking in successively increasing levels of performance and funding, starting from zero.

c. OMB Passback. OMB reviews and revises the Corps of Engineers budget request in accordance with then prevailing objectives and criteria of the Administration. The Corps of Engineers budget program is evaluated against other agencies programs to determine its relative performance in meeting the Administrations requirements within the overall President's Budget ceiling. OMB furnishes through the Secretary of the Army the overall budget allowances for programs, studies, and projects; and other guidance as conditions warrant.

d. Congressional Hearings. Following establishment of the President's Budget, the Corps prepares supporting budget data and defends the President's approved budget amounts at Hearings before the House and Senate Appropriations Committees. The position of the Corps is that of full support for the President's Budget recommendations. Testifying Officers do not encourage appropriations in excess of amounts budgeted. Congress reviews and revises the President's Budget request based on then prevailing objectives and criteria of the Congress. The Congress has established a budget process and timetable for completing specific

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activities towards establishing the annual appropriation and revenue amounts. The Budget and Impoundment Control Act of 1974 (PL 93-344) establishes these requirements.

e. Capabilities. Corps personnel, in response to specific questioning, may furnish information to Members of Congress and other interested parties regarding a fiscal capability to use funds in the budget year on a particular study or project in excess of the amount budgeted. Such capabilities are expressed in accord with formally specified language. Extreme care should be exercised to avoid capability overstatements. Unrealistic capability estimates lead to inefficient utilization and the carryover of funds from one year to the next. In developing capabilities, careful consideration must be given to: past experience; obtaining anticipated agreements of local cooperation; accomplishing all needed planning; preparing and processing environmental impact statements, permits, and other required reports; and the manpower being devoted to other activities, including work for other agencies. (ER 11-2-240)

f. Disclosure of Budgetary Information. All budgetary data, such as the budget recommendations of the District Engineers, the Division Engineers, the Chief of Engineers, and the Secretary of the Army are of a confidential nature. These data are not to be released outside of the Department of the Army, except in response to questions of Appropriations Committee members and staff during official testimony on the President's Budget requests or in written response to members of Congress, until all hearings on the President's Budget recommendation by the Appropriations Committees of Congress have been completed. Then disclosure is only in response to a written request from a member of Congress to the Director of Civil Works. The President's Budget amounts are not disclosed until after the Budget message is presented to the Congress. In those cases where OMB releases budget amounts to Congressional Committees prior to presentation of the budget message, those amounts may be discussed with members and staff of those committees only. Budgetary records may be disclosed to the public, if otherwise appropriate, upon request pursuant to the Freedom of Information Act following the end of the fiscal year to which such information pertains. (ER 11-2-240; ER 360-1-1; OMB Circular No. A-10)

7-2. Appropriated Funds.

a. General. It is Corps policy to allocate and use appropriated funds as nearly as practicable in accordance with the program presented to the Congress, including possible modifications by the Congress in its action on the Appropriations Bill.

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Appropriations for surveys and projects are referred to as those amounts agreed to by the conferees at the time of passage of the annual Public Works Appropriations Bills, even though these amounts are subject to reductions when making final allocations to District Engineers. The reduction is necessary to distribute and overall Appropriation Title reduction for "savings and slippage" and other undistributed reductions applied by Congress to the total of the individual allowances.

b. Deferral and Rescission Actions Under PL 93-344.

(1) Deferrals. Deferrals are a withholding or delaying the obligation or expenditure of budget authority provided for projects or activities. Deferrals also include any other type of Executive action or inaction which effectively precludes the obligation or expenditure of budget authority. Whenever the President, the Director of the Office of Management and Budget, the head of any department or agency of the United States, or any officer or employee of the United States proposes to defer any budget authority provided for a specific purpose or project, the President shall transmit to the House of Representatives and the Senate a special message. A deferral may not be proposed for any period of time extending beyond the end of the fiscal year in which the special message proposing the deferral is transmitted to the House and the Senate. Any amount of budget authority proposed to be deferred shall be made available for obligation if either House of Congress passes an impoundment resolution disapproving such proposed deferral. Otherwise, the funds proposed for deferral become available at the start of the next fiscal year or on the earlier date specified in the deferral message.

(2) Rescissions. Rescissions are the permanent withdrawal of appropriated funds because such funds are not required to carry out the full objectives and scope of the appropriations concerned. A rescission differs from a deferral in that there is no intent to ever spend the funds being proposed for rescission. A rescission message to Congress is required whenever the President determines that all or part of any budget authority will not be required to carry out the full objectives or scope of programs for which it is provided or that such budget authority should be rescinded for fiscal policy or other reasons (including the termination of authorized projects or activities for which budget authority has been provided), or whenever all or part of budget authority provided for only one fiscal year is to be reserved from obligation for such fiscal year. The President is required to transmit to both Houses of Congress a special message.

c. Transfers. The Appropriations Committees have delegated to the Chief of Engineers the authority to transfer funds among projects in the construction category, not to exceed 15 percent of the amount available for obligation to a project for any fiscal year. This represents the Conference allowance plus the unobligated balance at the beginning of the year. An exception permits the transfer of up to 25 percent for projects on which the amount available for the year is \$500,000 or less. Transfers beyond these limits must be approved by the Appropriations Committees.
(ER 11-2-201)

(1) Survey or Advance Engineering and Design transfers may be approved by the Chief of Engineers on a somewhat more liberal basis.

(2) It is the policy of the Chief of Engineers to reallocate (transfer) funds within the above cited limitations, only to those surveys and projects which have previously received an approved allocation through the budgetary process.

(3) Transfers between operation and maintenance items are approved on a case-by-case basis considering the urgency, justification and availability of funds.

(4) Within the transfer authorities of the Chief of Engineers, Division and District Engineers have been delegated authority to make transfers, within limits prescribed by OCE, to optimize program progress within Administration and Congressional guidelines.
(ER 11-2-201)

d. Overprogramming. Overprogramming is the establishment of progress goals slightly higher than indicated possible by use of available funds. For high priority activities, Division Engineers are encouraged to prepare advance plans for application of additional funds, should such funds become available for transfer due to unanticipated slippages in other similar activities. The purpose of overprogramming is to provide better utilization of current year funds and to reduce carryovers of unobligated and unexpended balances. Overprogramming of activities must be consistent with anticipated funding in the following fiscal year.
(ER 11-2-240)

7-3. New Start Investment Program. Sound program management demands the careful selection of new starts for those projects which are to enter the multi-year budget cycle for planning and construction. A Civil Works Investment Program is formulated to meet regional needs on a priority basis through the programming of authorized new preconstruction planning and construction projects.

Long-range program objectives are developed by Division Engineers for each of the major water resource regions. Estimates of needs that are consistent with existing assessments including regional growth plans, as well as guidance and criteria provided by the Chief of Engineers are used in developing the objectives.

a. Framework. Estimates of need are used in the process of developing five-year investment programs for new starts in preconstruction planning and construction. An important consideration in the development of the immediate five-year investment program is to satisfy as many of those needs projected 10 years in the future as possible. The longer range needs would be satisfied by subsequent investment programs.

b. Needs and Priorities. In general, plans or projects that are sound, economic and highly desirable are given preference over those with unresolved environmental or other problems. Recent program emphasis is on hydropower and on municipal and industrial water supply and flood control for urban areas and on commercial navigation. The energy crisis has placed greater focus on all hydropower projects as well as the energy-efficient, waterborne transportation of bulk commodities. Projects nearing completion in the planning phase also are given priority so that they can begin accruing benefits.

c. Five-Year New Construction Start Program. Formulation of a five-year program involves these basic priority decisions:

(1) The national investment or the total Federal costs of new projects to be included in the immediate five-year program. (Several alternative levels are normally considered).

(2) An allocation from the overall investment level to each of the major water resource regions. In making this distribution, primary emphasis is given to the relative magnitude of needs in each region.

(3) The project priorities as established by the Division Engineers for each region.

d. Budget Year New Construction Starts. The Five-Year Investment Program for Construction identifies those projects that are candidates for selection and recommendation as new preconstruction planning and construction starts in the President's Budget. The budget year selection process requires consideration of factors other than identifying those projects which best meet regional program objectives. Weighed carefully are such additional

factors as impact on environmental absolutes and future flood plain development; benefit-cost ratio; status of design; compliance with environmental statutes; status of required reports; project support and opposition; the views of affected states and other Federal agencies; and the views and recommendations of Division Engineers. Consideration of these additional factors is designed to assure that the limited funds allocated to new starts are soundly programmed. Current budget procedure involves a joint effort of the staffs of the Chief of Engineers and the Secretary of the Army in developing criteria for selection of the new planning and construction projects to be recommended to OMB for inclusion in the President's Budget. These criteria are published each year in the budget guidance for the year. The selection is made so as to fit within the budget ceiling which OMB has established for the budget year, giving full consideration to the factors noted above.

e. Full Funding. Commencing in Fiscal Year 1979, the budget requests for new construction starts have been on a fall funding basis. Thus far Congress has not concurred with this method of funding civil works projects.

7-4. Classification of Projects. The backlog of uncompleted authorized projects is divided into three categories, "Active," "Deferred," and "Inactive." (ER 11-2-240)

a. Classification Criteria.

(1) "Active" Category. Projects considered to be: necessary and economically justified; engineeringly feasible without requiring modification of the authorized plan beyond the discretionary authority of the Chief of Engineers; generally supported by local interests; and with no anticipated major problems of compliance with requirements of local cooperation.

(2) "Deferred" Category.

(a) Projects on which a restudy is necessary to determine whether they are economically justified.

(b) Projects not opposed by local interests, but for which local interests are currently unable to furnish the required cooperation.

(c) Projects whose authorized plan could be significantly affected by an authorized survey investigation, and therefore should not be undertaken pending the outcome of the survey and Congressional action based thereon.

(3) "Inactive" Category.

(a) Authorized projects with obvious lack of economic justification and for which it is apparent that a current restudy would not develop an economically justified plan;

(b) Projects which, as authorized, are not adequate to meet current and prospective needs, and which would require such substantial modifications and involve such increased costs to obtain an adequate improvement that they should not proceed without new authorization.

(c) Projects generally opposed by local interests, or for which there is no reasonable prospect that the required local cooperation will be forthcoming.

(d) Projects or parts thereof, which have been accomplished by local interests, or another agency, or which have been superseded by another project or for other reasons are no longer required.

b. Reclassification. Project reclassification requires the approval of the Chief of Engineers. A review of project classifications is made annually with recommendations due to OCE by 15 June. However, reclassification may be accomplished as the need develops. When it is apparent that a project should be reclassified, an appropriate report is submitted for decision by the Chief of Engineers. (ER 11-2-240)

7-5. Acceptance and Return of Contributed or Advanced Funds.

a. Categories.

(1) "Required Contributed Funds" as specified in the authorizing project document.

(2) "Contributed Funds" are voluntarily given in advance by local interests for accomplishment of project construction work without expectation of reimbursement.

(3) "Contributed Funds, Other", for locally desired special betterment or for improvements to have been provided by local interest with their own forces.

(4) "Advanced Funds" are local funds contributed in advance of Federal project funding to finance Federal construction of all or part of an authorized project, subject to later Federal reimbursement from appropriated Federal project funds.

(5) "Other Non-Federal Funds" are local funds received pursuant to a relocation agreement to cover the cost of betterments when accomplishment of relocation is by Federal construction contract.

b. Acceptance. Action for the Secretary of the Army is required prior to acceptance of "Contributed Funds", "Contributed Funds, Other", and "Advanced Funds". "Contributed Funds" and "Contributed Funds, Other" cannot be accepted until funds have been appropriated for the work to which they relate or until specific Congressional authority to accept such funds is obtained. Also, "Advanced Funds" will not be accepted unless directed or approved in advance by the Appropriations Committees of the Congress and coordinated with ASA (CW). District Engineers may accept "Required Contributed Funds" and "Other Non-Federal Funds". Section 40 of the Water Resources Development Act of 1974 (Public Law 93-251) authorized extended payments of "Required Contributed Funds." (ER 1140-2-301)

c. Return. Action for the Secretary of the Army is required for the return of all "Advanced Funds" or "Contributed Funds," and "Contributed Funds, Other." Authority for return of excess or unused portions of contributed funds is normally granted concurrently with approval for acceptance. District Engineers are authorized to return unused portions of "Required Contributed Funds" and "Other Non-Federal Funds" as part of the final settlements. (ER 1140-2-301; ER 37-2-10)

7-6. Reimbursement for Advance Non-Federal Work on Projects. Section 215 of the Flood Control Act of 1968 (Public Law 90-483) authorizes the Secretary of the Army, acting through the Chief of Engineers, to execute agreements providing for reimbursement or credit to States or political subdivisions thereof for construction work undertaken at authorized projects. (ER 1165-2-18)

a. Limits. Use of this authority is limited to cases that meet all of the following conditions:

(1) The work, even if the Federal Government does not complete the authorized project, will be separately useful or will be in integral part of a larger non-Federal undertaking that is separately useful;

(2) The work done by the non-Federal entity will not create a potential hazard;

(3) Approval of the proposal will be in the general public interest;

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(4) Only work commenced after project authorization and execution of an agreement is eligible for reimbursement or credit;

(5) Proposed reimbursement will not exceed a \$1 million maximum and is limited to the amount that the District Engineer considers a reasonable estimate of the reduction in Federal project expenditures resulting from the construction of the project component by the non-Federal entity.

b. Congressional Concurrence. Before finally approving any agreement under Section 215, the Chief of Engineers will inform the Secretary of the Army and the House and Senate chairmen of the appropriate subcommittee of the Committee on Appropriations of the proposed arrangements. The Chief of Engineers will not sign an agreement until Secretarial and Committee concurrences are obtained.

c. Timing of Reimbursement. Reimbursement shall depend upon appropriation of funds applicable to the project and shall not take precedence over other pending projects of higher priority.
(ER 1165-2-18)

CHAPTER 8

POST AUTHORIZATION STUDIES
AND
ENGINEERING DESIGN

8-1. Post Authorization Studies. Post authorization studies are required for each authorized construction project, each project modification to assure dam safety, and each rehabilitation project to establish the most suitable overall plan for accomplishment of the authorized improvement and to establish the basic design of project features. Additional information is furnished in paragraph 6-4. (ER 1110-2-1150).

a. Preconstruction Planning (Advance Engineering and Design). Preconstruction planning includes those design studies necessary to complete Phase I and Phase II General Design Memoranda; additional design and real estate studies necessary prior to initiation of construction, including plans and specifications for a major element of work contemplated for the first year of construction; a preliminary Master Plan for recreational development, where applicable, and identification of tracts of real estate to be acquired for public access and for the initial development of recreational facilities; and such work on additional design memoranda, plans, and specifications as is necessary to assure timely and economical future construction scheduling. All preconstruction planning for projects authorized for construction is funded out of the Construction, General appropriation under the category of Advance Engineering and Design.

b. Remaining Engineering and Design. Once preconstruction planning has been completed, engineering and design may be continued when the project is funded as a new construction start, or in some cases, when the project is funded for land acquisition. This phase of engineering and design will complete or initiate all feature memoranda and plans and specifications needed to construct the remaining features of the project in an orderly manner.

8-2. Project Modifications. Congressional authorizations of Corps projects normally include a provision for implementation of the recommended plan with such modifications as the Chief of Engineers may deem advisable, in the interest of the purposes specified. Changes have been classified on the basis of whether they may be approved by the Secretary of the Army or the Chief of Engineers (PAC), or must be submitted to Congress for modification of the existing authorization (S-PAC). Submittal of a PAC or S-PAC may be necessary during post authorization planning, engineering and

design, or construction. Reports already established during these phases are utilized to report these changes to OCE: the Phase I or Phase II GDM, feature design memos or project master plans.

a. Modification Authority Delegated to the Chief of Engineer or Secretary of the Army (PAC). Modifications and changes of a project, necessary for engineering or construction reasons to produce the degree and extent of flood protection or the extent of navigation improvement or other purpose intended by the Congress, are within the latitude delegated to the Chief of Engineers. Examples of such changes are shift of a dam to a nearby better foundation location; changes in channel alignment and dimensions indicated by more detailed studies; changes from a concrete to an earth structure because of lack of proper concrete aggregate; or moderate extensions of project scope, such as necessary to provide flood protection to adjacent urban areas developed since the project was authorized. The Chief of Engineers recognizes that this latitude for changes and modifications of authorized projects is an important delegation of authority which must be exercised carefully. Changes involving the addition of project purposes, significant changes in project cost, scale, features, benefit, location, and costs allocated to reimbursable project purposes require notification of OMB. (ER 1165-2-305)

b. Modifications Beyond Delegated Authority (S-PAC). A proposed modification of an authorized project is brought to the attention of Congress if study after authorization shows that: the scope of functions of the project will be changed materially; the plan of improvement will be materially changed from that originally authorized by Congress; or special circumstances exist which were not known to the Corps of Engineers or recognized by Congress when the project was authorized. Decisions regarding project modifications are made on an individual case basis. Questionable cases are reported to the Chief of Engineers with the views and recommendations of the Division and District Engineer. Modifications beyond the authority delegated to the Chief of Engineers are referred to Congress for authorization.

8-3. Design Sizing of Projects. The basic size of projects is established in the project authorization and subsequent General Design Memorandum. Modification of the project from authorized dimensions may require additional authorization in accordance with paragraph 8-2.

a. Flood Control. Flood control projects are generally authorized to provide a specific "degree of protection." The "degree of protection" afforded by a particular flood control

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project represents the measure of flood severity for which essentially complete elimination of all detrimental flood effects is provided immediately downstream from a reservoir or within the confines of a local protection project. In the design of flood control projects allowances are made for freeboard and channel aggradation. Additional flood control provided by these allowances is not claimed as part of the degree of protection nor are benefits claimed for this allowance.

b. Navigation. Navigation projects are generally authorized to provide a channel of specific dimensions. In accordance with Section 5 of the River and Harbor Act of 1915 channel depths generally signify the depth at mean low water in tidal waters tributary to the Atlantic and Gulf coasts, at mean lower low water in tidal waters tributary to the Pacific coast, and the mean depth for a continuous period of fifteen days of the lowest water in the navigation season of any year in rivers and non-tidal channels. Authorized channel dimensions are understood to permit increase at entrances, bends, sidings and turning places to allow free movement of boats. Authorized channel depths include allowances for vessel draft, squat, rolling and pitching and underkeel clearance. (EM 1110-2-1607, also see para 10-4)

8-4. Aesthetic Treatment and Environmental Design. Maintenance and improvement of the environment is established by P.L. 91-190 as an objective of Federal programs. The environmental quality objective is to preserve or enhance certain water and related resources and amenities that have ecological, cultural, aesthetic or other values which makes them significant in terms of environmental quality. All project features are designed so that the visual and human-cultural values associated with the project will be protected, preserved, maintained or enhanced to the maximum extent practicable. Opportunities for environmental enhancement through design are to be deliberately sought. Specific ecological considerations include actions to preserve or enhance critical habitats of fish and wildlife; accomplish sedimentation and erosion control; maintain or enhance water quality; or regulate streamflow, runoff and groundwater supplies; and avoidance or mitigation of actions whose effect would be to reduce scarce biota, ecosystems, or basic resources. In the development of individual project features consideration is given to the needs for architectural design, land treatment or other resource conservation measures. Emphasis is given to developing measures for realizing the full scenic potential of the project feature as it affects the overall project. This is accomplished by providing for cover reforestation, erosion control, landscape planting, management of vegetation, healing of construction scars, prevention of despoilment, and other related activities for all project lands. (ER 1165-2-2; EM 1110-2-38)

8-5. Low Level Discharge Facilities. Generally, lakes impounded by Civil Works projects provide low level discharge facilities. Low level discharge facilities, capable of essentially emptying the lake, provide flexibility in future project operation for unanticipated needs such as major repair of the structure, environmental controls or changes in reservoir regulation. (ER 1110-2-50)

8-6. Engineering and Design Performance Analysis. Performance analysis is concerned with two factors, the ability to control engineering and design costs and the ability to estimate such costs. Quarterly reports are required from divisions and districts in three parts: part I, estimated E&D cost vs actual E&D costs of features completed for design within the last four quarters, part II, actual E&D percentage vs experience curve percentage for completely designed projects within the last four quarters and part III, estimated E&D percentage vs experience curve for projects under design.

8-7. Value Engineering. Value Engineering (VE) is defined as the systematic application of recognized techniques which identify the function(s) of a product or service; establish a monetary value for that function; and provide the necessary function reliably at the lowest overall cost. VE is concerned with the elimination or modification of anything that contributes to the cost of an item or task but is not necessary for needed performance, quality, maintainability, reliability, aesthetic or interchangeability, or other intended function or objective of a product.

a. Use. VE is a permanent and integral part of Corps design and is applied actively to all Civil Works activities. VE studies adhere to specifically prescribed methods of procedure and supplements the analysis of alternatives that is part of normal management or design procedures.

b. Non-Applicability. In Civil Works planning, VE is not substituted for economic value or feasibility studies. VE is not applied to aesthetic or environmental features of a project, except where it can be shown that the resulting design, after VE, is as pleasing from an environmental or aesthetic viewpoint as the original design. (OCE Sup No. 1 of 17 Dec 73 to AR 5-4 of 4 Sep 73)

8-8. Use of Architect-Engineers. Engineering for the civil works program usually requires: continuity of project investigations and planning over a period of several years; integration of project planning with related projects in basin-wide developments; engineering and design skills distinctive to the field of water

resource development; and special coordination responsibilities with the public. Because of these requirements, the engineering required for survey investigations and basic design memoranda involving formulation of plans of improvements for civil works projects can ordinarily be best performed by Corps staffs. When existing workload or lack of specialized technical skills in any District prevents accomplishment of these tasks in a timely and efficient manner, all or part of the investigations or design may be reassigned to another Corps office or to private architect-engineer or consulting firms. Such reassignment is encouraged pursuant to effective utilization of funds, particularly for those field installations having difficulty in meeting scheduled obligation and expenditure of funds. (ER 1110-23-1; Section LXXV, ER 1180-1-1)

8-9. Use of Consultants. Services of individual experts and specialists outside the Corps of Engineers may be utilized for advice and consultation at appropriate stages of Civil Works project investigation, design, construction and operation activities whenever either problems are encountered that involve specialized fields in which Corps of Engineers personnel are not regularly employed, or special problems of such magnitude or importance are encountered that it is advisable to obtain the views and advice of eminent experts to supplement conclusions of the Corps of Engineers staff. (ER 1110-2-1160; Section LXXV, ER 1180-1-1)

a. Other Federal Agencies. Services of other Federal agencies will be utilized as appropriate in their special fields to complement the investigations and planning of Civil Works by the Corps. Such agencies include the EPA, HCRS and F&WL Service, among others.

b. Owners of Existing Facilities. Services of the owners of existing facilities to be relocated for a Civil Works projects may be engaged for planning and design of relocations. Procurement of such services from States, local governmental units, railroad companies, utility companies, etc., may be accomplished by use of a separate contract for engineering services. Alternately, these services may be made a part of the relocations contract.

CHAPTER 9

CONSTRUCTION

9-1. Assurances of Local Cooperation.

a. Congressionally Authorized Projects. The documents in support of the Acts authorizing or modifying projects contain the authority for requiring local cooperation. It is necessary to examine the pertinent authorization for each individual project.

b. Projects under Continuing Authorities. Specific details of required local cooperation for projects under continuing authorities are contained in the reports and approvals authorizing the work. The preauthorization report includes a copy of a letter of intent to cooperate from the responsible project sponsor. Formal binding assurances are obtained prior to commencement of construction.

c. Receipt and Acceptance. No construction is undertaken until satisfactory assurances are in hand concerning all required cooperation by a qualified local sponsor and until lands, easements, and rights-of-way required for a complete unit of the project have been provided. Whenever real estate interests have to be acquired by local sponsors, the assurances must also include a commitment to comply with all requirements of Sections 210 and 305 of Public Law 91-646. Except for future use water supply, assurances must be in the form of a binding enforceable contract as required pursuant to Section 221 of the River and Harbor Act of 1970 for all projects with construction commencing on or after 1 January 1972. Water Supply contracts under the Water Supply Act of 1958 and contracts for recreation and fish and wildlife development under the Federal Water Project Recreation Act must be approved by the Secretary of the Army. The assurances, upon being accepted by the Chief of Engineers (or Director of Real Estate) on behalf of the Secretary of the Army, become enforceable in a court of law. (Chapter 12, EP 405-1-2; ER 1150-2-301; Part 3, App A; ER 1180-1-1)

d. Exceptions.

(1) Facilities for recreation require a 50 percent non-Federal contribution. Construction may commence without formal local agreement for recreation provided the benefit-cost ratio is recomputed and economic justification is achieved with inclusion of minimum basic facilities provided at Federal expense. (ER 1105-2-129; ER 1120-2-404)

(2) Section 77 of the Water Resources Development Act of 1974 (Public Law 93-251) amended the requirements for local participation in measures for the enhancement of fish and wildlife to provide for 75% Federal and 25% non-Federal sharing of separable first costs at projects not substantially complete on the date of enactment.

(3) At completed projects, Code 710 funds are used for construction of recreation facilities. Administration policy regarding expenditures of Code 710 funds requires that a non-Federal public agency enter into a contract with the Corps and agree to pay for not less than 50% of the cost of development and assume O&M responsibility for the recreation area.

(4) Assurances required for future water supply should be reasonable but in accordance with Section 4 of Public Law 92-222 need not be a binding contract in strict conformance with the requirements of Section 221, Public Law 91-611.

e. Use of Other Federal Funds. Revenue sharing funds made available to the states and local communities under the State and Local Fiscal Assistance Act of 1972 (Public Law 92-512) are considered to be local monies upon receipt. Such funds can be used by non-Federal interests to meet the requirements of non-Federal participation for Corps projects. Similarly, contributions derived in whole or in part from HUD's Community Block Grant program may be accepted from local interests. However, HUD should be made aware of the purpose for which its grant-in-aid funds are being applied.

9-2. Real Estate Requirements and Acquisition for Reservoir Projects.

a. Requirements. Real Estate requirements are governed by the Joint Policies of the Department of Interior and Army, which is published in 27 F.R. 1734, 22 February 1962. This policy provides that fee title is acquired in land for the damsite, construction areas and permanent structures. Further, fee title is acquired for lands below the maximum flowage line of the reservoir including lands below a selected freeboard where necessary to safeguard against the adverse effects of saturation, wave action and bank erosion. Where the freeboard does not provide a minimum of 300 feet horizontally from the conservation pool (all planned storage except exclusive flood control storage) it is increased to that extent. Fee title is also required for areas used for recreation; access to the lake; and land required for fish and wildlife mitigation and enhancement. Easement interests may be required in lieu of fee title for areas in the upper reaches of the project above the conservation pool and if financially advantageous to the Government.

and not required for fish and wildlife or recreation purposes. Also, easements are generally acquired for rights-of-way for the relocation of public highways, public utilities and railroads. Lands downstream from the dam may be required in fee or easement for operational purposes. Funds for land acquisition in advance of project construction may be approved to alleviate severe hardship cases and to avoid price escalation. Following authorization of a project and appropriation of construction funds, public meetings are conducted in the vicinity of the project to discuss the project, the land acquisition program and acquisition schedule and afford landowners an opportunity to comment. A real estate interest will be obtained in those areas downstream of a spillway where spillway discharge could create or significantly increase a hazardous condition. (ER 1110-2-1451; Chapter 2, EP 405-1-2)

b. Acquisition. Actual acquisition of land generally starts at the damsite and moves progressively upstream. Authorized fish and wildlife mitigation lands are acquired concurrently with other project lands. Project lands may be acquired from landowners by purchase, condemnation or donation. No remainders of land are left in ownerships which would constitute uneconomic remnants, nor are improvements excluded from acquisition merely to avoid payment of high severance damages. Any special benefit from the project to the remainder of the property is taken into consideration in preparation of the appraisal report. However, no value which may be attributable to project development is assigned to the land. Negotiations with landowners are conducted as arms length transactions, on a willing buyer-willing seller basis over a reasonable period of time. Prior to closing, title evidence is reviewed, title clearance is completed and an inspection is made of the premises. At closing, a deed to the United States is accepted and payment of the purchase price is made to the landowner. After the deed is recorded, the Final Title Assembly, including an Attorney's Final Title Opinion, title evidence, deed and related papers, is forwarded to DAEN-REP'S for permanent filing. If agreement is not reached on a mutually acceptable price or if title defects cannot be readily resolved, the United States Department of Justice is asked to institute condemnation proceedings in Federal District Court. The case may be settled by stipulation. Otherwise, trial will be held before the court, a jury, or a court-appointed commission. Rights of appeal are available as in other civil cases. The Government is also authorized to pay or reimburse expenses incurred by the landowner in conveying his property to the United States such as recording fees, mortgage prepayment penalties and transfer taxes. Mineral rights will not be acquired except where the development thereof would interfere with project purposes.

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But, mineral rights not required will be subordinated to the Government's right to regulate its development as to eliminate any interference with project purposes. (Chapter 5, EP 405-1-2)

c. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646). This legislation provides for uniform and equitable treatment of all persons displaced from their homes and businesses as a result of land acquisition for Federal and federally assisted projects. The Act authorizes reimbursement for actual moving expenses and losses resulting from moving, or an alternative payment in lieu of actual expenses of about \$500 for a home and \$2,500 to \$10,000 for a business or farm operation. A replacement housing payment is also provided to enable the displaced person to be relocated in a decent, safe, and sanitary home comparable to his former home. This payment (up to \$4,000 for tenants and \$15,000 for homeowners) is in addition to the purchase price paid for the property acquired by the Government. No owner may be offered less than the Government's appraisal for his property and cannot be required to surrender possession unless that sum has been made available to him. The Government must assure the availability of adequate replacement housing before obtaining possession. As a last resort, the Government can build or arrange loans for building replacement housing to assure its availability to displaced persons. These costs are not included in the project benefit cost ratio, but they are allocated to reimbursable purposes. (ER 1165-2-117; Chapter 6, EP 405-1-2)

9-3. Relocations. The term "relocation" includes raising and lowering, altering, adjusting or protecting a facility, as well as changing its location.

a. Relocation of Public Highways, Public Utilities, Railroads and Pipelines. Lands necessary for a project are acquired subject to outstanding easements for public highways, public utilities, railroads and pipelines. However, when there will be a taking of these easements, the owner must be compensated. Federal courts have held that when the Federal government acquires public highways and public utilities, the measure of compensation is the cost of providing substitute facilities where necessary. Conversely, where there is no further necessity for such a facility, the Federal Government is only required to pay nominal consideration for the right-of-way. When privately-owned roads, pipelines and railroads, are required it may be in the best interest of the Federal Government to relocate them since relocation may be the least costly alternative. A relocated facility should serve the owner in the same manner and reasonably as well as does the existing facility.

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However, substitute roads are constructed to the standards which the state or municipality would use in constructing a new road taking into consideration geography and projected traffic not including project induced traffic. At the request of the State or political subdivision, the substitute road may also be constructed to even higher standards if the State or political subdivision pays the added cost prior to initiation of construction. (ER 1180-1-1, Section LXXIII; ER 1165-2-117)

b. Relocation of Cemeteries. The relocation and/or protection of cemeteries is premised on acquisition of a real estate interest and extinguishment of the legal right of the next-of-kin to visit and preserve the burial grounds of their ancestors and relatives. It is the policy of the Corps of Engineers to respect the wishes of the next-of-kin as to the removal and reinterment of bodies. Ordinarily, just compensation for the acquisition of an existing cemetery site will consist of furnishing a new site comparable to the old site, plus disinterment and reinterment of the bodies, and transferring monuments and other facilities from the old to the new site. (ER 1180-1-1, Section LXXIII, Part 8, and A-306)

c. Re-establishment of Towns. In certain cases, Congress has authorized relocation of specific communities. However, there is no general authority vested in the Secretary of the Army (by way of Federal legislation or Federal court decisions) to pay the cost of physically relocating a town. Recognizing that project requirements dictate the acquisition of private property within the project, the Government can participate in financing the cost of comparable streets and utilities in a new town in the event the governing body of the town and its citizens decide that a new town will, in fact, be established. If no new town is to be established the Government has no legal authority to pay other than a nominal consideration for the streets and utility systems in the old town since no substitute facilities would be necessary. (ER 1180-1-1, Section LXXIII, Part 6)

d. Evacuation in Lieu of Levees. Section 3 of the 1938 Flood Control Act, dated 28 June 1938, (P.L. 761, 75th Congress) authorizes the Chief of Engineers to substitute evacuation in lieu of levees or floodwalls for a portion or all of the areas proposed to be protected. A sum not exceeding the amount saved in construction costs may be expended for evacuation of the locality eliminated from protection, including rehabilitation of the persons evacuated.

9-4 Real Estate Requirements for Local Cooperation Projects.

a. Requirements. No construction contract is awarded until a valid right of possession has been obtained to the entire project

area, or for a usable segment thereof. The minimum interests in real estate which the local agency must obtain are given below. (Chapter 2 & 12, EP 405-1-2)

(1) Flood Control Projects. Fee title, or permanent easements, for levees, walls, other permanent structures, channel rectification works, and adequate access thereto. Permanent easements for lands in reservoir areas of flood control only projects which do not provide conservation pools, spoil disposal and borrow areas required for future maintenance work, and adequate access thereto. Permit, or temporary easements, for spoil, work and borrow areas required during construction, and adequate access thereto.

(2) River and Harbor Projects. Fee title for lock site and for all other permanent structures. Permanent easements for right-of-way for the waterway improvements. Permanent easements in lands required for the erection and maintenance of aids to navigation.

b. Condemnation on Behalf of Local Interest. Under the provisions of Acts of Congress approved 29 June 1906 (33 U.S.C. 592), 8 August 1917 (33 U.S.C. 593) and 18 August 1941 (33 U.S.C. 701c-2), the Secretary of the Army may cause proceeding to be instituted, in the name of the United States, for acquisition, by condemnation of real estate interests required of local interest. The Chief of Engineers will request such action only when the local agency lacks authority, cannot meet the construction schedule or when the measure of just compensation is different under local law than Federal law. (Chapter 12, EP 405-1-2)

9-5. Water Quality Requirements. State water quality certification and any necessary permits required by the Clean Water Act of 1977 are obtained prior to discharge of dredged or fill material. For projects specifically authorized by Congress exemptions from the requirements of Section 301, 402 and 404 are obtained by submitting an EIS or EIS supplement to Congress prior to an appropriations for construction and prior to discharge in accordance with Section 404(r). (Paragraph 5-6)

9-6. Accomplishment of Construction Work

a. Use of Contractors. It is Corps policy to accomplish Federal civil works improvement by contract with private construction firms through competitive bidding to the greatest extent possible. (ER 415-2-301)

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b. Use of Title II Contracts. Title II contracts are appropriate for surveys, testing and supervision and inspection services when there are insufficient Corps personnel available. However, the management function of all Civil Works field offices must be retained in-house and not delegated. (ER 415-2-100)

c. Use of Government Plant and Hired Labor. Work is accomplished with hired labor and government plant only when it is of a type in which contractors are not interested; where advertisement of the work resulted in procurement of unacceptable bids and suitable government plant existed and was utilized as the basis of the Government Estimate; or when it requires special equipment or qualifications for doing the work which are not generally available to the contracting industry. Bank revetment work with special government-owned plant is an example of the latter case. Public Law 95-269 provides that the Secretary of the Army, acting through the Chief of Engineers, carry out projects for River and Harbor improvements by contract or otherwise in the manner most economical and advantageous to the United States. The Act provides for carrying out dredging and related work by contract when this work can be accomplished at reasonable prices and in a timely manner. In this regard, PL 95-269 provides that no works of River and Harbor improvement shall be done by contract if: (1) the contract price is more than 125 percent of the cost of doing the work by Government plant; or (2) in any other circumstance, if the contract price is more than 125 percent of a fair and reasonable estimated cost of a well-equipped contractor doing the work. Public Law 95-269 further provides for the reduction of the existing fleet of Federally owned dredges to a fully operational minimum fleet of technologically modern, efficient dredges to meet emergency and national defense requirements. The Act also provides that the Secretary of the Army shall maintain a sufficient number of Federally owned dredges to insure the capability of the Federal Government and private Industry together to carry out projects for improvements of Rivers and Harbors. (ER 11-2-101; ER 1110-2-1300; ER 1130-2-307; Paragraph 1-372, ER 1180-1-1)

d. Contracting with Small Business and the Minority Business Enterprise. Contracting with small business concerns is governed by the provisions of the Defense Acquisition Regulations (DAR) which is the implementation of the Small Business Act of 30 July 1953 as amended (15 U.S.C. 631 et seq.). It is Corps policy to place a fair share of all procurement with small business concerns and to offer such concerns an opportunity to participate in any procurement within their capability.

(1) Section 8(a) of the referenced Small Business Act provides for setting aside of certain procurements for performance by minority owned or controlled business enterprises (Negroes, Spanish speaking American persons, American Orientals, American Indians, American Eskimos and American Aleuts). This program is actively supported through the application of existing DAR regulations and Corps policy. Work of a critical nature (time-wise); projects requiring unusual construction management skill; and work to be cost-shared or involving the use of contributed funds normally are not considered for placement under the Section 8(a) program. (Paragraph 1-332, DAR; Part 7, Section I, DAR; and ER 1180-1-1)

e. Buy American Act. With certain exceptions, the Buy American Act (41 U.S.C. 10 a-d) and Executive Order 10582, dated 17 December 1954, prohibit the purchase or use of nondomestic materials in connection with Government contracts for the construction, alteration or repair of any public building or work. Nondomestic material is defined as that which, when unmanufactured, has not been entirely mined or produced in the United States or, when manufactured, has foreign components valued at greater than 50% of the whole. Exceptions are granted only on the basis of nonavailability in the United States, unreasonable cost, or impracticability. (DAR and ER 1180-1-1, Section VI)

9-7. Reservoir Clearing. The general objective in clearing reservoir areas is to hold such clearings to a minimum compatible with project purposes in order to effect an over-all reduction in construction costs. All areas which are potential hazards in achieving primary project purposes should be cleared in accordance with established guidelines. Clearing and disposal of cleared material must comply with all local and state laws applicable in the area where the project is located. (ER 415-2-1)

9-8. Utilization of Dredged Material. It is Corps policy to secure the maximum practicable benefits through the utilization of spoil dredged from navigation channels and harbors, provided such use is in the public interest. Such use of suitable non-contaminated dredged materials can include, creation of wetlands, nourishment of beaches, erosion control of river banks, and land reclamation. In accordance with Section 150 of Public Law 94-587 up to \$400,000 may be expended by the United States to create wetlands from dredged material (paragraph 19-5). Utilization of dredged material for other uses may be undertaken provided extra cost to the United States is not incurred. If it is evident during the initial planning of dredged operations that additional costs would be

incurred, local interests will be given reasonable opportunity to finance the additional costs. Normally, local interests provide without cost to the United States all suitable areas for initial and subsequent disposal of dredged material, including all necessary retaining dikes, bulkheads, and embankments therefor. Also see paragraph 11-6 discussion of land enhancement from placement of dredged material and restriction on Ocean Dumping. (ER 1130-2-307)

9-9. Housing of Project Personnel. Permanent housing is provided at Civil Works projects for operating personnel: when a permanent reservoir pool is provided and 24 hour attendance by operators is not otherwise maintained; when it is necessary to have employees at the site on call for duty outside of regular working hours; when control of vandalism is a factor; when the access road is subject to closure by high water, slides, forest fires, or similar hazards; when housing is inadequate within a reasonable commuting distance of the project and possibilities of obtaining adequate housing from the market place have been thoroughly investigated. (ER 415-2-301)

9-10. Work for other Government Agencies. Work specifically for another Federal agency (such as protection of their land or facilities) is accomplished on a reimbursable basis. Authority for Corps performance of work for other Federal agencies is provided by Section 601 of the Economy Act approved 20 July 1942 (31 U.S.C. 686); Section 219, FCA of 1965, Public Law 89-298; and Presidential letters of 17 March 1942 to the Secretaries of the Army and Navy. Section 117 of the River and Harbor Act of 1968 provides authority to use civil works funds to maintain navigation channels deepened for defense purposes where the project also serves essential needs of general commerce. Prior authorization of the Chief of Engineers must be obtained for work involving use of hopper dredges and work requiring an advance of funds. Division Engineers may otherwise authorize Corps performance of work desired by another agency on a reimbursable basis, provided that sufficient funds for the entire project are available from current year funds of the requesting agency. Any clearance required by OMB or Congressional appropriation committees will be obtained by the requesting agency. Services may be provided to State and local units of government under the authority of Title III of the Intergovernmental Cooperation Act of 1968 (P.L. 90-577) as implemented by Bureau of the Budget Circular No. A-97, 29 August 1969. The purpose of Title III is to encourage intergovernmental cooperation in the conduct of specialized or technical services and provision of facilities essential to the administration of State and local governmental activities; to enable State or local governments to avoid unnecessary duplication of Special Service functions; and to

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authorize all departments and agencies of the Executive Branch of the Federal government, which did not have such authority, to provide reimbursable, specialized, technical services to State and local governments. (ER 37-2-10; ER 1140-1-210; ER 1140-2-302; and ER 1140-2-303)

CHAPTER 10

OPERATIONS, MAINTENANCE, AND PROJECT MANAGEMENT

10-1. Resource Management of Project Lands and Facilities.

a. Management Objectives. The developed and natural resources of Civil Works projects are the public property of both present and future generations. Corps resource management activity is directed toward the continued enjoyment and maximum sustained use by the public of lands, waters, forests and associated recreational resources, consistent with their carrying capacity and their aesthetic and biological values, and to allow such other new and innovative uses of the project that are not detrimental thereto. Maintenance and administration of recreation areas, where they remain under Corps jurisdiction, is part of the overall management objective to preserve and protect the quality of project resources. Major considerations, in addition to management of recreation facilities, include: (ER 1130-2-400; ER 1165-2-400)

- (1) Protection of project visitors and employees.
- (2) Protection of project resources, including enforcement of land use requirements to prevent conflict between uses.
- (3) Prevention of visual and physical encroachments upon project lands and waters.
- (4) Preservation and enhancement of the aesthetic integrity of banks and shorelines and retention of access for public use.
- (5) Prevention or elimination of unauthorized structures and habitation on project lands or on the water surface.
- (6) Compatibility between recreation uses and equipment employed in recreation activity and established water quality standards.
- (7) Environmental improvement through vegetative management.
- (8) Interim utilization of project lands for appropriate agricultural practices to optimize recreation and fish and wildlife benefits.
- (9) Monitoring of public recreation use and recreation technology being used to insure that management practices and future recreation developments are consistent with discernible public preferences and needs.

(10) Encouragement of local officials to adopt and enforce zoning and building codes to: control private developments adjacent to any project reservation; and to avoid resultant problems in water pollution from septic tank drain fields or sewage disposal, visual pollution due to poor siting or design, solid waste disposal on public areas, or use of project roads for access to private property.

b. Public Impression. The public's attitude toward the Corps is formed at the projects through: appearance of the area as to grooming, development, and administration; quality of development; kind of interpretive signs and other information; and degree of professionalism among the personnel in their contacts with the public. Guidance on providing visitor centers, overlooks, and information centers is given in ER 1130-2-401.

c. Public Access. Appropriate access to the project will be provided for the general public except in areas which are restricted for security or safety reasons. Where an administration building or visitor center is provided, these facilities should be open with a responsible employee on duty seven days per week during the prime recreation season during hours prescribed by the District Engineer. (ER 1130-2-400)

d. Lakeshore Management Policy. The Corps policy is to manage and protect the shorelines of all lakes under its jurisdiction to properly establish and maintain acceptable fish and wildlife habitat, aesthetic quality and natural environmental conditions and to promote the safe and healthful use of these shorelines for recreational purposes; ready access to and exit from these shorelines for the general public is provided. Corps management practices are directed toward gaining the maximum benefit to the general public. (ER 1130-2-406)

e. General Use of Public Recreation Areas. Public use areas on Civil Works projects are available for use by all members of the general public on a first-come, first-served basis. Corps operated group camp areas may be managed on a reservation system. (ER 1130-2-400)

f. Use Fees. See Chapter 16, paragraph 16-5e.

g. Citation Authority (Policing). Section 234 of the 1970 FC Act provided that the Secretary of the Army may cause to be issued citations for aggravated cases of refuse dumping and other violations of the rules and regulations under Chapter III, Title 36, CFR. Division Engineers have been authorized to designate Civil Works installations wherein the citation authority will be

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implemented. Oral and written warnings will be utilized in minor cases to the extent possible. There is no authority for Corps personnel to take an offender into custody. Weapons will not be carried or used for citation enforcement. Federal, State, and local law enforcement agencies, as applicable, retain the authority and responsibility to enforce all laws. Section 120 of Public Law 94-587 authorized the Chief of Engineers to contract with States and their political subdivisions for the purpose of obtaining increased law enforcement services at projects. (ER 1130-2-418 and ER 1130-2-420)

h. Forest Management. P.L. 86-717 requires that projects be developed and maintained to encourage, promote, and assure adequate and dependable future resources, including supplies of forest products. The forest management program will be administered to increase the value of project lands for recreation and wildlife, and to promote natural ecological conditions by following accepted conservation practices. Where the preservation of natural conditions or similar non-commercial purposes are the paramount consideration, there is no justification for using cultural practices appropriate to commercial forestry production such as thinning, pruning and release cutting for stand improvement. Vegetation living or dead, will be removed only with such justification as urgent disease control, urgent insect pest control, fire hazard reduction, wildlife management practice, removal for construction of recreational facilities or other specific essential uses.

i. Wildlife and Fisheries Management. Section 3 of the Fish and Wildlife Coordination Act (P.L. 85-624) provides for the use of Civil Works projects for conservation, maintenance and management of fish and wildlife resources and wildlife habitat. This is accomplished through licensing of lands and waters to State wildlife agencies or by cooperative agreement with the Secretary of the Interior under terms of a General Plan. The General Plan must be approved jointly by the Secretary of the Army, the Secretary of the Interior and the head of the State Wildlife Agency. Licensees may plant or harvest crops, either directly or by share crop agreement to provide food and/or wildlife habitat. Proceeds from the sale of crops may be used to further fish and wildlife uses in accordance with project management plans. Proceeds not used for this purpose will be paid to the United States at the expiration of each five year period. (ER 1130-2-400; ER 1105-2-129)

j. Sanitation and Pollution Control. Sanitation for public use of Corps projects will be in accord with all Federal, State and local laws. Solid waste disposal and the control of air and water

pollution will be in accordance with Executive Order 12088 on prevention, control and abatement of air and water pollution at Federal facilities. While it is a responsibility of the Corps to provide facilities which meet State standards, there is no requirement that the specific pollution abatement processes, equipment, or operating procedures proposed by the Corps must be submitted for State approval. Section 107 of Public Law 93-251 permits Federal participation in the costs of local sewage treatment plant installations as warranted to provide for treatment of the additional sewage resulting from the operation of facilities (including recreation) at Corps projects. All potable water at Civil Works projects will meet or exceed the minimum standards prescribed by the Safe Drinking Water Act. (ER 1130-2-407)

k. Soil Erosion Control. Erosion of project lands will be controlled as practicable to prevent land despoilment and extend the project life through reduced siltation.

l. Distribution of Rental Receipts. Section 7 of the Flood Control Act of 1941, P. L. 77-228, as amended authorizes the Corps to pay 75 percent of annual rental receipts from the leasing of project lands under its jurisdiction to the state in which the leased properties are located.

10-2. Responsibility for Maintenance. Responsibility for maintenance and operation of completed Civil Works projects has been established by the general requirements of River and Harbor and Flood Control laws and administrative policy. These responsibilities in brief are: (ER 1150-2-301)

a. Navigation.

(1) Existing Authorized Project. Authorization for most existing navigation improvements provide that maintenance and operation shall be a Federal responsibility accomplished at Federal cost.

(2) Commercial Navigation. It is general policy to recommend that improvements for commercial navigation be maintained by the Government at Federal cost.

(3) Small Boat Navigation. Section 6 of the Water Resources Development Act of 1974 (P.L. 93-251) provides that the costs of operation and maintenance of the general navigation features of small boat harbor projects shall be borne by the United States. This policy applies to both recreational and commercial small boat harbor and channel navigation projects. (ER 1165-2-310)

(4) Emergency Clearing. Section 3 of the River and Harbor Act of 1945, provided continuing authority for limited emergency clearing of navigation channels, but does not specify who shall maintain that work. It is an Administrative requirement that work under Section 3 be maintained by local interests.

(5) Disposal Areas. Provision and preparation of disposal areas, including dikes, is the responsibility of local interests unless authorizing legislation provides otherwise. Section 148 of the 1976 WRDA (PL 94-587) calls for utilization of appropriate management practices to extend the capacity and life of disposal areas.

b. Flood Control (General).

(1) Most flood control and all multiple-purpose reservoirs are maintained and operated by the Federal Government.

(2) Local flood protection work such as levees and channel improvements, including repair work under P.L. 99, 84th Congress, are maintained and operated by non-Federal interests. An exception is that channel improvements specifically authorized under the Flood Control Act of 1938 are a Federal maintenance responsibility.

(3) Projects for snagging and clearing for flood control under Section 3 of the River and Harbor Act of 1945 and emergency bank protection under Section 14 of the 1946 Flood Control Act require maintenance by non-Federal interests.

c. Flood Control (Mississippi River and Tributaries). Local responsibility is limited to regular levee maintenance, but this is defined by law to consist only of mowing grass and weeds. The Federal Government is responsible for extraordinary maintenance of levees and all maintenance of structures other than levees.

d. Beach Erosion Control. Maintenance is usually a local responsibility. In some cases, Federal participation may be provided for a specified period when periodic nourishment has been selected and adopted in lieu of more extensive construction, and such Federal participation is adopted as part of the recommended project. (ER 1165-2-130; EM 1120-2-101)

10-3. Operation and Maintenance of Local Protection Projects. Section 208.10, Title 33, CFR contains regulations for the operation and maintenance of local flood protection works approved by the Secretary of the Army in accordance with authorities contained in Section 3 of the Flood Control Act of 22 June 1936 (49 Stat. 1571),

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as amended and supplemented. District Engineers are to keep informed as to the extent of compliance with the local operation and maintenance requirements through regular periodic inspections of the projects, and analysis of semi-annual reports required to be submitted by the operating and maintaining agency. These actions form the basis of the continuing inventory of agreements and the status of their performance, transmitted to Congress annually in compliance with Section 221(e) of P.L. 91-611. (ER 1110-2-100; ER 1130-2-339; ER 1150-2-301; ER 1165-2-304)

10-4. Navigation Channel Dimensions Maintained. Full project dimensions are maintained for authorized navigation projects where feasible and justified. To avoid frequent dredging in order to maintain full project depths, advance maintenance dredging is performed in critical, fast shoaling areas to the extent that it would result in the least overall cost. Such additional depth dredging is exclusive of and beyond the allowable overdepth included to compensate for dredging inaccuracies. In some waterways and harbors, the current needs of navigation can be met by dredging the project channel or basin to less than the authorized depth and/or width. If a temporary reduction in width from that authorized is acceptable, removal of moderate shoaling along channel lines is deferred until essential dredging in the channel is undertaken. Only where known progressive shoaling along channel lines is unduly restrictive to navigation will its removal be undertaken prior to the normal scheduling of maintenance dredging. (ER 1130-2-307)

10-5. Maintenance Dredging Provisions of the Clean Water Act of 1977. Section 404(t) of the Clean Water Act authorizes any State to regulate, in accordance with its laws, the discharge of dredged material in any portion of the navigable waters within the jurisdiction of the State that results from maintenance dredging involving Corps of Engineers navigation projects. District Engineers obtain State water quality certification, and a permit for disposal of maintenance dredged material required by Section 404(t) unless the State elects to waive these requirements. In cases where the project authorization requires a local sponsor to provide disposal areas and State or Federal requirements call for upland disposal, disposal areas must be made available by the sponsor before dredging proceeds. On projects where there are no local sponsor requirements to provide disposal areas, and State requirements call for upland disposal and Federal requirements do not, local or State assistance in providing suitable disposal areas is sought. If such assistance is not forthcoming, the increased project cost is evaluated with other national maintenance requirements to determine the relative priority of continuing maintenance dredging at that project. No maintenance dredging is

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performed unless disposal activities are in full compliance with State requirements unless a waiver from those requirements is obtained pursuant to Section 404(t) and Section 511(a). Restrictions on ocean dumping have been imposed by the Marine Protection, Research and Sanctuaries Act of 1972 (See para 11-6b).

10-6. Condition Surveys of Navigation Projects. The capability of every active waterway and harbor project to serve current navigation requirements should be determined at least once each year. District and Division Engineers then take necessary action, including request for any required authority and funds to perform maintenance dredging determined to be justified. The actual requirements of existing commerce and the economies obtainable by advance maintenance dredging operations govern the extent of the maintenance work undertaken. (ER 1130-2-307)

10-7. Abandonment of Navigation Projects. Some waterways and harbor improvements constructed years ago may no longer be needed or utilized for the purposes for which originally intended, because of changed physical and economic conditions. Efforts are made to transfer the projects to appropriate State or local agencies for maintenance where obsolete waterways serve local purposes such as recreation or as sources of municipal or industrial water; or where local developments have grown up along the navigation pools. Where Federal waterway improvements no longer serve their authorized purpose, the Corps will recommend their abandonment to Congress. Pending arrangements for disposition, they are maintained as economically as possible. Obsolete harbor improvements, which no longer have importance for commercial or recreational traffic, are not maintained by the Federal government.

10-8. Transfer of Interest or Ownership and Use of Civil Works Projects. Lands and waters of Civil Works projects frequently can, without detriment to the primary purposes, also be used to provide many forms of supplementary benefits both public and private. Such use takes place either under Corps management or by third parties under any of the following authorities or procedures:

a. Authorities. (1) Title 10 United States Code, Sec. 2667, provides for lease of real and personal property which is not excess or required for public use. Limited to five-year terms unless the SA determines that a longer term will promote the national defense or will be in the public interest; (2) 16 United States Code, 460d authorizes any use determined to be in the public interest. Policy generally limits use to recreation; (3) Acts pertaining to easements.

b. Procedures. (1) Cooperative agreements with U.S. Fish and Wildlife Service or Forest Service; (2) Permits for use by Federal agencies; (3) Leases and licenses to governmental agencies, generally not exceeding 30 years but to 50 years in exceptional cases; (4) Leases for commercial concessions not exceeding 25 years. (ER 405-1-800 series).

10-9. Correction of Federal Navigation Project Induced Shore Damage. Section 111 of R&H Act of 1968 (P.L. 90-483) provides authority to "...investigate, study, and construct projects for the prevention or mitigation of shore damages attributable to Federal navigation works." Projects whose cost is limited to \$1 million or less do not require Congressional approval. The Federal government bears the entire cost of installing, operating, and maintaining such projects. This authority applies to both public and privately owned shores located along the coastal and Great Lakes shorelines damaged by Federal Navigation projects. Exercise of the Section 111 authority to provide mitigation measures at Federal expense is not mandatory. Normally, the degree of the mitigation is the reduction of erosion or accretion to the level which would obtain without the influence of navigation works at the time navigation works were accepted as a Federal responsibility. It is not intended that shorelines be restored to historic dimensions, but only to lessen the existing shore damage or prevent subsequent damages by action based on sound engineering and economic principles when equitable and in the public interest. This authority is not utilized to construct, maintain, modify or change an authorized navigation, beach erosion control, or combined BE-Hurricane protection project; or for river bank erosion or vessel-generated wave wash damage. (ER 1105-2-50)

10-10. Mitigation of Damages Resulting From Construction and Operation of Project. The Federal Government is not normally held responsible for damages incidental to Civil Works activities within areas subject to the Navigation Servitude. Normally, as a condition of project authorization, local interests are required to hold and save the United States free from damages due to construction, operation, and maintenance of the project works. Sec. 9 of Pub. Law 93-251 states that such requirement does not include damages due to the fault or negligence of the United States or the contractors. While the Government may be liable for damages resulting from the negligence of a Government employee, no recovery is allowable resulting from the exercise of a discretionary function by a Government official. The Chief of Engineers has discretionary authority under certain conditions to provide remedial work to correct certain adverse conditions resulting directly from a Civil Works project. The Office of Counsel should be consulted on the

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applicability of this authority to individual cases. See 33 U.S.C. 633, 701(q) and AR 27-40.

10-11. Removal of Wrecks and Other Obstructions. Removal of sunken vessels, boats, water craft or rafts, or other similar obstructions is governed by Sections 15, 19, and 20 of the River and Harbor Act of 3 March 1899 and is predicated upon their being obstructive to general navigation. Prior approval of the Chief of Engineers must be obtained if the cost of removal will exceed \$100,000. (ER 1145-2-301; ER 1145-2-305; and ER 1180-1-1, para 4-7005.)

10-12. Restrictions on Seaplane Operations. Seaplane operations on all or portions of lakes under the jurisdiction of the Corps may be prohibited or restricted by District Engineers to protect all authorized uses of the project and the safety of all users. (ER 1130-2-411)

10-13. Major Rehabilitation Program. This program is to facilitate accomplishment of significant and costly maintenance work of completed Corps of Engineers projects under the Construction, General appropriation title, so that it will not unduly distort the Operation and Maintenance, General budget from year to year. Preconstruction planning of the Major Rehabilitation program will be funded under the Condition Operation Studies account of the Operation and Maintenance, General appropriation title. Rehabilitation work may be included in the Construction, General, Major Rehabilitation program if all of the following conditions exist.

a. The work consists only of essential rehabilitation and does not include addition or betterment which constitute a change in project purpose, size, capacity or location. Modernization of operating equipment as part of the program to meet current design standards may be included;

b. The estimated cost of repairs is \$2,000,000 or more;

c. The work is required to permit the continued use of the project for authorized purposes and;

d. The accomplishment of the work is justified at this time, as demonstrated by the Reconnaissance Report. (ER 1130-2-417)

10-14. Acceptance of Donations of Materials. The Act of 24 April 1888 (33 USC 591) authorizes the Secretary of the Army to accept donations of lands or materials required for maintenance or prosecution of works for the improvement of rivers and harbors for

which provision has been made by law. This authority has been delegated to the Chief of Engineers. Division Engineers are delegated authority to accept unconditioned donations of such materials not to exceed a value of \$5,000. Acceptance of donations of lands have not been delegated by the Secretary of the Army.

10-15. Correction of Design Deficiencies. Occasionally, a project may require modification because its initial design was deficient. Such a project is correctable as a "design deficiencies" if it meets all of the following criteria.

(1) The deficiency is the result of an incorrect design assumption (including those resulting from differences in professional opinion) or calculation which was within the state-of-the-art existing at the time of construction and which prevents the project from functioning as intended;

(2) The deficiency was recognized after completion of construction but general within ten years after that date;

(3) Correction of the deficiency is needed to allow operation of the project as designed;

(4) Correction of the deficiency does not require additional authorization.

(5) The corrective measures must be justified, on an incremental basis, by current economic and/or safety considerations.

10-16. Dam Safety Assurance. This program has been established to provide for modification of Corps of Engineers dam projects which are considered to have potential safety hazards in light of present-day standards and knowledge. This program is intended to facilitate upgrading of those project features with deficiencies related to dam safety that are within the Chief of Engineers discretionary authority and cannot be corrected under other funding programs for routine maintenance type work or for rehabilitation to permit continued effective operation of a project as it was originally designed to function. Project modifications requiring additional authorization may be funded under this program, but would not be eligible for construction until the requisite project authority is obtained. Examples of eligible items include: enlarging existing or constructing new facilities to provide adequate discharge capability; raising the dam to provide adequate freeboard allowance; increasing structural stability of the embankment to withstand seismic loading; and the acquisition of lands downstream from spillways for hydrologic safety purposes.

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Funding, planning, design and reporting for modification to assure dam safety are identical to those for major rehabilitation.
(ER 1130-2-417)

10-17. Changes in Reservoir Regulation. Authorities for the allocation and regulation of reservoir storage in projects operated by the Corps of Engineers are contained in project authorization acts. Some modifications to approved reservoir regulation plans may be undertaken to provide more efficient use of the project for authorized purposes. However, proposed changes in reservoir regulation must be carefully reviewed in conjunction with the authorizing legislation to determine the extent of the change which may be undertaken. Revised regulation plans to add a new purpose not included in the project authorization, other than municipal and industrial water supply, water quality, fish and wildlife, and recreation which do not significantly affect operation of the project for the authorized purposes, require Congressional authorization. Often, proposals for changes of this type involve increases in the length of time waters are stored at various levels in the reservoir. Such proposals may require upgrading of interests in reservoir lands on which flowage easements were initially obtained. The cost of those additional land takings along with all other benefits and costs should be considered in the decision to change reservoir regulation. (ER 1110-2-240).

10-18. Changes to Meet Water Quality Standards at Reservoirs. Although water quality legislation does not require a permit for discharges from reservoirs, downstream water quality standards should be met whenever feasible. Existing projects should be evaluated and reported in accordance with ER 1130-2-334, and those found to be incompatible with state standards should be studied in further detail to determine the justification for upgrading such releases and to establish an appropriate course of action. Recommendations to modify a project to comply with state water quality standards must be based on a thorough analysis to insure that the best uses of the available resources are obtained. The analysis should include effects on project purposes, technical feasibility, environmental considerations, reasonableness of alternative actions and economic impacts. Any action proposed by the Corps should be on the basis that it is engineeringly feasible, socially acceptable, and, in the broadest sense, economically justified. Federal reservoirs are not required to make low flow releases to meet downstream requirements in response to State regulations. However, such releases are made as long as such requirements do not interfere with authorized purposes.

10-19. Dam Operations Management. Corps of Engineers dams are managed in accordance with the safest and most effective criteria and procedures that can practicably be established. Projects are inspected at appropriate intervals for signs of weakness or distress by trained personnel. A Dam Safety Plan is prepared for each dam consisting of: an emergency notification procedure; a description or list of conditions leading to emergency situations and way of dealing with them; reservoir de-watering procedure; dam failure inundation maps; a listing of location, types, and quantity of emergency repair materials and equipment; details outlining responsibilities for inspection and execution of emergency repairs; and, a list of contractors available within a reasonable distance of the dam. (ER 1130-2-419)

10-20. Energy Conservation. Executive Order 12003 dated 20 July 1977 requires all Executive agencies to develop ten-year plans for energy conservation with respect to Government buildings, as provided by Section 381(a)(2) of the Energy Policy and Conservation Act (42 USC 6361(a)(2)). Executive agencies are also required to submit an overall plan for conserving fuel and energy in all operations of the agency. The Army Energy Plan, set forth both short and long range goals for the Army consistent with the presidential guidance in Executive Order 12003. The Department of the Army established the goal, to reduce total facility energy consumption by at least 25 percent by FY 85 and by 50 percent by FY 2000 using FY 75 as the base year. Other goals are:

- o Reduce FY 85 average annual energy consumption per gross square foot of floor area by 20 percent in existing buildings compared to FY 75.
- o Reduce FY 85 average annual energy consumption per gross square foot of floor area by 45 percent in new buildings compared to FY 75.
- o Derive 10 percent of Army facility energy from coal and refuse derived fuels by FY 85.
- o Derive 1 percent of Army facility energy from solar energy by FY 85.
- o Eliminate use of natural gas by FY 2000.
- o Reduce facility use of petroleum fuels by 75 percent by FY 2000.

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All goals and objectives as contained in the Army Energy Plan apply fully to all elements of the U.S. Army Corps of Engineers including Civil Works. The Army Facilities Energy Plan (AFEP) implements the Army Energy Plan. This plan provides a planning methodology and information for use by Major Army Commands (MACOMS), to insure that comprehensive and consistent plans are developed throughout the Army. The AFEP provides guidance to MACOMS and its installations for the completion of installation facilities energy plans (IFEPS).

CHAPTER 11

NAVIGATION

11-1. Federal Interest/Objectives. General public interest in navigation antedated the writing of the United States Constitution. However, legal analyses usually begin with the Commerce Clause and subsequent Supreme Court decisions defining the Federal interest and rights to regulate navigation and accomplish necessary improvements on our navigable waterways. Navigable waterways remain a major means of commercial transportation. The physical nature of waterways and their importance to the Nation within the overall transportation network structure justifies continuing Federal responsibility for navigation improvements.

a. Objectives. Objectives of navigation improvements include the following: assist in the development, conduct, safety and efficiency of waterborne commerce - interstate and foreign; meet the need of recreational boating; promote the production and harvest of seafood; enhance environmental quality; encourage expansion of existing and development of new industrial and agricultural production; enhance fish and wildlife resources; enhance social well-being. Federal improvement in the interest of navigation must be in the general public interest and must be accessible and available to all on equal terms.

b. Types of Improvements. Federal practice pertaining to navigation improvements, which has developed over the years on the basis of Congressional actions, extends only to providing waterway channels, anchorages, turning basins, locks and dams, harbor areas, protective jetties and breakwaters, of dimensions adequate for movement of vessels efficiently and safety between harbors and other areas of use. The provision of facilities such as docks, terminal and transfer facilities, berthing areas, and local access channels are the responsibility of local interests. Federal concern does not extend to providing free and unrestricted use of unlimited, obstructionless water areas. The navigational authorities available to the Corps of Engineers do not cover waterway improvements to provide navigation access to privately owned facilities (including commercial marinas); access to restricted membership yacht clubs and similar establishments not open to the general public on equal terms; improvements to enhance and primarily benefit land development schemes; waterway cargo transfer and lightering facilities; and barge fleeting areas. Policy and procedures for the development of water resources in the interest of navigation vary with the type of expected use of the improved waterway or harbor. These types may be summarized as follows:

(1) Inland Waterways, including improvement of natural rivers for navigation by open-channel methods; construction of locks and dams; and construction of canals.

(2) Deep-draft Harbors and Channels, including improvement of natural harbors and channels or construction of new harbors and channels on the sea and Gulf coasts to meet the requirements of ocean-going shipping and similar improvements on the Great Lakes.

(3) Small-boat Harbors and Channels, including improvement or construction of small-boat harbors and channels for commercial and sport fishing, general recreational boating, and for use as harbors of refuge.

c. Federal Assumption of Maintenance Responsibility. Specific authorization by Congress is required to assume maintenance of channel improvements provided by others which extend beyond the limits of authorized projects. Performance of work outside project boundaries for other Federal agencies is accomplished on a reimbursable basis. (ER 1140-2-302)

GRANTS
d. Projects Involving Grants, Reimbursement, or Credits for Navigation Improvements Accomplished by Others. There is no general authority available to the Chief of Engineers whereby a grant or contribution of Federal funds can be made for navigation features or navigation benefits of a project to be constructed by another agency or by local interests. The Chief of Engineers cannot reimburse, or in any way credit, local interests for their expenditures on navigation improvements which they undertake prior to the approval and adoption of a project, unless specifically authorized by the Congress to do so.

11-2. Navigable Waters of the United States. The term "navigable waters of the United States" is used to distinguish those waters over which certain Federal powers may be exercised. Its meaning has been developed and expanded over the years by the Federal courts, and now encompasses a variety of factors. The definition applied by the Corps of Engineers is in close conformance with the tests used by the Federal courts, and requires that a careful study be made to determine whether a particular waterbody is actually navigable. The report by the District Engineer, and determination made by the Division Engineer, are to be distinguished from declarations or findings of navigability made by State agencies or courts, or even by other Federal agencies, since the relevant objectives or responsibilities are often quite different among different governmental units. (ER 1165-2-302; 33 CFR 329)

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a. Definition. Navigable waters of the United States are those waters, which are subject to the ebb and flow of the tide, and are presently, or have been in the past, or may be in the future susceptible for use to transport interstate or foreign commerce. (33 CFR 329.4)

b. Geographic and Jurisdictional Limits.

(1) Rivers and Lakes. Federal regulatory jurisdiction, extends laterally to the entire water surface and bed of a navigable waterbody, which includes all the land and waters below the ordinary high water mark. (33 CFR 239.11(a))

(2) Ocean and Tidal Waters. The Corps regulatory jurisdiction includes all ocean and coastal waters generally within a zone three nautical miles seaward from the coast line. For bays and estuaries, jurisdiction extends to the entire surface and bed of all waterbodies subject to tidal action. This includes marshlands and similar areas insofar as those areas are subject to inundation by the mean high tidal waters. The base line from which the territorial sea is measured is specified in the Convention on the Territorial Sea and the Contiguous Zone. (15 UST 1606; TIAS 5639; 33 CFR 329.12)

(3) Upper Limit of Navigability. At some point along its length, a navigable waterbody will change its character and lose its real or potential physical ability to support commerce. That upper limit point where the waterbody ceases to be a navigable water of the United States is usually termed the "head of navigation". (33 CFR 329.11(b))

(4) Jurisdiction. Actions which modify or otherwise affect the course, location, condition or capacity of navigable waters are subject to the Corps regulatory jurisdiction whether such actions occur within or outside the navigable areas.

c. Determination. The Division Engineer makes a determination as to whether a waterbody is a navigable water of the United States. His determination is based on a report of findings prepared by the District Engineer, accompanied by an opinion of the District Counsel. (33 CFR 329.15)

11-3. Benefit Evaluation for Inland Waterways and Deep-Draft Harbors. The principal benefits utilized in the justification of navigation projects are transportation savings. Other benefits may include such items as reduction in losses due to hazardous or inadequate operating conditions, enhancement of land values from

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landfill, national defense, flood control, bank stabilization and shore protection. (See para 5-8 regarding the use of the WRC planning manual).

a. Transportation Savings. The determination of transportation savings requires delineation of the trade territory served by the improvement under consideration, the types and volumes of commodities shipped into or out of the tributary area; the supply and demand for such commodities; the volumes of commodities that would reasonably move over the waterway improvement under study, and the size and characteristics of vessels used in the transportation of the commodities, projected over the project life.

b. Basis for Evaluation. The basis for evaluation of navigation benefits for inland waterways is Section 7(a) of the Department of Transportation Act of 1966 (P.L. 89-670). This Act requires that each Corps water resources study will include an estimate of savings to shippers via the considered waterway, measured as the product of the estimated waterway traffic and the estimated unit savings to shippers from the movement of that traffic via the waterway. The unit savings will be measured as the difference between the rates shippers are actually paying for transportation at the time of the study and the rates they would pay for transportation via the improved waterway. The evaluation of benefits from improvements to serve deep draft navigation generally involves the consideration of reduction in vessel operating cost (including fuel consumption economy) made available by the improvement of existing channels or the provision of new channels, anchorage areas, and turning basins. In studies of deep draft navigation, it is customary to distribute benefits on United States coastwise traffic between shipping and receiving ports to avoid duplication of benefits on independent project justifications for further channel deepening. Coastwise prospective benefits are apportioned 50 percent to the proposed port improvement and 50 percent to the shipping and/or receiving port that would have to be improved in order to receive such benefits. Benefits on foreign traffic are credited fully to the improvement under study.

c. Estimate of Savings. The estimate of savings for inland waterways is developed by comparing the full charges for movement from origin to destination via the prevailing mode of transportation with the full charges via the waterway being studied. The charges for each mode include all applicable handling, switching, and accessorial charges. Net differences in inventory, storage or other costs due to the change in transportation mode are recognized. The alternative modes of transportation used in estimating savings to shippers are those actually in use at the time of the study for

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moving that traffic. Where there are no existing traffic movements, it is assumed that the shipper would take advantage of the mode affording him the lowest total charges. For deep-draft harbors, the estimate of savings is developed primarily by computing the difference in vessel operating cost for cargo movement on the existing project with those movements resulting from improved navigation conditions. Alternative transportation mode analysis is generally not performed in the computation of savings for deep-draft harbors, except where landside transportation becomes a factor for alternative port considerations.

d. Rates to be Used.

(1) Waterway Rates. Often there will be no existing rates for waterway movement over the proposed waterway. Inland waterway rates are based on water-carrier rates or charges existing elsewhere at the time of the study which are most nearly applicable to the tow characteristics, waterway characteristics, commodity types and volume of expected traffic on the improved waterway. Use is made of water-carrier tariffs filed with the Interstate Commerce Commission, State regulatory agencies, and of unpublished data secured from the transportation industry, including barge-line operators. Rates and charges based on these sources, if applicable, may be applied directly to the waterway under study by establishing the relationship between prevailing waterway rates and the estimated cost of movement (including normal return on investment) via the least cost alternative mode (and routing), and in turn applying this relationship to the estimated cost of movement on the considered waterway. In deep-draft port studies it is usual to estimate for each commodity movement the transportation cost with and without the facility. This requires data on the characteristics and costs of the ships currently carrying the commodities under study. Identical data for prospective vessels must also be determined.

(ER 1120-2-114)

(2) Rates for Alternative Modes. Where commodities are currently moving via the alternative mode, and the volume and characteristic of the movement are similar to those of the proposed waterway movements, the prevailing rates for moving the traffic are used for comparison with the waterway rates. If the rate for the prevailing movement is not available or if the characteristics of the movement via the present mode differ from those anticipated on the waterway, charges via the present mode must be constructed. The constructed rates are based on a sufficiently large sample of existing rates to assure that they are reasonably representative. Constructed rates are based on the characteristics of those published rates existing within the trade territory which are similar to the type and volume of the expected waterway movements.

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In selecting rates for use as prevailing rates, or for constructing rates, care should be taken to consider rates actually in use. (ER 1120-2-114)

e. Systems Analysis of Inland Waterways.

(1) A total systems approach for planning, operation, maintenance, and improvement of inland waterways is desired. Analysis of the inland waterway on a system basis requires determining the performance of the waterway as a whole, and the interaction and interrelationships of its component parts under various assumptions about the economic and technical environment within which it will be operating. There is a need to maximize the operating efficiency of the navigation system as it presently exists, and all reasonable means must be utilized for best scheduling of improvements. Proper sequencing of construction can greatly enhance the efficiency of a system, thereby significantly improving the return on the capital expended on its construction. Accordingly, systems analysis should not only be used in the planning and design of a recommended navigation improvement but also in its schedule for construction. These systems interrelationships are made known to Congress when it is time for authorization of construction funds.

(2) Until a complete systems analysis technique becomes operational, studies made under the 1909 Act will include a systems analysis with benefits apportioned to the various segments of the total waterway used. Additional guidance should be obtained from OCE as appropriate.

f. Existing Carrier Loss of Traffic. The apparent loss of traffic by existing carriers from diversion of traffic to a waterway is not applied as a reduction of benefit. The Chief of Engineers considers that there is an over-all economic gain to the nation when transportation is made available to the public at lower cost and that, as has happened in most such cases, benefits to overland carriers from feeder and transfer traffic developing as a result of developing or improving access and the use of a waterway will in the long run offset losses by overland carriers of shipments suited to water movement.

g. Rate Reductions by Competitors. Rate reduction by competing carriers in an effort to retain traffic suited to water movement would be a benefit to the shipping and receiving public served by those carriers. The Corps of Engineers does not, however, include such rate reductions as benefits from a prospective waterway because they are unpredictable and may be offset if carriers correspondingly

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increase rates on commodities not suited to water movement or in areas not subject to competition by water transport. In considering benefits of navigation projects, the actual traffic which would develop on a waterway may be less than that originally estimated if competing carriers reduce rates to discourage use of the waterway. This possibility is recognized by the Corps of Engineers. In practice, it is impracticable to forecast the extent of competitive rate cutting and the amount by which estimated prospective commerce will be affected.

h. Regional Benefits. Section 140 of Public Law 94-587 authorizes the inclusion of regional economic development benefits for purposes of computing the economic justification of navigation projects which were authorized prior to 22 October 1976. The benefits can be included in any economic analysis which was underway on 22 October 1976. These benefits are generally at the expense of other regions of the country which could have been the site of the affected activities. Such transfers result in no additional net benefits contributory to project justification from a national perspective (NED). However, economic analysis which indicate a strong likelihood that the project induced regional benefits may also be of national significance (NED), are referred to OCE for early review.

11-4. Evaluation of Small-Boat Harbors and Channels. Benefits from improvements to serve commercial fishing are measured in terms of increased catch due to eliminating lost time, prevention of damage to boats, reduction of operating expenses, elimination of fish spoilage, and similar items. The net benefit from increase in catch is taken to be the value to the fisherman after deducting operating expense, including labor. Benefits to other small commercial craft are measured as savings in operating cost, transportation savings, and similar benefits. Policies for the development of water resources in the interest of commercial fishing and other small commercial craft conform, in general, with those presented for inland waterways and deep draft harbors and channels. By Act of 10 February 1932 (47 Stat. 42, 33 U.S.C. 541), the Congress expanded the definition of waterborne commerce to "include the use of waterways by seasonal passenger craft, yachts, houseboats, fishing boats, motorboats and other similar watercraft, whether or not operated for hire." Recreational navigation benefits are taken as equal to the net return on the depreciated investment in boats received by owners of equivalent for-hire boats. Charter fishing craft benefits are considered similar in character to owner-operated recreational craft although higher return percentage factors may be applied when fully substantiated. In certain cases, it might be also demonstrated that national benefits would occur due to

increased utilization of unemployed or underemployed labor involved in the operation of the charter fishing craft. Such benefits are considered valid when they represent a net gain for conditions with the improvement compared to conditions without. These benefits are not creditable if alternative earning opportunities would be available without the project improvement. A small boat harbor improvement may provide benefits to permanently moored craft, transient craft, and boats launched into the harbor waters by trailer or other means from dry, landside storage. For benefit computation purposes, transient and launched boats are converted into an equivalent number of permanently based wet-berthed boats. (EM 1120-2-113)

11-5. Harbor of Refuge. A harbor of refuge is a naturally or artificially protected water area that provides a place of relative safety or refuge for boats, commercial and recreational, traveling along the coast or operating in the region. Provision of harbors of refuge is considered entirely distinct from the development of new or existing harbors principally intended to be the home ports of recreational craft or the bases used by commercial fishermen. It is also distinct from the provision of facilities solely for mooring, wintering, repairing, fueling, and supplying small boats.

a. Design Considerations. Although harbors of refuge area are sometimes combined with other harbors, it is evident that refuge harbors can satisfy their safety purposes with less protection (less calmness of waters) than is preferred for the daily operation of permanent berthing and mooring facilities. It is desirable that the harbor of refuge be constructed so that it would be possible to enter and anchor safely under all but the extreme storm conditions. Normally, the harbor of refuge need have available only the minimum, basic essential facilities for simple replenishment of fuel and supplies and a means of communication with local medical and repair services.

b. Benefits. A suitable harbor of refuge can provide both tangible and intangible benefits. Tangible benefits include reduction in storm damages to vessels and their number of accidents. Prevention of vessel damages for normal navigation conditions without the project are not included as Harbor of Refuge benefits. Intangible benefits may also be obtained due to preservation of life and limb and longer boat life. In determining potential harbor of refuge benefits, consideration is given to the remoteness of the area, the distance to adequate shelter and hazard reputation of the region.

11-6. Dredged Material Disposal. In planning new navigation projects, the present policy is to require local interests to provide without cost to the United States all suitable areas

required for initial and subsequent disposal of dredged material and all necessary retaining dikes, bulkheads and embankments therefor, or the costs of such retaining works. Also see Chapter 9, paragraph 9-8. (EM 1120-2-101)

a. Land Enhancement from Placement of Dredged Material. The only net enhancement benefit credited to a navigation improvement is the value of new or filled land created by disposition of material dredged from the project area. The net tangible benefit from such land attributable to the project is measured in terms of the net increased market value or the cost of equivalent fill, whichever is less, exclusive of development costs and any additional costs of depositing the dredged material. Non-Federal interests must provide a cash contribution of 50 percent of construction costs allocated to land enhancement from placement of dredged material. However, at harbor projects, if the enhanced lands will benefit the project sponsor or users, a contribution of 100 percent of the cost allocated to that enhancement is required. Also, see paragraph 11-15 regarding local cooperation requirement that the local sponsoring agency retain fee ownership of lands created for development of port facilities.

b. Restriction on Ocean Disposal. Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (P. L. 92-532) states that, subject to certain provisions, and after notification to the Administrator of the Environmental Protection Agency, the Secretary of the Army, "may issue permits, after notice and opportunity for public hearings, for the transportation of dredged material for the purpose of dumping it into ocean waters, where the Secretary determines that the dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities." Ocean disposal in connection with Federal dredging projects may be authorized by the Secretary using the same procedures required for issuance of permits (para 21-2a(6)).

11-7. Lock and Dam Replacements. Section 4 of the River and Harbor Act approved 5 July 1884 as amended by Section 6 of the River and Harbor Act approved 3 March 1909 provides in part that whenever, in the judgement of the Secretary of the Army, the condition of any of the navigation works of the United States is such that its entire reconstruction is absolutely essential to its efficient and economical maintenance and operation, the reconstruction thereof may include such modifications in plan and location as may be necessary to provide adequate facilities for existing navigation: provided, that the modifications are necessary to make the reconstructed work conform to similar works previously authorized by Congress and forming a part of the same improvement, and that such modifications

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shall be considered and approved by the Board of Engineers for River and Harbors and by the Chief of Engineers before the work of reconstruction is commenced. Use of the 1909 authority will be for essential repairs, rehabilitation, replacement, or reconstruction of existing navigation structures which are required for continued use of the project for authorized purposes and which do not change the authorized project in scope, scale, or location. Also included under the 1909 authority are measures to improve operational efficiency such as modernization of operating equipment. The 1909 Act authority will not be used where it is determined that the necessary reconstruction work includes improvements, additions, or betterments which constitute a change in project purpose, size, location, or increased capacity beyond that obtainable from improved operational efficiency. District Engineers will examine from time to time the structural and economic adequacy of existing locks, dams, and other navigation structures to determine if they have become obsolescent as set forth in the law and meet the criteria for use of the 1909 authority. When appropriate, they will submit to the Office, Chief of Engineers through the Division Engineer, a request for authority to prepare a report. Operation and Maintenance, General, funds are used to accomplish the necessary studies, to develop all data needed and to prepare a report as basis for authorization of the replacement project by the Secretary of the Army. (ER 1165-2-301)

11-8. Drift and Debris Removal.

a. General Authorization. Section 202 of 1976 WRDA (Public Law 94-587) provides general authority for developing projects for the collection and removal of drift and debris from publicly maintained commercial boat harbors and from land and water areas immediately adjacent thereto. The term "drift" includes any buoyant material that could cause damage to a commercial or recreational vessel. The term "debris" includes any abandoned or dilapidated structure or any sunken vessel or other object that can reasonably be expected to collapse or otherwise enter navigable waters as drift.

b. Maintenance Operations. Action by the Corps in removing debris from navigable waterways is generally limited to the removal and disposal from the authorized project limits and immediate adjacent waterway areas (where the material may be carried into the channel) in the interest of general navigation. Drift collection is not accomplished in the slips of piers and wharves. Material lying in the shallow areas outside of the channels or along the shore is not gathered. Specific and limited local programs for continuing debris collection and disposal have been authorized by Congress for New York, Baltimore, and Norfolk Harbors; Potomac and Anacostia

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Rivers in the Washington, D. C. Metropolitan area; and San Francisco Harbor and Bay, California. These authorizations are on an individual basis, and the work is carried out as authorized at each locality as a separate, distinct project.

11-9. Cost-Sharing for Navigation. Federal participation in navigation project costs is limited to sharing costs for the general navigation features consisting of breakwaters and jetties if needed, entrance and primary access channels, turning basins, and anchorage areas. Non-Federal interests are responsible for and bear costs of terminal facilities; dredging in berthing areas and interior access channels; acquisition of the necessary lands, easements, rights-of-way; spoil disposal areas with retaining dikes; and hold and save. They must also relocate and alter affected utilities, pipelines, cables, and sewer outlets. They may also be required to provide at least one public terminal open to the use of all on equal terms. Additional local cooperation may be required because of special benefits; such as land enhancement from placement of dredged material, betterment in bridge changes, and special limited-interest facilities. Project proposals to Congress recommend a State financing contribution of five percent of the construction cost.

a. Commercial Navigation. The Federal government bears all costs of project construction, operation and maintenance, for commercial navigation, because of the general or widespread nature of the benefits. The Federal government maintains these waterway improvements to assure their continued transit availability. For transfer and lightering facilities and barge fleeting areas see paragraph 11-14.

b. Recreational Navigation. The Federal government will assume all pre-authorization planning and investigation costs, total costs of navigation aids and not more than one-half of the first costs of general navigation facilities serving recreational traffic. The 1970 River and Harbor Act made an exception, as noted below, for projects that involve charter fishing craft. The general navigation facilities are defined as including a safe entrance channel protected by breakwaters or jetties if needed, protected anchorage basins, turning basin, and major interior access channels leading to the anchorage basin or locally provided berthing area. Non-Federal interests bear one-half the construction cost of general navigation facilities and provide all lands, easements, right-of-way, a public wharf open to all on equal terms, and servicing facilities including dredging at entire local costs in berthing areas and minor access channels thereto, as well as providing necessary policing and other services. Costs of bridge alternations strictly for recreation

navigation are apportioned in accordance with the procedures of the Truman-Hobbs Act. Bridge alterations costs not apportioned to the bridge owner are costs shared 50 percent Federal and 50 percent non-Federal, the same as the costs of other general recreational navigation facilities. Costs of operation and maintenance of the general navigation features of a small boat harbor project is a Federal responsibility established by Section 6 of Pub. Law 93-251. (EM 1120-2-113; ER 1165-2-25; ER 1165-2-310)

c. Charter Fishing Craft, Head Boats, and Similar Recreation-Oriented Commercial Activities. Section 119 of the River and Harbor Act of 1970 (P.L. 91-611), states, "The Chief of Engineers, for the purpose of determining Federal and non-Federal cost-sharing, relating to proposed construction of small-boat navigation projects, shall consider charter fishing craft as commercial vessels." This Act applies only to cost allocation and cost apportionment and does not involve project formulation or evaluation.

d. Cost-Sharing Policy for Navigation Projects with Exclusive or Single Predominant User. (Para 11-10)

11-10. Navigation Project for General Versus Special Interest Beneficiary. Section 2 of the River and Harbor Act of 5 June 1920 provides that the Chief of Engineers in recommending navigation improvements shall make a determination of the general versus the special interest in an improvement, and recommend an appropriate sharing of costs between Federal and non-Federal interests. The existence of only one present or prospective user at a proposed navigation improvement has generally been considered to be evidence that special or local benefits are involved within the intent of the 1920 Act. Basic policy provides for Federal establishment or expansion of navigation waterways for general public use, and to provide relatively broad public benefits. Users and others are relied upon to construct their related facilities such as access channels from the main channel to wharfside. Under this policy the Federal participation in waterway undertakings varies from zero to 100 percent depending upon the nature of the services rendered, the incidence of benefits to the general public, and the significance of the proposed works compared to the total project.

a. Exclusive Use of Beneficiary. The Corps will not recommend any Federal cost participation, establishment, or expansion of a Federal project where the improvement would be capable of serving only a single user firm or individual. This situation exists when restrictive conditions of any sort permit the private user the exclusive present and future enjoyment of the project improvement.

An example of such exclusive benefits would be where one commercial entity controls all the land giving access to the navigation improvement. (Also see footnote (2) of Table 11-1)

b. Initial Predominant Use. The Corps will withhold recommending Federal participation in a significant increment of improvement where one predominant beneficiary would be served at the outset unless it can be firmly established that the improvement is to be used beneficially by other shippers within a reasonable short period of time (say 5 years). A significant increment is defined as one involving major increases in project length and/or depth and costs of at least 50 percent of the total project costs. Federal participation may be recommended when one beneficiary would be served initially, but a reasonable prospect exists for later multiple use. "Multiple Use" is defined as regular use by vessels (requiring the new project modification or improvement) serving a user other than the first user. A public utility is treated as a single user and vessel traffic to a single utility is not considered multiple use. If the project improvement is a modification of an existing project, multiple use exists only if the vessels serving a user other than the first user will also require the improved incremental project dimensions. The potential for other prospective shippers is controlled by factors such as availability, ownership, and suitability of adjacent waterfront land for development and location by other industries or users; availability of land transport and other essential service features; the area's economic potential; and determination that no restrictive conditions exist that would prohibit future use of the proposed improvement by others.

(1) Cost-Sharing Policy. Local interests shall contribute annually, until such time as multiple use of the general navigation facility actually occurs, 50 percent of the annual charges for interest and amortization of the Federal first cost of the improvement, exclusive of aids to navigation. For new channels or extensions to channels, the required annual contribution shall also include 50 percent of the operation and maintenance costs of the improvement until such time as multiple use is established. However, operation and maintenance costs for project modifications that deepen existing Federal navigation channels will be at Federal cost and not assigned as part of the required annual contribution. This distinction is considered appropriate because of the difficulty in realistically measuring incremental additional maintenance costs. The requirement for annual contributions may end when the Secretary of the Army determines that acceptable multiple use of the project improvement has commenced. These cash contribution requirements are in addition to the other regular established requirements of local cooperation for commercial navigation

Table 11-1
Single-User Cost Sharing Policy
Commercial Navigation Project

Category of Project	Initial Use	Prospective Future Use	Degree of Federal Participation	
			Initial Construction (1)	Operation & Maintenance
New channel or extension to existing channel	Single-user only (2)	Exclusive Single-user	None (2)	None (2)
New channel or extension to existing channel	Single-user	Reasonable prospect additional users	50% (3)	50% (4)
Modification (5) to existing channel	Significant proportion of increment for single-user	Reasonable prospect additional users	50% (3)	100%
Modification progressive development (6)	--	--	100%	100%
New (Completed by non-Federal interests) (7)	Single-user	Reasonable prospect additional users	None	None (8)
New (Completed by non-Federal interests) (7)	Multiple-use	Multiple-use	None	100% (9)

(1) Federal cost participation in the construction and maintenance of the navigation waterway improvement provided for general public use. Users or others provide related facilities such as berthing areas, docks, terminal and transfer facilities, and local access channels to wharfside and berths.

(2) Single commercial entity receiving exclusive benefit of shipment and/or receipt of commerce via waterway improvement. The single user determination lies in the identity of a single shipper or receiver, rather than the carrier of the commerce. No Federal participation will be recommended for an improvement where restrictive conditions of any sort (i.e. topography, ownership, laws, etc.) would permit the single private user the exclusive present and future enjoyment of the benefits from the improvement, so that the improvement would not be capable of serving more than the one user. This would be the case where one commercial entity controls all the land giving access to the navigation improvement.

(3) Non-Federal interests pay 50 percent of the annual charges for interest and amortization of the first cost of general navigation component until acceptable multiple use commences.

(4) Non-Federal interests pay 50 percent of maintenance cost until acceptable multiple use commences. Thereafter, maintenance costs are borne by the Federal Government.

(5) Enlargement, realignment, or other betterment of existing Federal navigation project involving increase in project depth and/or width.

(6) Progressive development includes nominal incremental extension "end of the line" situations where part of the improvement is a last project increment reaching a last additional user. The last user may be "at the end" in terms of length, depth, or width, necessitating some project investment in his service alone. This is treated as multiple use unless disproportionate incremental investment is required.

(7) Waterway previously constructed by non-Federal interests.

(8) Prior multiple use is a requirement for Federal assumption of maintenance responsibility. Federal assumption of maintenance must be specifically authorized by Congress.

(9) Not retroactive. No Federal reimbursement for prior local expenditures. Federal assumption of maintenance must be specifically authorized by Congress.

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projects. See the accompanying Table 11-1 which summarizes cost sharing policy for navigation projects with limited use.

(2) Single Carrier. The determination of exclusive or predominant user lies in the identity of the shipper or receiver, rather than in the mode of transportation (i.e., common and captive carriers). Thus, if one or more common carriers served only one shipper or receiver a single-user situation would prevail. However, this would not apply if a single carrier served several shippers or receivers.

c. Progressive Development. The general policy of Federal interest and cost-sharing principles apply where several users would be served at the outset or if additional users could be served immediately after project completion. This policy also encompasses the principles of progressive development to include: the situation where the improvement is the last increment of project construction reaching the last additional user; nominal incremental extension of navigation where Federal interest has already been established; and provision of justified service to additional users which reasonably might have been incorporated in the existing project had the need been foreseen at the time of its formulation. (Also see footnote (6) of Table 11-1)

11-11. Collection and Release of Waterborne Commerce Information.

a. Collection. Waterborne commerce statistics is one element in the Federal Shipping Statistic Program. Under the terms of the Federal Reports Act of 1942 and the Budget and Accounting Procedures Act of 1950, the Regulatory Policy and Reports Management Division of the Office of Management and Budget and the Office of Federal Statistical Policy and Standards in the Department of Commerce coordinate the program. The Corps of Engineers collects and compiles data on the domestic waterborne commerce; the Bureau of Customs collects and the Bureau of Census compiles the data on foreign waterborne commerce. The Bureau of the Census supplies the foreign traffic information required by the Corps of Engineers.

b. Release of Data. The data collected from the vessel operators will be held in strict confidence with the understanding that it will not be disclosed and will be used only in the compilation of port or waterway statistics. Dissemination of the data is by publication in the annual publication titled, "Waterborne Commerce of the United States." The public and other Federal agencies may be furnished unpublished information. Under the terms of the Federal Reports Act of 1942, detailed data are furnished to other Federal agencies. The Federal Reports Act differentiates

among Federal agencies, thus agencies which do not meet the terms of the Act may not be supplied data having greater detail than the published data. Data in greater detail than the published data may not be furnished to the public, including state, municipal or other government agencies. Contractors of the Corps of Engineers or Federal agencies designated in the Act, may be furnished detailed data solely for use under the contract and subject to the above restriction on confidentiality. Exceptions to this policy are decided by OCE. (ER 335-2-1; ER 360-2-103)

11-12. Aids to Navigation. The installation and maintenance of primary navigation aids in navigable waterways is the responsibility of the U. S. Coast Guard, Department of Transportation. District Engineers are authorized and directed to confer directly with the District Commander of the Coast Guard with reference to the establishment or alterations of suitable permanent aids to navigation. The Corps is responsible only for those navigational aids temporarily required because of construction operations, such as buoys to mark dredging equipment.

11-13. Waterway User Charges.

a. Fuel Tax. Section 202 of the Inland Waterways Revenue Act of 1978 (Public Law 95-502) imposes an excise tax on fuel used by certain commercial cargo vessels using specified inland or intracoastal waterways of the United States. The tax applies only to specific segments of the inland waterway system, and is excluded from coastal harbors, Great Lakes channels and harbors, and deep-draft sections of certain inland river systems. The fuel tax starts October 1980. The tax cost per gallon schedule calls for imposition of four cents 1980-1981, six cents 1981-1983, eight cents 1983-1985, and ten cents after 1985. This user charge in the form of a fuel tax does not apply to deep-draft ocean-going vessels (draft more than 12 feet); passenger vessels; State or local government vessels used in official business, movement of LASH and SEABEE ocean-going barges, or recreation craft. Sections 203 and 204 establish an Inland Waterways Trust Fund and specify its use. Fuel tax receipts are to be deposited in the Trust Fund. Amounts in the Trust Fund are to become available for future construction and rehabilitation for navigation.

b. Tolls. The Wiley-Dondero Act of 13 May 1954, authorizing the U.S. portion of the St. Lawrence Seaway, provided that tolls be established for that international waterway, in cooperation with Canada, to pay off debts and obligations of the Seaway Corporation formed to construct and operate the U.S. portion of the Seaway.

c. Study of User Taxes and Charges. Section 205 of the Inland Waterways Revenue Act of 1978 (Public Law 95-502) directs the Secretaries of Transportation and Commerce to conduct a full and complete study with respect to inland waterway user taxes and charges. The study must be made in consultation with the Secretaries of Army, Treasury, Agriculture, and Energy, the Attorney General, Chairman of the Water Resources Council, and the Director, Office of Management and Budget. The Act calls for a report to Congress no later than September 30, 1981, with findings and policy recommendations.

11-14. Transfer and Lightering Facilities, Barge Fleeting Areas. Non-Federal interests are responsible for provision of mooring facilities for the convenience of individual users or that are associated with localized operations. Facilities for the purpose of transfer of cargo between vessels and barge fleeting areas are a non-Federal responsibility. The Coast Guard sets regulations for lightering and designates those areas set aside for that purpose. Barge fleeting areas are defined as mooring areas or temporary anchorages used for assembling tows; making barge transfers between tows; transferring supplies; awaiting arrival of additional barges; or serving as a barge holding area. Consideration will be given to providing barge mooring at Federal cost when it can be demonstrated that such facility is required and necessary for safe and efficient use of a Federal navigation project. Examples would be provision of a mooring to permit reshaping a tow for (a) safe and efficient passage through a navigation lock; (b) safe passage through congested Federal channel areas; or (c) safer passage crossing exposed waters. The advance approval of the Chief of Engineers must be obtained before such facilities are recommended at Federal cost.

11-15. Ownership of Lands Created for Port Facilities. Some navigation project proposals include the filling of adjacent lands by placement of the dredged material to provide lands suitable for development of port facilities. Often development of these lands for port use would be necessary to insure that the traffic used to justify the navigation project would occur. It is the policy of the Chief of Engineers that reports that include a proposal to fill lands for development of port facilities shall also incorporate a local cooperation requirement that the local sponsoring agency will retain fee ownership of those lands for the economic life of the project. In addition, local interests shall be required to regulate the use, growth and development of harbor facilities and limit occupancy of the subject created lands area to those industries whose activities are dependent upon water transportation.

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11-16. Waterways Studies on National Scale. The National Transportation Policy Study Commission completed its report to Congress in summer 1979. The report covers all transportation modes and their relationships. The National Waterways Study is being conducted through the Institute for Water Resources. The study will "identify and analyze alternative strategies for providing a navigation system to serve the Nation's current and projected transportation needs." The report is scheduled for completion in 1981.

CHAPTER 12

FLOOD CONTROL

12-1. The Federal Interest. Congress, in the Flood Control Act of 1936, established as a nationwide policy that flood control on navigable waters or their tributaries is in the interest of the general public welfare and is therefore a proper activity of the Federal Government in cooperation with the States and local entities. It provided that the Federal Government may improve streams or participate in improvements "for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected." The 1936 and subsequent acts further specified the details of Federal participation. These actions have enlarged the scope of the Federal interest to include consideration of all alternatives in controlling flood waters, reducing the susceptibility of property to flood damage, and relieving human and financial losses. The encompassing term for this activity is "flood plain management."

12-2. Flood Plain Management. Flood plain management (FPM) is a continuing program, involving both Federal and non-Federal action, that seeks a balance between economic use and environmental quality in the management of the inland and coastal flood plains as components of the larger human communities. The primary aspects of flood plain management are reduction of damaging floods and reduction of susceptibility of property to flood damages. The former embraces the physical measures commonly called "flood control"; the latter, includes the regulatory and other land use adjustment measures exclusive of control of flood waters. By controlling flood plain land use and development, flood plain management regulations seek to reduce future susceptibility to flood hazards and damages consistent with the exposure involved.

a. Flood Plain Management Service. The Corps is authorized by Section 206 of the 1960 FC Act, as amended, to provide information, technical planning assistance, and guidance upon request to both Federal and non-Federal entities in identifying the magnitude and extent of the flood hazard and in planning wise use of the flood plains. It also administers studies which provide basic hydrologic and damage information to the Federal Emergency Management Agency on a reimbursable basis under interagency agreement. Direct response and assistance of this kind are provided through the Flood Plain Management Services Program.

b. Executive Order 11988. This Executive Order requires the Corps to provide leadership and take action to: (a) avoid development in the base flood plain unless it is the only practicable alternative; (b) reduce the hazards and risk associated with floods; (c) minimize the impact of floods on human safety, health and welfare; and (d) restore and preserve the natural and beneficial values of the base flood plain. In this regard, the policy of the Corps is to formulate projects which, to the extent possible, avoid or minimize adverse impacts associated with use of the base flood plain and avoid inducing development in the base flood plain unless there is no practicable alternative for the development. If it is intended to locate or undertake an action in the base flood plain, the Executive Order requires that a determination be made whether a practicable alternative to the proposed action exists. This requires the identification and evaluation of alternatives that could be located outside of the base flood plain (alternative sites); other means that would accomplish the same purpose(s) as the proposed action (alternative actions), and no action. Whenever no practicable alternative exists to undertaking an action in the flood plain, appropriate steps must be taken to minimize the impact of floods on human safety, health and welfare, minimize any induced development likely to occur as a result of the action, and restore and preserve the natural and beneficial flood plain values. (ER 1165-2-26)

c. Measures to Reduce Damage Susceptibility. Section 73 of Public Law 93-251 expresses Congressional policy and, in effect, endorses Corps practice that consideration shall be given to non-structural measures in planning for flood damage prevention or reduction. Where a non-structural alternative is recommended, non-Federal participation shall be limited to 20 percent of the project costs. (ER 1165-2-122)

d. Modification of Federal Facilities. In planning or modifying Federal facilities on flood plains and in disposing of Federal lands and property, the Corps will follow the Flood Plain Management Guidelines (43 FR 6030), 10 February 1978, issued by the Water Resources Council pursuant to Executive Order 11988.

12-3. Flood Related Planning Policy. It is the policy of the Chief of Engineers, to consider in the planning process all practicable and relevant alternatives applicable to sound flood plain management. No one alternative will be pre-judged superior to any other. Positive actions are of two kinds. (ER 1120-2-117)

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a. Measures to Modify Floods. These include dams and reservoirs, levees, dikes, walls, diversion channels, bridge modifications, channel alterations, pumping, and land treatment. All such measures reduce the frequency of damaging overflows.

b. Measures to Modify Damage Susceptibility. These include flood forecasting and warning systems; temporary or permanent evacuation and relocation; emergency flood fighting and financial relief; land use regulations including floodway delineation, flood plain zoning, subdivision regulations and building codes; flood proofing with or without land use regulations; area renewal and conversion to open space; and flood insurance.

12-4. Design Flood Criteria. The Corps policy in design of flood control projects is to provide an optimum degree of protection consistent with safety of life and property. The Corps seeks an economically efficient degree of protection and land use in agricultural areas, and acceptable reduction of risks and preservation of environmental values in protecting other rural and urban areas. Recognizing that catastrophic storms and floods are unavoidable, flood design criteria have been defined as follows:

a. Probable Maximum Flood (PMF). This is the most severe flood which can result from the most critical combination of precipitation (and snow melt, if pertinent), minimum infiltration losses, and concentration of runoff at a specific location, that is considered "reasonably possible" from a particular drainage area, based on scientific hydrometeorological and hydrologic engineering analyses. Probable maximum precipitation amounts are used to derive the spillway design flood for large dams to insure their safety against even a remote possibility of failure. The PMF is derived from probable maximum precipitation (PMP), which information is generally available from the National Weather Service, NOAA.

b. Standard Project Flood (SPF). The standard project flood is the criterion or standard for the area upon which decision is based as to the type and degree of protection required. It represents the flood runoff that may be expected from the most critical combination of precipitation (and snow melt, if pertinent), minimum infiltration losses, and concentration of runoff at a specific location, that is considered "reasonably characteristic" of the region and drainage area involved, excluding extraordinarily rare combinations. As a rule of thumb, the SPF peak discharge and volume are usually equal to about 50 percent of the PMF for the same basin, when the comparison relates to runoff from rainfall of approximately four days or less. This 50 percent ratio does not

necessarily apply to flood estimates for very large drainage basins, to estimates governed largely by snow melt, or to areas with large infiltration capacity.

c. Design Flood. This is a flood adopted for the design of individual flood control works. It provides technically feasible protection which normally is economically justified. The design flood may be less than the standard project flood, depending upon the residual flood hazard to life and health and other design considerations including social and environmental objectives.

d. Level of Protection. On the assumption that an exceedence of the design flow would cause a catastrophe, the standard project flood (SPF) is the desirable minimum level of protection that should be recommended for high levees, high floodwalls, and high velocity channels in urban areas. Higher levels of protection, using design floods up to the probable maximum flood (PMF) should be considered in the plan formulation process and may be recommended if incrementally justified.

e. Freeboard Allowance. Freeboard is the marginal height provided on levees above design flow lines to insure, as fully as practicable, against over-topping due to uncertainties in the state of project maintenance or flood flow characteristics. No additional protection or benefits are claimed for the effects of freeboard.

12-5. Non-Structural Measures. In conducting feasibility studies for flood plain areas, all practical measures which may make contributions to the two national objectives (NED and EQ) are evaluated, regardless of the level of government responsible for implementation. The Corps takes the lead in encouraging participation by State and other Federal agencies in solving problems related to flood plain use. Reducing flood damages, providing public park and recreational lands, and protecting the natural values of waterways are compatible goals well suited to joint study and an integrated solution involving other agency programs affecting flood plains. The Corps may recommend participation in non-structural measures consistent with Section 73(b), Public Law 93-251. However, participation in evacuation and flood proofing of a single building or facility, or to a small number of buildings or facilities, is recommended only when such protection is a part of a broader flood damage reduction plan being implemented by the Corps. Recommendation of flood proofing measures that would leave occupied buildings inaccessible during a flood are avoided.

The Corps will acquire all necessary interests in real estate for non-structural measures recommended as part of a Federal project. When evacuation or relocation is recommended, fee title will be obtained. Upon removal of incompatible structures and restoration, title to the land will be conveyed to the State or local agency to be used for project purposes. (ER 1165-2-122)

12-6. Major Drainage. Section 2 of the Flood Control Act of 1944 redefined flood control to include "channel and major drainage improvement."

a. Major Outlets. Legislative recognition that the provision of major drainage outlets is an essential part of and complement to flood control improvements, is interpreted to permit major drainage improvements of natural waterways and their tributaries, and of existing artificial waterways. Major outlets are designated as those for the drainage from an organized or contemplated drainage district, groups of drainage districts, or local governmental unit such as county, town, or city. Normally, the Federal project for an outlet drainage channel will consist of works in a natural stream or existing artificial waterway. However, new artificial drainage channels may be constructed under the Federal program wherever that procedure would be technically more effective, environmentally sound, and would be more economical than improvement of existing drainage courses.

b. Agricultural. In agricultural areas, collection of drainage water is considered a local responsibility. This includes such work as ditching, diking, and grading, on farms and within local drainage districts or governmental units. Federal outlets works may "tie" into such local works. The first costs of major outlets are shared equally; operation and maintenance is a local responsibility.

c. Urban. Flood damage reduction works in urban areas are the adjustments in land use and the facilities (structural and non-structural) designed to reduce flood damages in urban areas from overflow or backwater due to major storms and snowmelt. They include structural and other engineering modifications to natural streams or to previously modified natural waterways. In urban or urbanizing areas, provisions of a basic drainage system to collect and convey the local runoff to a stream is a non-Federal responsibility. Water damage problems may be addressed under the flood control authorities downstream from the point where the flood discharge is greater than 800 cubic feet per second for the 10 percent flood (one chance in ten of being equalled or exceeded in any given year) under conditions expected to prevail during the

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period of analysis. Drainage areas of less than 1.5 square miles shall be assumed to lack adequate discharge to meet the above criterion. Exceptions may be granted in areas of hydrologic disparity producing limited discharges for the 10 - percent flood but in excess of 1800 cfs for the one - percent flood. (ER 1165-2-21)

12-7. Local Cooperation and Cost Sharing. Congressional authorizations of specific projects in the period 1936 - 1941 established the general Federal policy on cost sharing for flood control projects. In the past the Corps has generally recommended similar requirements in subsequent proposals. These requirements are generally described below. However, new flood control projects submitted for Congressional authorization recommend cost sharing in accordance with paragraph 12-7e.

a. Major Corps Lakes. The Federal Government will assume the total costs (including operation and maintenance) allocated to the flood control function of major reservoirs.

b. Local Flood Protection. Local interests are required to provide all lands, easements, rights-of-way and all alterations and relocations to utilities, streets, bridges, buildings, storm drains, and other structures and improvements; hold and save the United States free from damages due to the construction works; and assure operation and maintenance of the works after completion in accordance with regulations prescribed by the Secretary of the Army (33 CFR 208.10). These requirements are known as the "a-b-c" requirements of local cooperation from their general description in Section 3 of the 1936 FC Act. Whenever, the cost of required lands, easements and rights-of-way exceed the construction cost of the project, local interest may be reimbursed one-half of the excess cost. Changes to railroad bridges and approaches are 100 percent Federal expense as authorized by Section 3 of Public Law 526, 79th Congress. Where a nonstructural alternative measure is recommended, non-Federal participation is 20 percentum of the project costs for the nonstructural measures.

c. Special Cases. The Chief of Engineers has administratively defined cost sharing policies for special cases, to provide equitable and practicable Federal -- non-Federal cooperation in the following situations:

(1) Reservoirs having limited or local effectiveness and provided in lieu of local protection measures require the "a-b-c" provisions;

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(2) Projects providing windfall-type benefits of "unconscionable" magnitude to a few beneficiaries are considered to warrant special and equal cost sharing, usually as a cash contribution, from the responsible local entity, in addition to other requirements of cooperation. Suballocation of this added cost is the responsibility of the local entity;

(3) Local interests are assigned the cost of covering flood control channels when provision of the cover is not required for safety or when it decreases net NED flood control benefits. (ER 1165-2-118)

(4) Special items of construction cost may be assigned to the Corps or to local entities, depending on practical considerations of construction procedures, safety, and efficiency.

d. Regulation of the Flood Plain. Adoption and enforcement of regulations for flood plain management is entirely a local responsibility. The Corps cannot require flood plain regulation of non-Federal entities as the sole action to be taken. However, non-Federal entities may be required to adopt, enforce, and adhere to a sound, comprehensive plan of flood plain management in project overflow areas. In unprotected areas, local interests may be required to adopt and enforce such regulations if they are necessary to protect the Federal investment or achieve expected project benefits. (ER 1165-2-21 and ER 1165-2-122)

e. Requirements for New Projects. In accordance with the President's cost sharing policy (para 5-11b) authorization reports proposing the adoption of flood control projects by Congress include requirements that local interest provide a standard 20% contribution for structural and non-structural measures. This contribution may be in cash or may consist of lands, easements, rights-of-way, relocations or other real property interests necessary to and a part of the project and may be made prior to initiation of construction or in ten annual installments. In addition, they recommend a State financing contribution of five percent of the construction cost.

12-8. Flood Insurance. A National Flood Insurance Program is available to protect the individual in covered communities from financial disaster in the event of a flood. Insurance by definition is economically inefficient because it reimburses for loss but does not normally prevent the loss. Under the National Flood Insurance Program (P.L. 90-448, as amended) insurance is subsidized, up to an amount specified, on properties in areas designated as hazardous by the Federal Insurance Administration. The land use control measures required of communities to gain and maintain eligibility for flood insurance are complementary to other flood plain management efforts.

Section 202 of Public Law 93-234 states that no Federal officer or agency shall approve any financial assistance for acquisition or construction purposes after July 1, 1975 for use in any area identified by the Federal Emergency Management Agency as an area having special flood hazards unless the community in which such area is situated is then participating in the national flood insurance program. It is considered that this prohibition does not apply to flood related activities of the Corps of Engineers.

12-9. Evaluation of Economic Benefits for Flood Control.

Floodplain management, including flood control and prevention, can contribute to the National Economic Development (NED) Objective by improving the net productivity of flood prone land resources. This occurs either by an increase in output of goods and services and/or by reducing the cost of using the land resources (improvement in economic efficiency). The benefit standard is the willingness of users (benefiting activities) to pay for each increment of output from a plan. (ER 1105-2-351, also see para 5-8 regarding the use of the WRC Planning Manual)

a. Evaluation Procedure. Each flood plain management plan under consideration is evaluated on a with and without basis. The without condition is that most likely to occur without the specific plan and gives proper recognition of the effect of the flood hazard on the probable course of development. The adoption and enforcement of appropriate land use regulations pursuant to the Flood Disaster Protection Act of 1973 (PL 93-234) is assumed, both with and without a Corps plan. For purposes of evaluating structural components of a plan, rational economic use of the flood plain is assumed. Economic rationality assumes that users of the flood plain will attempt to maximize returns, and take actions with full knowledge of the flood hazard. Benefits and costs are evaluated under prices existing at the time of submission of the report to OCE.

b. Flood Control Benefits. NED benefits are categorized according to their effect as inundation reduction benefit, intensification benefit, or location benefit. Inundation reduction benefit is the value of reducing or modifying the flood losses to the economic activity using the flood plain without any plan. Inundation reduction benefits are usually measured as the reduction in the amount of flood damages or related costs (those which would be voluntarily undertaken by economically rational individuals to reduce damages). Intensification benefit is the value of more intensive use of the land. As an example a shift from lower to higher value crops or higher crop yields. Location benefit is the

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value of making flood plain land available for a new economic use (e.g., where a shift from agricultural to industrial use occurs).

c. Benefits from Evacuation or Relocation. NED benefits resulting from evacuation and relocation plans consist of: benefits from the new use of the flood plain; reduction of externalized flood damages (damages absorbed by non-flood plain occupants); benefits accruing to off-flood-plain properties adjacent to open space; and increases in the market value of relocation sites. Relocation or evacuation plans may be economically justified where:

(1) The use (with the project) of the flood plain in a way compatible with the flood hazard (e.g., recreation) yields a higher net economic return than the current use of the flood plain, or

(2) The current (without project) use of the flood plain has greater costs than benefits from a national perspective and is maintained either because of a lack of information on the part of flood plain occupants or because part of the cost of flood damages have been externalized.

Benefits are not claimed for relocating or evacuating new structures which might locate on the flood plain without a project. (ER 1105-2-353)

12-10. Flood Emergency Operations and Disaster Assistance.

a. Public Law 84-99. Emergency activities pursuant to Public Law 99, 84th Congress as amended by Section 206, of the Flood Control Act of 1962, includes the following work whenever and wherever required: flood emergency preparation; flood fighting and rescue operations; emergency repair and restoration of flood control works such as levees which are threatened or destroyed by flood; emergency protection of Federally authorized hurricane and shore protection works being threatened; and the repair or restoration of Federal hurricane or shore protection structures damaged or destroyed by wind, wave, or water action of other than an ordinary nature. The authority under Public Law 84-99, as amended, was expanded by Section 82, Public Law 93-251, which authorized providing emergency supplies of clean drinking water to any locality confronted with a source of contaminated drinking water causing or likely to cause a substantial threat to the public health and welfare of the inhabitants of the locality. Authorized emergency activities are financed from an Emergency Fund authorized by Public Law 84-99, to be replenished on an annual basis. (ER 500-1-1)

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(1) The provision of advance flood control measures by the Corps is supplemental to individual and local community efforts, rather than replacements for them. Corps protective and preventive measures will generally be of a temporary nature designed to meet an imminent threat. Permanent rehabilitation work to protect against the threat of future disasters will be considered separately from advance measures. A declaration of a state of emergency or written request by the Governor of a State, is a prerequisite to furnishing advance measures under Public Law 84-99. Local interests are required to remove temporary works provided as advanced measures.

(2) It is Corps policy that local assurances and appropriate requests for assistance will be obtained. Local cooperation for accomplishment of advance measures and rehabilitation works require local assurances to (a) provide without cost to the United States all lands, easements and rights-of-way necessary for the authorized emergency work; (b) hold and save the United States free from damage due to the authorized emergency work; and (c) maintain and operate all the rehabilitation work after its completion. Additional features of local participation should also be considered, as appropriate, and included in the assurance agreement; e.g., the removal of emergency flood control measures, after their purpose has been served, is a local responsibility.

(3) Requests for providing emergency supplies of clean drinking water are considered separately from the flood and coastal storm emergency activities. Each application for assistance must be presented by the appropriate authority of the State. The State and locality must agree to mutual participation with the Federal Government, on terms deemed advisable by the Chief of Engineers.

(4) Under Public Law 84-99, emergency funds may be expended directly by the Corps for authorized purposes. However, there is no authority under Public Law 84-99 whereby local interests may be reimbursed for any of their costs for emergency operations accomplished on their own behalf. Also Public Law 84-99 authority and funds are not used in lieu of other appropriate continuing Corps authorities.

b. Other Disaster Assistance. Disaster assistance beyond Corps statutory authority will conform to the provisions of AR 500-60 which pertains primarily to military assistance. In the event of Presidential declaration of a major disaster, or emergency declared by the Administrator, Federal Disaster Assistance Administration (FDAA), assistance to state and local governments is provided in essential recovery operations when and as directed by the President

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through the FDAA under the provisions of Public Law 93-288. The Corps fully responds to all requests from the FDAA Administrator or Regional Director.

12-11. Use of Storage Allocated for Flood Control and Navigation at Non-Corps Projects. Section 7 of the Flood Control Act of 1944 requires the Secretary to prescribe regulations for the use of storage allocated for flood control or navigation at all reservoirs constructed wholly or in part with Federal funds. During the planning and design phases, project owners consult with the Corps regarding the quantity and value of space to reserve in the reservoir for flood control and/or navigation. (ER 1110-2-241)

BROAD See ^{ER} 1165-2-130
DISCRETION

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CHAPTER 13

BEACH EROSION CONTROL AND HURRICANE PROTECTION

13-1. Beach Erosion Control.

a. Federal Interest. Before 1930, Federal interest in shore erosion problems was limited to the protection of Federal property and improvements for navigation. At that time, an advisory "Board on Sand Movement and Beach Erosion" appointed by the Chief of Engineers was the principal instrumentality of the Federal Government in this field. The need for a central agency to assemble data and provide engineering experience regarding coastal protection was recognized by Congress with creation of the Beach Erosion Board authorized by Section 2 of the River and Harbor Act approved 3 July 1930 (P.L. 520, 71st Congress, 33 U.S.C. 426). The Board was empowered to make studies of beach erosion problems at the request of, and in cooperation with cities, counties, or states. The Federal government bore up to half the cost of each study but did not bear any construction costs unless federally owned property was involved. An Act of Congress approved 13 August 1946 (P.L. 727, 79th Congress) established a policy of Federal aid in construction costs where projects protected publicly owned shores. An Act approved 28 July 1956 (P.L. 826, 84th Congress) amended that basic beach erosion legislation to authorize Federal participation in the protection of private property if such protection was incidental to the protection of publicly owned shores, or if such protection would result in public benefits. The R&H Act of 1962 (P.L. 87-874) increased the proportion of construction costs borne by the Federal government and made the total cost of studies a Federal responsibility. An Act approved 7 November 1963 (P.L. 88-172) abolished the Beach Erosion Board, transferred its review functions to the Board of Engineers for Rivers and Harbors, and established the Coastal Engineering Research Center. (ER 1165-2-130)

b. Definition. Under existing beach erosion control laws Congress has authorized Federal participation in the cost of restoring and protecting the shores of property on the Atlantic and Pacific Oceans, the Gulf of Mexico, the Great Lakes, and lakes, estuaries and bays, directly connected therewith. The intent of this legislation is to prevent or control shore erosion caused by wind and tidal generated waves and current along the nation's coasts and shores. Such adverse effect extends only the distance up tributary streams where it can be demonstrated that the dominant causes of erosion are ocean tidal action (or Gulf of Mexico and Great Lakes water motion) and wind-generated waves. Beach erosion control legislation does not authorize correction of erosion at

upstream locations caused by streamflows. Shore or beach damage is primarily the result of erosion by persistent littoral processes and the battering action of abnormal waves occurring during storms. Federal participation in construction cost is limited to restoration of damaged beaches. Shore and beach damage resulting from Federal Navigation works is discussed in paragraph 10-9.

(1) Restoration and Protection. The term "restoration" was substituted for "improvement" in the amendment of July 28, 1956 (Public Law 826, 84th Congress; 70 Stat. 702) so that the basis for Federal concern became "restoration and protection." In connection with this revised language, Committee reports of both the Senate and House Public Works Committees stated that:

"H.R. 11861 would substitute 'restoration' for 'improvement' as the purpose of works to be eligible for Federal assistance. This change is desirable, as the Committee believes that the intent is to restore lost lands rather than to create new lands..." (House Report No. 2544 and Senate Report No. 2691; 84th Cong.)

Accordingly, Federal participation is limited to restoration of the historic shoreline. It does not provide for Federal cost sharing in extending a beach beyond its historic shoreline unless required for protection of upland areas.

(2) Public Use. The term "public use", particularly of private property, means recreational use by all on equal terms and open to all regardless of origin or home area. Prohibited is any device for limitation of use to specific segments of population, such as local residents, or similar restrictions on outside visitors, directly or indirectly. This definition allows a reasonable beach entrance fee, uniformly applied to all, for use in payment of local project costs. Normal charges made by concessionaires and municipalities for use of facilities such as bridges, parking areas, bath houses and umbrellas are not construed as a charge for the use of the Federal beach project, as long as they are commensurate with the value of the service they provide and return only a reasonable profit. Fees for such services must be applied uniformly to all concerned and not as a prerequisite to beach use. Lack of sufficient parking facilities for the general public (including non-resident users) located reasonably near and accessible to the project beaches would constitute a de facto restriction on public access and use of such beaches, thereby precluding eligibility for Federal assistance.

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Cost Sharing. Federal participation is based on the shore ownership, use, and type and incidence of benefits. If there is no public use or benefit, Federal funds can not be used. The first costs allocated to restoration and protection of Federal property are borne fully by the Federal government. Cost sharing for multiple-purpose hurricane and beach erosion control projects is presented in paragraph 13-2. The costs of lands, easements, and operation and maintenance are Non-Federal. In addition to the cost sharing described below new project proposals to Congress recommend a five percent State financing contribution of five percent of the construction cost. (ER 1165-2-130)

(1) Non-Federal Shores. Federal participation is 50% of the first cost of protection for shores owned by non-Federal public agencies, exclusive of land costs. Protection of certain shores not publicly owned may be eligible for Federal cost sharing up to 50% provided it can be shown that there would be significant public benefits arising from public use or from direct protection of nearby public facilities. The Federal participation is adjusted in accordance with the degree of public benefits.

(2) Park and Conservation Areas. Section 103 of the 1962 R&H Act provides that under special conditions, beach erosion protection of a State, County, or other publicly owned shore park and conservation area is eligible for Federal cost sharing up to 70 percent of the total project cost, exclusive of land costs. In order for the maximum 70 percent Federal participation to be applied to parks and conservation areas, all of the following specified criteria must be met to the satisfaction of the Chief of Engineers.

- (a) The land must be publicly owned.
- (b) The park must include a zone extending landward from mean low water line which excludes all permanent human habitation. This excludes summer residences, but does not preclude residences of park personnel or management and administrative buildings.
- (c) The park must include a beach suitable for recreational use.
- (d) The park must provide for preservation, conservation, and development of the natural resources of the environment.
- (e) The park or conservation area must extend landward a sufficient distance to include protective dunes, bluffs or other natural features which will absorb and dissipate wave energy and flooding effects of storm tides. The purpose of this requirement is to provide a protective buffer zone which would prevent damage of upland property and development.

(f) Full park facilities must be provided for appropriate public use.

(3) Beach Use by Private Organizations. Federal aid to private shores owned by beach clubs and hotels is incompatible with the intent of P.L. 84-826. Actual use of these beaches is subject to the limitation of club membership or to being a guest at the hotels, even though the clubs or hotels may indicate that membership or guest privileges are open to all on equal terms. Usually, these establishments are operated for private profit or to restrict beach use. They exclude all members of the general public except for membership or paying guests. It is considered that their facilities, including parking facilities therefor, are not open to the general public. However, protection of such private shores must sometimes be included when determined essential to a complete overall project.

(4) Beach Erosion Protection for Lands Controlled by Another Federal Agency. It is inappropriate that projects wholly for protection of Federal lands (for example, military installations and National Park Service lands) compete for funding under the Corps civil works program in competition with studies and projects requested by non-Federal public agencies. The Corps should not be placed in the position of defending the programs of another Federal agency before OMB and the Congress. Costs or work specifically to protect lands controlled by another Federal agency will be borne by the agency concerned. The Corps will accomplish such work on a reimbursable basis upon request (See Paragraph 9-10). An exception would be a case wherein the lands in question involve only a minor, but integral, part of the overall protection frontage. In such a case, protection would be included to assure a complete overall project.

d. Periodic Nourishment. No Federal contribution toward project maintenance is authorized. However, the Act of 1956 (Public Law 84-826) provides that Federal participation may be made toward periodic beach nourishment when found to comprise a more suitable and economical remedial measure for beach erosion control than other construction. Corps recommendations for periodic beach nourishment (sand replacement) are limited to the period specified in authorizing documents. Section 156 of P.L. 94-587 allows extension of the authorized period to 15 years if appropriate. Preauthorization reports will generally recommend Federal assistance in periodic nourishment for the economic life of the project.

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13-2. Hurricane, Tidal and Lake Flood Protection.

a. Federal Interest. The federal interest in projects to protect against hurricane, abnormal tidal, and Great Lakes flood damage is not explicitly defined by legislation. Congressional authorization for Corps construction of such projects, on a case-by-case basis, has essentially established the Federal concern. Public use is not a condition for federal participation in protecting against hurricanes. (ER 1165-2-130)

b. Definitions. Hurricane and tidal flooding result from abnormal rises in tidal levels due to storms and from the inrush of waters as a result of waves. Great Lakes flooding results from storm-induced inundation superimposed on the ordinary cyclic changes of the lake surface.

c. Cost Sharing. In accordance with the President's proposed cost sharing policy, projects for Hurricane, Tidal and Lake Flood Protection require the local sponsor to contribute 20 percent of the construction cost. Previously it was Corps policy to limit the Federal share of project cost to a maximum of 70 percent. Successful protection against hurricane and tidal flooding on the open coast frequently requires that the shoreline be concomitantly stabilized against erosion. For multiple-purpose hurricane protection and beach erosion control projects, Section 208 of the 1970 Flood Control Act provides discretionary power to the Secretary of the Army acting through the Chief of Engineers to authorize a Federal share up to 70 percent of the project costs exclusive of land costs. Cases warranting such adjustments are to be submitted to the Chief of Engineers for consideration. In addition, new proposals to Congress recommend a State financing contribution of five percent of the construction cost.

13-3. Evaluation. Measures for control of beach erosion and protection against hurricane and tidal flooding may include benefits from beach restoration, land loss and other physical damages prevented, emergency and business costs avoided, enhancement of property values, increased recreational usage, and prevention of loss of historic or scenic aspects of the environment. Benefits are measured as the differences in these values under conditions expected with and without the contemplated control measures.

13-4. Local Cooperation.

a. Local Sponsor. Formal assurances of local cooperation must be furnished by a municipality or public agency fully authorized under State laws to give such assurances and financially capable of fulfilling all measures of local cooperation.

b. Requirements. Local cooperation requirements for beach erosion, hurricane protection, and projects with combined purposes, are essentially similar. The sponsor must agree to:

(1) Contribute in cash the local share of project construction cost.

(2) Provide without cost to the United States all necessary lands, easements, rights-of-way, and relocations required for construction of the project, including that required for periodic nourishment.

(3) Hold and save the United States free from claims for damages which may result from construction and subsequent maintenance of the project, except damages due to the fault or negligence of the United States or its contractors.

(4) Assure continued conditions of public ownership and use of the shore upon which the amount of Federal participation is based during the economic life of the project.

(5) Assure maintenance and repair, and local share of periodic beach nourishment where applicable, during the useful life of the works as required to serve the project's intended purpose.

(6) Provide and maintain necessary access roads, parking areas and other public use facilities open and available to all on equal terms.

(7) Specific cases may also warrant assigning other additional local responsibilities, such as providing appurtenant facilities required for realization of recreational benefits.

13-5. Shoreline Erosion Control Demonstration Act of 1974. Section 54 of Pub. Law 93-251 authorized a national shoreline erosion control demonstration program to demonstrate low cost methods of controlling erosion at selected sheltered shoreline areas and establishment of a shoreline erosion advisory panel (SEAP). Provisions of the Act provide for a five-year program at a total cost not to exceed \$8,000,000.

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13-6. Technical and Engineering Assistance on Shore Erosion.

Section 55 of Pub. Law 93-251 authorized the Secretary of the Army, acting through the Chief of Engineers, to provide technical and engineering assistance to non-Federal public interests in developing structural and non-structural methods of preventing damages attributable to shore and streambank erosion.

13-7. Emergency Protection.

a. Section 14 of the Flood Control Act approved 24 July 1946, P.L. 79-526, as amended, provides authority for the Secretary of the Army to undertake emergency measures to prevent erosion damages to endangered highways, public works, and non-profit public facilities (paragraph 14-3). (ER 1105-2-50)

b. Public Law 84-99 provides authority to provide emergency protection of Federally authorized and constructed hurricane and shore protection works being threatened; and the repair or restoration of Federal authorized and constructed hurricane or shore protection structures damaged or destroyed by wind, wave, or water action of other than an ordinary nature. (ER 500-1-1)

Engineering Regulations

CHAPTER 14

STREAM BANK EROSION CONTROL

14-1. Federal Interest. Remedial or corrective measures for bank erosion should be considered in studies of regulating river flows. However, except in serious cases affecting the general public welfare, and as otherwise stated below, the Federal interest is limited to bank stabilization measures required as components of flood control, navigation and other water resources developments. Costs of such components will be shared in accordance with the basic policies applicable to the project functions served. Justification may be judged in terms of economic and environmental damages prevented or improvement of economic and environmental values, whether the measures are independent or component parts of larger systems of works.

14-2. Nature of Effects. Bank erosion causes loss of land and monetary income therefrom, affects the tax base, pollutes streams, depletes reservoir storage, silts up wetlands and estuaries, and disrupts ecologic and economic activities. Control of such erosion would alleviate these effects. However, practicable remedial measures, limited to those that are economically justified, would probably have only a limited effect on the overall impact of naturally occurring bank erosion.

14-3. Special Continuing Authority.

a. Authority. Section 14 of the 1946 Flood control Act, as amended, states that: "The Secretary of Army is hereby authorized to allot from any appropriations heretofore or hereinafter made for flood control, not to exceed \$10,000,000 per year, for the construction, repair, restoration, and modification of emergency streambank and shoreline protection works to prevent damage to highways, bridge approaches, and public works, churches, hospitals, schools and other non-profit public services when in the opinion of the Chief of Engineers such work is advisable: Provided, that not more than \$250,000 shall be allocated for this purpose at any single locality from the appropriations for any one fiscal year."

b. Applicability. The purpose of work under this authority is to prevent flood or erosion damage to endangered highways, highway bridge approaches, and similar, essential and important public works, or non-profit public facilities. In addition to major highways systems of national importance, eligible highways include principal highways, streets, and roads of significant importance

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to the community, such as arterial streets, important access routes to other communities and adjacent settlements, as well as roads designated as primary farm to market roads. "Public Works" means those essential facilities which serve the general public and are owned and operated by the Federal, State or local government, such as municipal water supply systems, and sewage disposal plants. "Non-profit public services" are structures or related services fully open and available to the general public such as churches, and public and private non-profit hospitals, and schools.
(ER 1105-2-50)

14-4. Streambank Erosion Control Evaluation and Demonstration Act of 1974, as amended. Section 32 of Pub. Law 93-251 as amended authorizes \$50 million for a national streambank erosion prevention and control demonstration program. The program consists of an evaluation of the extent of streambank erosion; development of new methods and techniques for bank protection, research on soil stability, and identification of the causes of erosion; a report to the Congress on the results of such studies and the recommendation of the Secretary of the Army on means for the prevention and correction of streambank erosion; and demonstration projects. Demonstration projects shall reflect a variety of geographical and environmental conditions, including streams with naturally occurring erosion problems and streams with erosion caused or increased by man-made structures or activities. Prior to construction non-Federal interests must agree that they will provide without cost to the United States lands, easements, and rights-of-way necessary for construction and subsequent operation of the projects; hold and save the United States free from damages due to construction, operation, and maintenance of the projects; and operate and maintain the projects upon completion.

14-5. Technical and Engineering Assistance on Streambank Erosion. Section 55 of Pub. Law 93-251 authorizes the Secretary of the Army, acting through the Chief of Engineers, to provide technical and engineering assistance to non-Federal public interests in developing structural and non-structural methods of preventing damages attributable to shore and streambank erosion.

14-6. Streambank Erosion Resulting from Project Construction and Operation.

See paragraph 10-10.

CHAPTER 15

HYDROELECTRIC POWER

15-1. Authority and Corps Responsibilities. Through various statutes, Congress has directed consideration of hydroelectric power in water resource development plans. The Corps formulates comprehensive plans which include consideration of hydroelectric power, and submits recommendations thereon to Congress. Congress has authorized projects that involved hydro-power development on the basis of these recommendations. The Corps 67 hydroelectric projects (as of March 1979) produce 25.8 percent of the nation's hydropower capacity and 4 percent of the total United States electrical energy.

a. General Responsibilities. The various functions of multiple-purpose water resource development projects are interrelated, and operation for individual functions is coordinated with operation for all functions. The Corps is responsible for insuring the maximum sustained public benefits from each of its projects for all desirable purposes, including power, as integral parts of comprehensive plans for the regulation, control, conservation and utilization of water resources. Consistent with the project authorizations, this is a continuing responsibility throughout the planning, design, construction, and operation phases. Particular attention is given to the operation of projects to obtain the benefits which were anticipated during the planning stages. Within the scope of projects as authorized, the Corps is responsible for determining the proper design and plan of operation for each of its projects so that maximum sustained public benefits will be obtained. Valuable assistance is obtained from other agencies on special aspects such as expected market for power and the value of the power. The Corps of Engineers must review data and recommendations furnished by others and make such additional investigations as are necessary so that its responsibilities are fulfilled.

b. Additional Responsibilities. Congressional authorizations include the responsibility for the Corps to operate projects under its jurisdiction for all authorized purposes. The Corps is responsible for determining the costs and annual charges of recommended plans of improvement, allocation of those costs and charges to functions served (except where provided otherwise by law), maintaining cost accounting records, maintaining records of project operations, and furnishing others such information as required or appropriate. (EM 1165-2-102)

15-2. Evaluation. (See para 5-8 regarding the use of the WRC planning manual).

a. Justification. In determining the justification for inclusion of power facilities, the following are considered:

(1) The power should be useable in, and adaptable to, the requirements of the overall regional power load. The Federal Energy Regulatory Commission (FERC) is consulted on this feature.

(2) Total project benefits should equal or exceed total project costs. Economic costs of a project with power are usually expressed as an equivalent annual charge, consisting of interest on the investment, amortization of the project investment in 100 years, and operation and maintenance including major replacements and repairs.

(3) Power benefits must equal or exceed the separable cost for including power in the project.

(4) Comparability Test. The separable hydro-power costs should be less than the costs of the most likely alternative means of providing equivalent service in the absence of the project, evaluated on a basis of taxes, interest, and other financial factors comparable with the determination of the Federal project costs.

(5) Financial feasibility. Insofar as can be determined in advance potential net revenues should be sufficient to repay power costs. Costs allocated to power should be recoverable with interest within a reasonable period. Administratively, the repayment period has been set at 50 years. Thus, estimated revenues must be sufficient to recover, within 50 years, the costs allocated to power plus interest. Power is marketed by others. Information on anticipated revenues is obtained from the power marketing agency. Financial feasibility is reviewed as necessary whenever conditions have changed materially from those under which the previous study of financial feasibility was made. Financial feasibility questions are referred to OCE prior to inclusion in survey reports. (EM 1165-2-109)

b. Benefits. The value of power to the users is measured by the amount that they should be willing to pay for such power. The usual practice is to measure the benefit in terms of the cost of

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achieving the same result by the most likely alternative means that would exist in the absence of the project. In the absence of the economically feasible alternative means, the value of the power to users may be measured by any savings in production costs, increase in value of product that would result from its use, or its net value to consumers. Project power benefits include financing factors related to the alternative source of power, public or private, that would most likely be utilized to serve the same market area in the absence of the project. The alternative source is usually a new, privately financed, modern, and efficient thermal power plant. However, all likely potential alternatives are carefully examined.

(1) Unit power values, (dollars per kilowatt of capacity and mills per kilowatt hour of energy) are obtained from the Federal Energy Regulatory Commission, normally at field level.

(2) Interruptible Power Capacity. Operating experience indicates that the installed capacity in excess of that considered dependable may have a value. This "interruptible" power capacity may be given a value on the order of one-half of the rate for dependable capacity if acceptable to the marketing agency.

15-3. Cost Sharing. In multiple-purpose reservoirs under the jurisdiction of the Corps the cost allocated to power is fully repaid to the Federal Treasury by revenues collected by the marketing agencies. The Chief of Engineers is responsible for determining the costs allocated to the hydroelectric power function except where otherwise required by law. It is Corps policy that all purposes in a multiple-purpose project should share equitably in the benefits of multiple-purpose development and that no purpose should be subsidized by other project purposes to enable sale of services at lower rates. By the interagency agreement of 12 March 1954, the federal agencies, Department of the Interior, Army, and FPC (now FERC) have accepted the Separable Costs-Remaining Benefits (SCRB) method of cost allocation, as a preferred method of distributing project costs. This method permits equitable allocations of project costs to power for use as a basis for establishing power rates. Objectives of the SCRB method are presented in paragraph 5-10. New proposals to Congress recommend a State financing share of 10 percent of the construction cost allocated to power.

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15-4. Coordination with Other Agencies.

a. The Federal Energy Regulatory Commission. The Federal Energy Regulatory Commission (FERC), in carrying out its functions under the Federal Power Act, is concerned with all the elements involved in determining power values. The Corps collaborates with the FERC in evaluating power benefits on the basis of unit power values developed by that agency. The authorizing legislation for several specific projects has given responsibility for allocation of costs to FERC.

b. Others. Federal, State and local agencies which would have an interest in the power function or the possible effect of the contemplated plan, are consulted. Views of interested and affected agencies are considered and covered in Corps reports. Representatives of the marketing agency are consulted.

15-5. Sale of Power. Under the provisions of Section 5 of the Flood Control Act of 1944 (Public Law 534, 78th Congress) and other acts, power developed at multiple-use reservoirs under the jurisdiction of the Chief of Engineers is turned over to the Secretary of Energy for marketing. Law requires that the Secretary shall transmit and dispose of power and energy so as to encourage the most widespread use at the lowest possible rates to consumers, consistent with sound business principles. It also provides that in the sale of power, preference is given to public bodies and cooperatives. Agencies of the Department of Energy which market the power are: The Bonneville Power Administration, Southwestern Power Administration, Southeastern Power Administration, the Western Area Power Administration and the Alaska Power Administration. Rates for sale of power to recover allocated costs are established by the marketing agency of the Department of Energy and approved by the FERC.

15-6. Pumped Storage Power. Possibilities for pumped storage developments are investigated in pre- and post-authorization planning studies for the optimum development of water resources. Where potentials exist, the engineering and economic aspects are reported to a degree consistent with the nature and scope of the report. (EM 1165-2-110)

a. Integral Facilities. Integral facilities (usually a conventional powerhouse with reversible units) are considered in reports and recommended as a part of a Federal project when such facilities are justified and represent the best development of the

site. Adjoining plants (usually detached plants using the reservoir for an afterbay) which are similarly qualified, and the operations would significantly affect to other project operations, may also be included in the recommended plan.

b. Adjoining Plants. Reports also take note of other possible adjoining pumped storage plants which might be developed near a Federal project but which do not appear to require operation as an integral part of the proposed Federal project. They are not included as part of a Federal plan. Non-Federal interests may wish to consider the construction of adjoining plants that could be operated relatively independently of Federal project operations. Such action requires application to the FERC for license under the provisions of the Federal Power Act. The potential effect of such proposals on Federal project operations is considered incidental to processing of license applications. Non-Federal interests may, however, be furnished readily available information concerning such possibilities to facilitate their preparation of applications for licenses. (EM 1165-2-110)

15-7. Partnerships. Although the Corps does give limited assistance in formulating partnership proposals for consideration by Congress, and does report to Congress on economic, financial, and legal aspects, determination as to whether or not to adopt partnership proposals are made by Congress. Under certain circumstances, installation of hydro-electric power facilities at or adjacent to Corps dams may also be authorized by a Federal Energy Regulatory Commission license.

15-8. Provision for Future Power. Under continuing Congressional authorities, penstocks and other facilities adapted to possible future use in the development of power may be installed in any dam when approved by the Secretary of the Army on the recommendation of the Chief of Engineers and the Federal Energy Regulatory Commission. The decision to recommend provisions for future power requires consideration of the additional cost involved, the probability of future installation and other factors concerning the potential and feasibility of the power development and marketability of its output. The investigation should indicate the minimum provisions, if any, required to avoid precluding future development. Field level coordination is undertaken with the Federal Energy Regulatory Commission concerning economic feasibility and with the appropriate Department of Energy marketing agency.

15-9. Control of Releases from Power Plants

a. Effects of Releases. Reservoir releases to provide peak power service may result in a substantial change in the regimen of a stream. In some cases, the change from relatively steady rates of flow to frequent fluctuation may cause undesirable effects. Fluctuation may reduce the benefits from other reservoir functions, such as recreation, pollution abatement, and water supply.

b. Mitigation. Positive means to prevent or reduce adverse effects are considered in planning and project operation phases. Tangible and intangible benefits may be obtained with measures such as: modification in power output; location of a re-regulating reservoir downstream; or acquisition of additional interest in lands.

c. Minimum Releases. Determination of the project power capabilities will involve consideration of rates and volume of minimum releases required for downstream purposes. Consideration of downstream effects will also include requirements for limiting the range and rate of stage and discharge fluctuations. Continued attention is given to the effects of releases downstream and to possibilities for modifications in project operations which will have beneficial results. (EM 1165-2-106)

15-10. National Hydroelectric Power Study. Section 167 of Public Law 94-587 authorized and directed the Secretary of the Army, acting through the Chief of Engineers, to conduct a study of the most efficient methods of utilizing the nation's hydroelectric power resources. The primary objectives of this legislation is to obtain an assessment of the nation's:

Physical potential for increasing hydroelectric capacity, and

Legislative and Administrative policies related to development and operation.

The current authorization is for a 3-year study to be completed in FY 1980. The study is national in scope, covering all 50 states and Puerto Rico, subdivided into study regions corresponding to national electric reliability council regions. The first area of investigation will cover conventional hydroelectric power, small scale, and pumped storage. All authorized and federally constructed projects of the Corps of Engineers and other Federal agencies will be included as well as undeveloped sites not authorized, including the addition of power facilities to existing dams. The study will also include policy and technical considerations for economic, environmental, marketing, technical design, and legislative impacts.

CHAPTER 16

RECREATION

16-1. Basis for Corps Participation.

a. Section 4 of the Flood Control Act of 1944, as amended. This Act authorized the Chief of Engineers "... to construct, maintain, and operate public park and recreational facilities at water resource development projects under the control of the Secretary of the Army, and to permit the construction, maintenance, and operation of such facilities." It also provides that the water areas of all such projects shall be open to public use generally for boating, fishing, and other recreational purposes, and ready access to and exit from such areas along the shores of such projects shall be maintained for general public use when in the public interest.

b. The Federal Water Project Recreation Act of 1965 (P.L. 89-72), as amended. This act established development of the recreational potential at Federal water resources projects as a full project purpose.

(1) Section 2(a) specifies that benefits for recreation should be included in the economics of a contemplated project, provided that non-Federal public entities agree (letter of intent) to participate in the recreation development. All purposes share in the savings from multiple-purpose development.

(2) Section 3(b) provides for inclusion, in recommendations for project authorization, of land acquisition to preserve the recreation potential of the project for a 10-year period, when no local sponsor can be found.

(3) Section 9 limits the cost allocated to recreation and fish and wildlife enhancement (excepting special types) to no more than 50 percent of the sum of the allocations to all project purposes.

(4) The Act further requires beneficiaries to bear part of the costs of installing and all the cost for managing recreation developments at Federal water resources projects. It also sanctions collection of use fees for services by non-Federal agencies administering the recreation resources of federal projects. (ER 1120-2-400; ER 1120-2-404; ER 1130-2-400; ER 1165-2-400)

16-2. Recreation Resources Management Objectives. The objective of Corps recreation resource management activity is to insure continued public enjoyment and maximum sustained use of lands, waters, forest and associated recreational resources, consistent with their designated resource use as approved in the Master Plan. These actions emphasize the need for preserving and enhancing the quality of the outdoor recreational potential created by water resources projects for the benefit of present and future generations. (ER 1120-2-400; ER 1130-2-400; ER 1165-2-400)

16-3. Development of Outdoor Recreation Facilities. Outdoor recreational facilities are provided at Corps reservoir projects and at certain ~~non-reservoir~~ projects subject to requirements of local cooperation. In formulating water resource plans, consideration is given to alternative scales of recreation development ranging from the minimum facilities to optimum development. In the absence of satisfactory local agreement, Federal provision of facilities at reservoirs is limited to the minimum needed for public health and safety. Generally, this does not exceed provision of a turnaround, guardrails, barriers, and minimum sanitary facilities at existing road ends. No facilities are provided at non-reservoir projects or at flood control impoundments creating incidental minor pools in the absence of local participation. Recommendations for recreation development do not exceed the scale for which a qualified sponsor will furnish a written Letter of Intent of participation. (ER 1120-2-404)

a. Development at Local Flood Control Projects. Recreation facilities at structural local flood control projects comply with the following policies.

(1) Recreation developments will be provided within the lands acquired by local interests for the basic flood control project, except as may be required for access, parking, potable water, sanitation and related developments for health, safety and public access.

(2) Recreation will not influence formulation of the project which must attain a benefit/cost ratio greater than unity without recreation.

(3) The level of recreation development will not increase the Federal project cost by more than 10 percent without approval of the Secretary of the Army prior to issuance of the District Engineers report.

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(4) Facilities normally provided by private enterprise should not be included for Federal cost sharing. Such facilities include: boats, motors and attendant storages and repair facilities; mechanical boat launching devices; supply stores, restaurants and snack bars; bait and tackle shops; oil and gasoline dispensing and storage facilities; motels; hotels; cabins; bicycles and attendant storage and repair facilities; horses, riding stables and corrals; boat docks, piers, and similar facilities for long-term berthing or mooring of pleasure boats (except courtesy docks provided in conjunction with public launching ramps); administrative buildings, operations personnel residences, visitor centers (other than information kiosks, amphitheaters, stadiums, shower buildings and exhibit halls; decorative fountains and statuary; decorative lakes or ponds for recreation or aesthetic reasons only; elaborate playground equipment such as spray pads, wood and stone replicas of forts, castles, etc; decorative promenades or boardwalks; bleachers and dugouts; and courts.

b. Development at Other Non-Reservoir Projects. ~~Provision of outdoor recreation facilities at non-reservoir projects will not normally influence formulation of basic project scope or design; hence the recreation purpose and costs are considered incremental.~~ Other non-reservoir projects include; breakwaters and jetties; hurricane flood barriers; inland waterways not classified as reservoirs; and oxbow lakes created by Corps projects. Policy on small boat harbors is outlined in Chapter 11.

c. Beach Erosion Control and Shore Protection Projects. Beach erosion law (33 USC 426) limits Federal participation in beach erosion control projects to a part of the construction costs of restoration and protection of shores and beaches, based on public ownership and use of the shore frontage. For these projects, other recreation developments are entirely non-Federal responsibilities except on Federally-owned shores. (ER 1165-2-130)

d. Facilities at Completed Projects. Funds are appropriated for recreation development under a program known as Code 710, (budget code). At completed projects, Code 710 funds are used for construction of recreation facilities. The Corps has sufficient authority to acquire additional lands for recreational development. When lands are provided by local interests the value of those lands may be credited towards the local cost of the facilities. Administration policy regarding expenditures of Code 710 funds requires that a non-Federal public agency enter into a contract with the Corps and agree to pay for not less than 50% of the cost of development and assume operations and maintenance responsibility for the recreation area. Upgrading sanitary facilities to meet Federal and State health standards may be undertaken at 100% Federal cost where existing recreation areas are managed directly by the Corps.

e. Plan for Future Recreation Facilities. In general, each primary or major recreation area is initially developed to a level of two-thirds of its expected ultimate potential. Plans are maintained and updated showing facilities planned for future development to meet the ultimate project recreation potential, to achieve maximum consistency with authorized plans, and to insure that planned future development is fully responsive to current recreation and resource management policies. Lands designated for future recreation development may be utilized for appropriate interim uses until needed. (ER 1120-2-400; ER 1165-2-400)

16-4. Recreation Use Projection and Benefit Evaluation. (See para 5-8 regarding the use of the WRC planning manual.).

a. Projections. Projected recreation attendance at proposed projects is based upon attendance at similar completed projects and projections of population growth and resource carrying capacity. (ER 1120-2-403)

b. Benefit Evaluation. Recreation benefits are based on implied willingness to pay. The values are net of induced costs to both users and others. A single unit value is assigned per recreation day regardless of whether the user engages in one activity or several. The unit value, however, may reflect both the quality of activity and the degree to which opportunities to engage in a number of activities are provided. For projects authorized subsequent to 24 October 1973, recreation unit day values may range from 75¢ to \$2.25 for general recreation usually associated with Civil Works projects. This includes activities such as swimming, picnicking, hiking, bicycling, skiing, boating, and most warm water fishing. Certain specialized activities may be valued between \$3.00 and \$9.00 per recreation day. Examples of these specialized activities include big game hunting, white water canoeing, specialized nature photography, wilderness pack trips and similar activities for which opportunities are limited, intensity of use is low, or participation may involve a large personal expense by the user. Recreation unit values for projects authorized prior to 25 October 1973, will continue to be those established in supplement No. 1 to Senate Document 97. These values are 50¢ to \$1.50 for usual recreation and \$2.00 to \$6.00 for specialized activities. When project evaluations are updated, using the current discount rate, present day recreation values are used.

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c. Recreation Use of Coastal Beaches. Measures for control or prevention of beach erosion can produce tangible primary benefits from increased recreational usage. Recreational benefits accruing to individuals as a result of their visits to a beach are similar in nature to benefits obtained by individuals from other forms of

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outdoor recreation, such as those involving active participation as pool swimming golfing and tennis. Estimated beach use is based on the population of the areas considered tributary to the beach and the prospective changes in population within the project economic life and the beach carrying capacity. Where there are significant seasonal changes in population, the summer-population is used as a basis rather than the year-round population. (EM 1120-2-108)

(1) Beach Development Categories. These benefit evaluation categories are (a) a privately owned shore open to the public; (b) a publicly owned beach in an undeveloped or incompletely developed area; and (c) a publicly owned beach, fully developed. An average value of 40¢ per visit may be considered appropriate for (a); 80¢ per visit for (b), and \$1.20 for (c)

(2) Beach Area Per Bather. A dry beach area of at least 75 square feet per bather at time of peak use has been established as needed to attain optimum benefit from a beach visit. Beach area measured above the mean highwater (or m.h.h.w.) on the oceans and the Gulf or Mexico, and above the mean seasonal high water on the Great Lakes.

16-5. Cost Participation. Non-Federal participation is required in the development and administration of recreation opportunities provided at Corps projects. P.L. 89-72 defines the basis for sharing of financial responsibilities in joint Federal - non-Federal development, enhancement, and management of recreation and fish and wildlife resources of Federal multipurpose water projects. In addition to the cost sharing shown below, new proposals to Congress recommend a State financing share of five percent of the construction cost allocated to recreation. (ER 1120-2-404; ER 1165-2-400; and ER 1105-2-129)

a. Exemptions. Section 6(e) of P.L. 89-72 states that cost sharing and reimbursement provisions of that Act shall not apply to non-reservoir local flood control projects, beach erosion-control projects, small boat harbor projects or hurricane protection projects or to projects appropriate for Federal administration. For these, the specific cost sharing provisions which existed prior to enactment of P.L. 89-72 apply.

b. Cost Allocation. Recreation costs for multiple-purpose reservoirs, including reservoirs created by navigation improvements, are allocated by using the Separable Costs-Remaining Benefits (SCRB) method. Costs allocated to recreation at non-reservoir projects are confined to the specific incremental costs of the added lands and facilities. However, if inclusion of recreation clearly affects project formulation, the SCRБ method is to be used.

c. Cost Apportionment.

(1) Reservoirs. The Federal government assumes joint costs allocated to recreation and not more than one-half of the separable first costs of construction of recreation facilities, including one-half of the cost of any project lands acquired specifically for recreation, except as noted in the paragraph below. The non-Federal entity must assume: a) at least one-half of the separable first cost of post-authorization planning and construction of recreation facilities, including projects land acquired specifically for recreation, access and basic site preparation; and b) all costs and full responsibility for the operation maintenance, replacement, and management of recreation lands and facilities. (ER 1120-2-404)

(2) Acquisition of Lands for Recreation Development at Reservoirs. During construction separable lands may be acquired, if specifically authorized, at Federal expense to preserve recreation potential created by the project. This procedure is used only when a formal agreement regarding non-Federal participation cannot be obtained prior to initiation of project construction. If these lands are subsequently developed pursuant to subsequent agreements they will be cost shared as above. If lands so acquired are not developed within 10 years, they may be declared surplus or used for any authorized purpose. (ER 1120-2-404)

(3) Non-Reservoir Projects. Reports proposing recreation facilities in accordance with paragraphs 16-3a and 16-3b recommend that the non-Federal entity provide fee title to all additional lands required for development and control of the recreation areas. Where the appraised value of those lands provided amounts to less than 50 percent of the total first cost of the recreation development, the non-Federal sponsor must make additional contributions sufficient to bring the non-Federal share to at least that level. This additional contribution may consist of the actual cost of carrying out an agreed-upon portion of the development, or a cash contribution at the time of construction or a combination of both. The entity must operate, maintain, and replace without expense to the Federal Government the recreational areas and all installed facilities. (ER 1120-2-404)

(4) Revenue Producing Facilities. There is no apportionment to the Federal Government for revenue producing facilities such as golf courses, pools, riding stables, and marinas. (ER 1120-2-400; ER 1120-2-404)

d. Payment. Non-Federal interests may furnish their share of separable recreation costs at reservoirs, by cash payment during construction; provision of lands or facilities; by long-term payment with interest; or a combination of these.

e. Use Fees. Public Law 90-483 supplemented by Public Law 92-347, amended by Public Law 93-81, further amended by Public Law 93-303 provides that fair and equitable fees will be assessed the users of specialized sites, facilities, equipment of services provided at substantial Federal expense. Entrance or admission fees are not charged at Corps projects. Use fees shall be comparable with fees charged by other Federal and non-Federal agencies for similar facilities or services. Fee revenues collected at Corps projects are credited to the Corps in a special account in the Treasury of the United States for use in authorized recreation activities. All persons 62 years of age or older, bearing a Golden Age Passport receive a 50% reduction in the normal use fee at Corps projects. Golden Age Passports are issued at no charge and are valid during the lifetime of the bearer. Facilities provided at Corps projects are to be open to all on equal terms and require uniform fee schedule to all users. (ER 1130-2-404)

16-6. Special Recreation Facility Considerations.

a. Commerical Concessions. Concessions are planned where warranted. Development is accomplished through lease arrangement with non-Federal interests.

b. Trails.

(1) Project planning shall consider the incorporation of trails for nature study, hiking, self-propelled bicycle, horseback riding, snowshoe, cross-country ski, and access by fisherman and hunters. When practicable, such trails are located to tie into existing hiking trails and metropolitan bicycle trails. (EM 1110-2-400; ER 1120-2-400) Also see "National Trails System" in Chapter 24.

(2) Trails For Use by Off-Road Vehicles. Executive Order 11644, "Use of Off-Road Vehicles on the Public Lands", dated 8 February 1972 as amended by Executive Order 11189, dated 24 May 1979

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established policies and provides for procedures to ensure that the use of off-road vehicles on public land are controlled to protect the resources, promote safety of all users, and minimize conflicts among the various uses. Where a demand exists, consideration is given to providing separate specific trails for snowmobiles, trail bikes, and similar motorized vehicles. Such trails are located to minimize damage to soil, watershed, vegetation, or other resources of the public lands, to minimize harassment of wildlife or significant disruption of wildlife habitats, and to minimize conflicts with other existing or proposed recreation uses. Full public participation is sought through public meetings in the process of designation of areas or trails for off-road vehicles. (ER 1130-2-405)

CHAPTER 17

WATER SUPPLY AND QUALITY MANAGEMENT

17-1. Federal Interest. Water supply and quality management seek to insure a continuing supply of fresh water, adequate in quantity and quality for urban and rural withdrawal and streamflow needs. National policy, defined by Congress, has been developed over a number of years and is still being clarified and extended by legislation. This policy recognizes a significant Federal interest in the long range management of supplies, but generally assigns the financial burden of supply to users.

17-2. Water Supply.

a. Water Supply Storage. Municipal and industrial (M&I) water supply is considered the primary responsibility of the municipalities or other non-Federal entities. However, M&I storage space may be recommended for inclusion in any Corps reservoir pursuant to the Water Supply Act of 1958 (P.L. 500, 85th Congress, Title III), as amended. If such storage space is economically justified and represents the least cost alternative, it may be added to any project at any time. However, modification of existing projects for this purpose which would seriously affect the project, its other purposes, or its operation, requires Congressional authorization. Such storage capacity, under present policy, may be reserved exclusively for water supply or may be provided by joint use of seasonal flood control or other storage. Costs allocated to water supply for future use may not ordinarily exceed 30 percent of the total project construction costs. A contract prior to construction is required for all costs allocated to present use and for future water supply in excess of 30 percent of total project costs. The allocated costs must be reimbursed by the water users within the life of the project but not to exceed 50 years after initial use. An interest-free development period, until supply is first used (up to ten years) is permitted under the law. Federal interest rates are as defined in the 1958 Act. New proposals to Congress recommend a State financing share of 10 percent of the Construction cost allocated to water supply. New proposals to Congress recommend a State financing share of 10 percent of the construction cost allocated to water supply. (EM 1165-2-105)

b. Permanent Rights to Storage. Under the authority of Public Law 88-140, local interests acquire a permanent right to the use of storage for which they have completed payments under an agreement with the Government, as long as the space is physically available, taking into account equitable reallocations as necessitated by

sedimentation. They must also agree to continue to pay their share of annual operation and maintenance costs allocated to the water supply storage, together with their share of the costs allocated to any necessary reconstruction, rehabilitation, or replacement of any features which may be required to operate the project. Storage space for raw water is provided. The Government makes no representation with respect to the quality of water and assumes no responsibility therefor, or for the treatment of the water.

c. Modification of Completed Projects. Reallocation of reservoir storage that would have a significant effect on other authorized purposes or that would involve major structural or operational changes requires Congressional approval. Providing the above criteria are not violated, 15 percentum of total storage capacity allocated to all authorized Federal purposes or 50,000 acre feet, which ever is less, may be allocated from the storage serving authorized purposes to storage serving municipal or industrial water supply within the Chief of Engineers discretionary authority. The cost for such storage will be established as the higher of either benefits or revenues foregone, or the cost of storage in the Federal project. The cost of storage is determined by computing costs, at the time of construction, by the Use of Facilities cost allocation and then updating such costs to present day price levels by use of the Engineering News Record Construction Index. (EM 1165-2-105)

d. Water Withdrawal. When neither storage is provided under the authority of the Water Supply Act of 1958 nor surplus water under the authority of Section 6 of the Flood Control Act of 1944 is used, reimbursement for services provided or privileges granted in connection with domestic, municipal, and industrial water supply from a Corps project shall be obtained pursuant to Section 501 of the Independent Offices Appropriation Act of 1952 (31 U.S.C. 483a). Charges for water withdrawn shall be based on the most appropriate of either services rendered (not to be less than project revenues foregone as a result of withdrawal of water); a standard minimum charge; or a standard unit charge. (EM 1165-2-105)

e. Ground Water Supplies. Several multi-purpose projects have included specific authority for the purpose of water spreading or the replenishment of ground water supplies. Water impounded in controlling floods is diverted and spread over the ground water aquifer to be replenished. Diversion and replenishment are accomplished by local interest. Ground water supplies are valid alternatives to storage in reservoirs, but have not, to date, been recommended or authorized for inclusion in basin plans on the same basis as storage.

17-3. Water Quality Control.

a. Water Quality Standards. The Federal Water Pollution Control Act of 1948 (P.L. 845, 80th Congress), as amended in 1956, 1961, 1965 and 1970 (P.L. 91-224), established the basic tenet of uniform State standards for water quality. P.L. 92-500, the Federal Water Pollution Control Act Amendments of 1972, strongly affirms the Federal interest in this area. "The objective of this act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." While the act is to be administered by the EPA, the primary responsibility for its implementation, including the provision of adequate water quality standards, is to remain with individual States. However, State standards must meet EPA established guidelines, and are subject to EPA approval or revision. PL 92-500 was amended by the Clean Water Act of 1977 (PL 95-217) to provide additional authorization necessary to restore the integrity of the Nations waters.

b. Stream Flow Regulation. Reservoir capacity for streamflow regulation to improve water quality may be recommended pursuant to the Federal Water Pollution Control Act (Sec. 102(b)(1) of P.L. 92-500). The need, value and impact of, storage for water quality control is determined by the Administrator of EPA. His views on these matters are set forth in any report or presentation to Congress proposing authorization or construction of any reservoir including such storage. The need for and the value of storage for regulation of streamflow (other than for water quality), including but not limited to navigation, salt water intrusion, recreation, esthetics, and fish and wildlife, is determined by the Corps of Engineers. Storage and water releases for regulation of streamflow shall not be provided as a substitute for adequate treatment or other methods of controlling waste at the source. The value of such storage shall be taken into account in determining the economic value of the entire project of which it is a part, and costs shall be allocated to the purpose of regulation of streamflow in a manner which will insure that all project purposes share equitably in the benefits of multiple-purpose construction. Costs of regulation of streamflow features incorporated in any Federal reservoir or other impoundment shall be determined and the beneficiaries identified. If the benefits are widespread or national in scope, the cost of such features shall be nonreimbursable. New project proposals to Congress recommend a State financing contribution of five percent of the construction costs allocated to streamflow regulation. States or other qualified sponsors are normally required to furnish assurances that they will protect low flow releases for water quality purposes against withdrawals or diversions to other uses and that local wastewater discharges into the stream will be adequately

treated. If the Administrator EPA determines that storage for regulation of streamflow to maintain water quality is not needed in an authorized project, or is needed in a different amount, Section 65 of Pub Law 93-251 permits project modification to use that storage for other authorized purposes. Section 65 sets forth a reporting procedure and is applicable only to those projects authorized as of 7 March 1974, but not yet under construction.

c. EPA Determinations Regarding Water Quality Control Storage. Corps requests to EPA regional offices for determinations pursuant to Sec 102(b) (3) of Pub. Law 92-500 regarding water quality control storage in projects are made for; (1) those authorized projects for which funds to initiate construction or land acquisition had not been appropriated prior to passage of Public Law 92-500 (18 Oct 1972) and (2) projects which include reservoir storage for water quality recommended by the Corps for authorization after that date.

17-4. Water Conveyance Facilities.

a. Natural Streams. Natural streams are frequently used to convey water from an impoundment to downstream users. Such a conveyance system is basically a non-Federal responsibility. However, local interests should be advised in the study phase of any problems which may be anticipated and of non-Federal legislation which may be required to protect the users.

b. Conveyance System Construction. No general authority exists to construct or finance construction of conveyance systems for water supply only. In exceptional cases, where the conveyance systems would be multiple-purpose, e.g., for water supply and water quality, the Corps has proposed and been authorized to construct such facilities and also to permit repayment in accordance with the provisions for repayment of water supply storage costs. If in the course of investigating multi-purpose projects to include storage for water supply, should the investigation show that conveyance structures for use by non-Federal interests are necessary to the existence of the project but that the costs of such facilities are of such financial magnitude that state or municipal funding programs cannot finance them, such may be included in the survey report, with the cost thereof, and presented to Congress. Survey reports, including such features must include the justification as to the necessity for their installation with Government funds, to be repaid under the terms of the Water Supply Act of 1958. If Congress adopts the reports as law, the costs thereof could be financed pursuant to the provisions of the Water Supply Act. The Corps only general

authority in this area was contained in Section 101 of P.L. 89-298. This section, entitled "Northeastern United States Water Supply" (NEWS) authorized the Corps to cooperate with Federal, State, and local agencies in preparing plans to meet the long-range water needs of the northeastern United States. The Corps is authorized to construct, operate and maintain those reservoirs, conveyance facilities and purification facilities which are recommended in the plan provided they are specifically authorized by law.

c. Water Supply for Metropolitan Area, Washington, D. C. The responsibility of providing an adequate water supply from the Potomac River through the Washington Aqueduct system for part of the Washington, D. C. area, Arlington County, and Falls Church, Virginia is vested in the Chief of Engineers. In accordance with this authority, the Corps is responsible for the collection and purification systems which include diversion dams, conduits, reservoirs, filtration plants and pumping stations. The distribution of water to the public is the responsibility of the District of Columbia, Arlington County, and Falls Church, Virginia. Section 85 of the Water Resources Development Act of 1974 (P.L. 93-251) as amended by Section 181 of the Water Resources Development Act of 1976 (P.L. 94-587) includes authorization of a study of the future water resources needs of the Washington metropolitan area.

17-5. Water Conservation.

a. Introduction and Definition. The President in his 6 June 1978 water policy reform message, announced a broad set of policy initiatives that concentrate on four key problem areas. One of these policy initiatives was to provide a new national emphasis on water conservation. To further define these policy initiatives, the President, on 13 July 1978, issued additional directives to Federal agencies instructing them to begin implementation efforts. Water conservation is an objective worthy of emphasis as a national priority as new supplies often place demands on other scarce resources which are not adequately reflected in the evaluation of and pricing for water. The term "water conservation" has been determined to be a demand management function and is defined by the Corps to be "any beneficial reduction in water use or in water losses.": Based on this definition, water management practices constitute conservation only when their purpose is to conserve a given supply of water through reduction in water use (or water losses) and their total national economic and environmental benefits outweigh their total national economic and environmental costs.

b. Role of Water Conservation. The national emphasis on water conservation can be separated into two major categories with respect to the Corps water resources program. Sound conservation principles must be applied in the Corps own use of water and conservation must be made an integral part of planning to satisfy future water supply needs. This second category translates primarily into an assistance role to the State and local governments as a part of studies addressing the adequacy of existing supplies and the need for additions to those supplies. Specifically, the President has directed that development of water conservation programs will be a condition of contracts for storage or delivery of municipal and industrial water supply from Federal projects.

17-6. Irrigation.

a. Storage. Storage of water for irrigation on agricultural lands, whether to meet the entire needs or to supplement natural supplies, may be provided. Section 8 of the Flood Control Act of 1944 provides that Corps reservoirs may include the irrigation purpose upon the recommendation of the Secretary of the Interior in conformity with Reclamation Law. Section 8 also provides that the Secretary of the Interior may provide needed irrigation works to make use of irrigation storage. The Chief of Engineers considers that Section 8 applies only in the 17 western states to which the Reclamation Law applies.

b. Cost Sharing. The Corps of Engineers considers that, outside of the 17 western states, a non-Federal public entity should be required to assume one-half of the costs of reservoir capacity allocated to irrigation. This policy is analogous to the established Corps policy for reclamation by drainage. It is identical to the position adopted by the Department of Agriculture for reservoir capacity allocable to irrigation. However, the total costs of storage allocated to provisions for future irrigation and municipal water supply combined should not exceed the 30 percent of total reservoir costs stipulated in the Water Supply Act of 1958. The non-Federal entity requesting irrigation capacity as a project purpose should provide a firm expression of intent to use and pay for such storage, should obtain necessary water rights, or their equivalent, from the State, and possess legal power to contract with the Federal Government. Non-Federal interests are required to assume responsibility for 100 percent of the O&M costs allocated to irrigation. In addition, new proposals to Congress recommend a State financing contribution of 10 percent of the construction cost allocated to irrigation.

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c. Basin Account. Basin accounting may not be used to group all benefits in a basin-wide plan to show apparent justification for including unsound elements in the plan. The difference between this procedure and systems analysis where certain elements are technically and economically essential to a viable system should be noted.

17-7. Salinity Control.

a. Return Flow From Irrigation. Return flows from irrigation works create chloride and other salt problems in the receiving waters. Such flows may result from a deliberate action to maintain soil quality or from inefficient irrigation practices. The Corps does not have a program to control or eliminate return flows into streams from irrigation works.

b. Natural Salts. Studies to control natural salts in rivers and streams are underway in the Arkansas-Red Chloride Control Project. The extent of Federal financial participation in projects of this type has not been established.

c. Salinity Intrusion. Measures used to hold back salt water wedges in the Nation's estuaries include upstream fresh water releases or instream estuary structures. An example of the structural approach is the Wallisville project, Trinity River, Texas, used for both navigation and salinity control. Costs are allocated to project purposes by the Separable Costs-Remaining Benefits method and are shared equally for the salinity control component. For the Calcasieu River Salt Water Barrier Project, Louisiana, cost to mitigate salinity damages caused by the navigation project were 100 percent Federal.

17-8. Water Rights Involved in Project Development

a. Definitions. Water rights are a form of real property, protected by State and Federal laws. Depending on the legal system used in the locale, water rights may originate in ownership of riparian lands or be acquired by statutorily-recognized methods of appropriation. Riparian lands are those which immediately adjoin a river. Riparian water rights are the right to use, on that land, an amount of water considered "reasonable": that amount which allows maximum use by a riparian landowner without unreasonably impairing other riparian owners. Appropriation systems, predominant in the Western states, permit use of a carefully designated amount of water, regardless of land ownership or place of use. Allocations

among users are made by temporal priority. Differences between the two basic systems, however, are being overshadowed by State permit systems which require all water users to obtain finite determinations of their water rights. Problems of water quality are increasingly controlled by statutory law.

b. Effects on Projects. States have wide powers to legislate the use of property within their borders, except these powers are restricted by several paramount Federal powers granted under the Constitution. Civil Works water resource projects are built under Congressional authorization and usually are not subject to concurrent authorization by State agencies. In particular cases, such as those involving inter-basin transfers, interstate compacts, or Supreme Court allocations, projects must be designed to recognize water rights claimed by the residents of an affected state. Congress has also established policies which protect and recognize certain State-created rights, such as Section 1 of the Flood Control Act of 1944, which subordinates use of water for navigation purposes to beneficial consumptive uses of the streams in the Western states. Water rights may also be affected by authorized projects in which Congress has made a quantified allocation of waters between the involved states.

c. Effects of Regulated Flows. Water resource projects, by their very nature, often have significant effect on the quantity and timing of flows in a river system. Whether such actions constitute an injury to private water or other property rights for which the Federal Government or a project sponsor must pay compensation depends on the degree of interference, the navigability of the stream, and other related factors. Careful consideration is given to the existence of lawful water uses in the downstream areas. Encroachment on those uses is avoided as much as possible.

d. Acquisition of Water Rights. Downstream waters made available by a project are subject to allocation under state laws. The parties desiring to use the waters impounded by a reservoir must acquire the necessary water rights under the provisions of state laws, and regulations, and resolve conflicts among users at the local or state level. The Corps provides flow regulation service or storage space within the reservoir to water users as authorized and is not involved in adequacy or timing of the acquisition of water rights.

e. Legal Sources. United States v. Cress, 243 U.S. 316(1917); United States v. Kansas City Life Ins. Co. 339 U.S.799 (1950); Wyoming v. Colorado, 353 U.S. 953(1957); Arizona v. California, 373 U.S. 546(1963); Turner v. Kings River Conser. Dist. 360 F. 2d 184(9th Cir. 1966).

17-9. Emergencies.

a. Water Supply. P.L. 84-99 as amended by Section 82(2) of P.L. 93-251 provides the Chief of Engineers with discretionary authority to provide emergency supplies of clean drinking water, on such terms as he determines to be advisable, to any locality which he finds is confronted with a source of contaminated drinking water causing or likely to cause a substantial threat to the public health and welfare of the inhabitants of the locality. Work under this authority requires a request from the Governor of the state where the source of water has become contaminated. Loss of water source or supply is not correctable under this authority. In addition P.L. 95-51 further amended P.L. 84-99 to provided the Chief of Engineers authority to provide emergency water supplies to human and livestock inhabitants of areas which he determines to be drought distressed. (ER 500-1-1)

b. Water Quality. Emergency or unusual conditions have developed in past years on rivers and waterways as a result of accidental spills of pollutants and extreme, short-term low flows. The Corps has adequate authority under existing laws to regulate projects in the public interest under emergency conditions, with one possible exception. In very rare instances, contracted water supply might be the only water in storage available for immediate release. In those instances it is necessary to obtain the cooperation of the water supply owner to make releases. Approval of OCE is required to deviate from the approved water control plans.

CHAPTER 18

FISH AND WILDLIFE

18-1. Fish and Wildlife Coordination Act of 1958 (P.L. 85-624). This Act amended the Act of March 10, 1934, to provide that fish and wildlife conservation shall receive equal consideration with other project purposes and be coordinated with other features of water resource development programs. Adverse effects on fish and wildlife resources and opportunities for improvement of those resources shall be examined along with other purposes which might be served by water resource development. The Corps may recommend project modifications and acquisition of lands for fish and wildlife conservation purposes. Section 2(a) of the Act defines the area of interest to include impoundment, diversion, channel deepening, or any modification of a stream or other body of water. All pre-authorization and post-authorization planning or project development, without exception, shall be coordinated with the Fish and Wildlife Service of Department of the Interior; National Marine Fisheries Service of the Department of Commerce as appropriate, and the agency administering the fish and wildlife resources of the State wherein construction is contemplated.

18-2. Mitigation. Damages to fish and wildlife resources will be prevented to the extent practicable through good planning and design. Measures to offset unavoidable damages to fish and wildlife will be included in projects when the cost of measures for this purpose are justified by the monetary or non-monetary effects attributable thereto. Such measures are in-kind whenever possible and are provided adjacent to or as near as practicable to the area where the damages occur. Mitigation plans contain the most efficient and least costly measures to reduce significant resource losses. Developing such plans requires that consideration be given to the use of generally known and accepted wildlife management techniques to reduce the amount of lands taken out of private ownership. Acquisition of an interest in lands or waters for mitigation of damages to fish and wildlife resources requires specific congressional authorization.

a. Justification. A separate benefit cost ratio for mitigation should not be computed, nor should economics be used as the only basis for justification of mitigation. However, dollar values (NED benefits) associated with user days generated by a mitigation plan, as well as user days lost because of project construction, are

proper factors to consider, along with non-monetary (EQ, SWB) values, when selecting and determining justification of mitigation plans. Non-monetary values should consider the scarcity of the affected resource on both a regional and national level and the need to maintain the integrity and viability of significant natural resources rather than considering all resource losses inherently equal.

b. Implementation. It is the policy of the Corps of Engineers to implement mitigation measures concurrently with other project features. Funds for implementation of such measures are budgeted proportionately to funds for other project elements. Since implementation of this policy requires that the Corps maintain the ability to condemn lands, reports proposing land acquisition for mitigation should not contain recommendations that would preclude the Corps from exercising the power of eminent domain.

c. Operation and maintenance. Responsibility for operation and maintenance of mitigation features is defined in authorizing legislation. Mitigation features should be operated and maintained by the agency that can most efficiently do the job. Reports proposing the authorization of mitigation measures should identify the agency responsible for subsequent operation and maintenance. Responsibility for funding operation and maintenance rests with the agency responsible for those activities. Authorization reports should not propose that the Corps budget funds for transfer to other agencies for O&M activities. On 18 May 1979, the Department of Interior published proposed rules for implementation of the Fish and Wildlife Coordination Act (44 FR 29300-29359). Those rules provide that the construction agency will budget necessary O&M funds. If such a requirement is included in the final rules, when published, the Corps will make such recommendations to Congress for authorization.

d. Review of Completed Projects. It is the general policy of the Corps of Engineers to review completed projects for additional mitigation measures only in response to Congressional authorization or other legal requirements.

18-3. Enhancement. Improvements for fish and wildlife enhancement shall be included in a project when the expected benefits, monetary or non-monetary, exceed the cost of bringing them into existence and cannot be provided more economically by other means. Acquisition of land for enhancement of the fish and wildlife resources requires specific legislative authorization.

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18-4. Cost-sharing. Unless it is part of an authorized Federal program for enhancement of anadromous fish, separable first costs for enhancement of sport fish, wildlife and wildlife resources are cost-shared on a 75%-25% basis with non-Federal interests. Non-Federal interests assume all costs for operation, maintenance and replacements as set forth in P.L. 89-72, as amended. The terms "wildlife resources" include birds, fishes, mammals and other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent. Separable first costs of recreation development are cost shared on a 50-50 basis. Only the separable first costs of land acquisition and associated developments to enhance the production of sport fish and wildlife resources will be shared 75 percent Federal and 25 percent non-Federal. The separable first costs of land acquisition to provide for public access, and to promote utilization of wildlife resources, are expenditures made in the interest of enhancing opportunities for public outdoor recreation and as such will continue to be shared 50 percent Federal and 50 percent non-Federal. Separable first costs for commercial fish enhancement (except anadromous fish) are borne by the Federal Government, provided that all costs for operation, maintenance and replacement are assumed by a non-Federal interest or a Federal fishery agency. Justified measures to mitigate any project-caused damage to the fish and wildlife resources are joint costs and are included in the costs allocated to all the purposes of the project for appropriate sharing in accordance with the cost-sharing policies for those purposes. For projects where local interests are required to provide lands, easements and rights-of-way, mitigation measures are shared in the same ratio as the purposes causing the damage. These include first cost and operation, maintenance and replacement, costs on an annualized basis. Fish and wildlife enhancement facilities provided through the Code 710 program require 50-50 cost sharing in accordance with the requirements of that program. In accordance with the President's cost sharing policy proposed projects including fish and wildlife enhancement features require a State contribution of 5% of the construction cost allocated to that purpose. No State contribution is required to add mitigation to projects not authorized in accordance with the President's cost sharing policy. However, when new projects are proposed the costs of mitigation measures are included in determining the required State contribution. (ER 1105-2-129, ER 1120-2-400, ER 1120-2-404).

18-5. Endangered Species - Consultation. The Endangered Species Act of 1973 (PL 93-205), as amended requires all Federal departments and agencies to conserve, in consultation and with the assistance of the Secretary of the Interior, endangered and threatened species.

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This requirement applies to all Civil Works studies, projects or programs and includes the operation and management of completed projects. Section 3 of the 1978 Amendments (PL 95-632) requires the consultation to be completed within 90 days following the date it was initiated unless the Corps - FWS/NMFS agree to an extension. Unless previously completed and reported in the project EIS, a biological assessment must be made to identify any endangered species that FWS/NMFS advises may be affected by the project. After initiation of consultation, no irreversible or irretrievable commitment of resources can be made that is determined to jeopardize the continued existence of any endangered or threatened species or critical habitat.

CHAPTER 19

WETLANDS CONSERVATION

19-1. General. Wetlands are important natural resources that contribute significant benefits to both the natural and human environment. Executive Order 11990 recognizes the significant values provided by wetlands and requires each agency to provide leadership and take action to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

19-2. Definition. Wetlands are areas that are inundated or saturated by surface or ground water of a frequency and duration sufficient to support, and that under normal circumstances to support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

19-3. Policy. The unnecessary alteration or destruction of important wetlands is discouraged as contrary to the public interest. Wetlands considered to perform functions important to the public interest include:

- a. Wetlands which serve important natural biological functions, including food chain production, general habitat, and nesting, spawning, rearing, and resting sites for aquatic or land species;
- b. Wetlands set aside for study of the aquatic environment or as sanctuaries or refuges;
- c. Wetlands the destruction or alteration of which would affect detrimentally natural drainage characteristics, sedimentation patterns, salinity distribution, flushing characteristics, current patterns, or other environmental characteristics;
- d. Wetlands which are significant in shielding other areas from wave action, erosion, or storm damage. Such wetlands are often associated with barrier beaches, islands, reefs and bars;
- e. Wetlands which serve as valuable storage areas for storm and flood waters;

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f. Wetlands which are prime natural recharge areas. Prime recharge areas are locations where surface and ground water are directly interconnected; and

g. Wetlands which through natural water filtration processes serve to purify water.

19-4. Executive Order 11990. In accordance with EO 11990 and the above wetlands policy the Corps avoids undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative, and the proposed action includes all practicable measures to minimize harm to the wetlands. In making this finding economic, environmental and other pertinent factors are considered.

19-5. Section 150 of the Water Resources Development Act of 1976. This Section authorized the Secretary of the Army, acting through the Chief of Engineers to plan and establish wetlands areas as part of water resources development projects. Field elements should use their current knowledge in coordination with all affected interests to implement this section where appropriate in accordance with the following.

a. Wetlands created must be primarily the result of dredged material.

b. All costs of establishing wetlands in this manner including easements and rights of ways, should be borne by the United States as additional project costs, and will normally be established on lands already in public ownership or subject to navigational servitude.

c. No more than \$400,000 in additional project costs will be incurred for project construction or maintenance dredging cycle. The Federal cost limitations established by Section 201 of the 1965 Flood Control Act, as amended or continuing authority projects will include this additional cost.

d. The benefits of establishing the wetland will be considered equal to the cost, up to \$400,000.

e. There should be reasonable evidence that wetland areas to be established will not be substantially altered or destroyed by natural or man-made causes.

CHAPTER 20

AQUATIC PLANT CONTROL

20-1. Aquatic Plant Control Program. Section 302 of the River and Harbor Act of 1965 (P.L. 89-298), as amended, authorized the Corps of Engineers to cooperate with other Federal and non-Federal agencies in comprehensive programs for control and eradication of obnoxious plants. Non-Federal interests must agree to hold and save the United States free from damages resulting from control operations and to finance 30 percent of the cost. The Federal Government may finance the research and planning cost of the program. Funds are allocated on a priority basis and there is a \$5,000,000 annual limitation on Corps expenditures for the total program. Funds appropriated are applied to three general categories: Planning, Control Operations and Applied Research. (ER 1130-2-412)

a. Planning. Studies are Federally funded. Reports are of survey report scope and have a format similar to that used in a general investigation survey report.

b. Control Operations. This work is subject to cost-sharing (Federal 70% and non-Federal interests 30%). Control operations are programmed for funding on a State-by-State basis in accordance with detailed design memoranda approved by OCE as to scope and cost of work performed.

c. Applied Research. This activity is Federally funded. Funding level is developed by OCE with assistance of the Interagency Research Advisory Committee and the Division concerned. The lead laboratory for research in this area is WES.

CHAPTER 21

REGULATORY FUNCTIONS TO PROTECT/PRESERVE NAVIGABLE
WATERS AND ENVIRONMENT

21-1. Background. Regulatory responsibilities have been exercised by the Secretary of the Army and the Chief of Engineers regarding use of navigable waters since enactment of the River and Harbor Act of 3 March 1899. Legislation enacted in October 1972 and amended in 1977 expanded the Corps responsibility in regulatory matters although the basic provisions of the 1899 Act were not repealed. These laws included the Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500); the Clean Water Act (Public Law 95-217) and the Marine Protection, Research and Sanctuaries Act of 1972 (Public Law 92-532). Permits will continue to be issued for structures in or affecting navigable waters of the United States, for the discharge of dredged or fill material into navigable waters, and for the transportation of dredged material for the purpose of dumping it into ocean waters.

21-2. Department of Army Permits

a. Permit Authorizations

(1) Section 9 of the River and Harbor Act approved March 3, 1899, (30 Stat. 1151; 33 USC 401) prohibits the construction of any dam or dike across any navigable water of the United States in the absence of Congressional consent and approval of the plans by the Chief of Engineers and the Secretary of the Army. Where the navigable portions of the waterbody lie wholly within the limits of a single State, the structure may be built under authority of the legislature of that State, if the location and plans of any modification thereof, are approved by the Chief of Engineers and by the Secretary of the Army. The instrument of authorization is designated a permit.

(2) Section 10 of the River and Harbor Act approved March 3, 1899 (30 Stat. 1151; 33 USC 403) prohibits the unauthorized obstruction or alteration of any navigable water of the United States. The construction of any structure in or over any navigable water of the United States, the excavation from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been recommended by the Chief

of Engineers and authorized by the Secretary of the Army. The authority of the Secretary of the Army to prevent obstructions to navigation in the navigable waters of the United States was extended to artificial islands and fixed structures located on the outer continental shelf by Section 4(e) of the Outer Continental Shelf Lands Act of 1953 (67 Stat. 463; 43 USC 1333). In accordance with Section 154 of PL 94-587, Section 10 permits are not required to construct wharves and piers in any waterbody located entirely within one State that is a navigable water of the U.S. solely on the basis of its historical use to transport interstate commerce. Section 154 applies only to a single pier or wharf and not to marinas nor to any pier or wharf that would cause an unacceptable impact on navigation.

(3) Section 14 of the River and Harbor Act approved March 3, 1899, (30 Stat. 1152; 33 USC 408) provides that the Secretary of the Army on the recommendation of the Chief of Engineers may grant permission for the temporary occupation or use of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States.

(4) Section 1 of the River and Harbor Act of June 13, 1902 (32 Stat. 371; 33 USC 565) allows any persons or corporations desiring to improve any navigable river at their own expense and risk to do so upon the approval of the plans and specifications by the Secretary of the Army and the Chief of Engineers. Improvements constructed under this authority, which are primarily in Federal project areas, remain subject to the control and supervision of the Secretary of the Army and the Chief of Engineers.

(5) Section 404 of the Clean Water Act of 1977 (33 USC 1344) authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits, after notice and opportunity for public hearings, for the discharge of dredged or fill material into the waters of the United States at specified disposal sites. The selection and use of disposal sites will be in accordance with guidelines developed by the Administrator of the Environmental Protection Agency (EPA) in conjunction with the Secretary of the Army published in 40 CFR Part 230. If these guidelines prohibit the selection or use of a disposal site, the Chief of Engineers may consider the economic impact on navigation of such a prohibition in reaching his decision. Furthermore, the Administrator can prohibit or restrict the use of any defined area as a disposal site whenever he determines, after notice and opportunity for public hearings and after consultation with the Secretary of the Army, that the discharge of such materials into such areas will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.

(6) Section 103 of the Marine Protection, Research and Sancturaries Act of 1972, as amended (PL 92-532, 86 Stat. 1052, 33 USC 1413) authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the transportation of dredged material for the purpose of dumping it in ocean waters where it is determined that the dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological system, or economic potentialities. The selection of disposal sites will be in accordance with criteria, developed by the Administrator of the EPA in consultation with the Secretary of the Army, published in 40 CFR Parts 220-229. However, similar to the EPA Administrator's limiting authority cited above, the Administrator can prevent the issuance of a permit under this authority if he finds that the dumping of the material will result in an unacceptable adverse impact on municipal water supplies, shellfish beds, wildlife, fisheries or recreational areas.

b. Determination of Public Interest

(1) The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity and its intended use on the public interest. Evaluation of the probable impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision should reflect the national concern for both protection and utilization of important resources. All factors which may be relevant to the proposal must be considered; among those are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs, safety, food production, and, in general, the needs and welfare of the people. No permit will be granted unless its issuance is found to be in the public interest.

(2) The following general criteria will be considered in the evaluation of every application:

(i) the relative extent of the public and private need for the proposed structure or work:

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(ii) the desirability of using appropriate alternative locations and methods to accomplish the objective of the proposed structure or work;

(iii) the extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work may have on the public and private uses to which the area is suited; and

(iv) the probable impact of each proposal in relation to the cumulative effect created by other existing and anticipated structures or work in the general area.

c. Related Considerations.

(1) Section 401 of the Clean Water Act (33 USC 1341) requires any non-Federal applicant for a Federal license or permit, that may result in a discharge of a pollutant into waters of the United States, to obtain State certification that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility.

(2) Section 307(C) of the Coastal Zone Management Act of 1972, as amended (PL 94-370, 90 Stat. 1013, 16 USC 1456(c)) requires Federal agencies conducting activities, including development projects, directly affecting a State's coastal zone, to comply, to the maximum extent practicable, with an approved State coastal zone management program. It also requires any non-Federal applicant for a Federal license or permit to comply with the State's coastal zone management program. Generally, no permit will be issued until the State has concurred with the non-Federal applicant's certification. This provision becomes effective upon approval by the Secretary of Commerce of the State's coastal zone management program.

(3) Section 302 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended, (PL 92-532, 86 Stat. 1052, 16 USC 1432) authorizes the Secretary of Commerce, to designate as marine sanctuaries areas of the ocean waters or of the Great Lakes and their connecting waters or of other coastal waters. Activities in the sanctuary are issued permits only if the Secretary of Commerce certifies that the activities are consistent with the purposes of Title III of the Act and can be carried out within the regulations for the sanctuary.

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(4) In accordance with the Fish and Wildlife Coordination Act (16 USC 661-666c) the Corps consults with the United States Fish and Wildlife Service, the National Marine Fisheries Service (as appropriate) and with the head of the appropriate State agency exercising administration over the wildlife resources of the affected State are consulted before permits are issued. Applicants are urged to modify proposals to eliminate or mitigate any damage to fish and wildlife resources when possible.

(5) The National Historic Preservation Act of 1966 (80 Stat. 915, 16 USC 470) created the Advisory Council on Historic Preservation to advise the President and Congress on matters involving historic preservation. In performing its function the Council is authorized to review and comment upon activities licensed by the Federal Government which will have an effect upon properties listed in the National Register of Historic Places, or eligible for listing. The concern of Congress for the preservation of significant historical sites is also expressed in the Preservation of Historical and Archeological Data Act of 1974 (16 USC 469 et seq.), which amends the Act of June 27, 1960. By this Act, whenever a Federal construction project or Federally licensed project, activity or program alters any terrain such that significant historical or archeological data is threatened, the Secretary of the Interior may take action necessary to recover and preserve the data prior to the commencement of the project. (33 CFR Part 305).

(6) The Interstate Land Sales Full Disclosure Act (15 USC 1701 et seq.) prohibits any developer or agent from selling or leasing any lot in a subdivision (as defined in 15 USC 1701 (3) unless the purchaser is furnished in advance a printed property report containing information which the Secretary of Housing and Urban Development may, by rules or regulations, require for the protection of purchasers. In the event the lot in question is part of a project that requires Department of the Army authorization, the Property Report is required by Housing and Urban Development regulation to state whether or not a permit has been applied for, issued, or denied by the Corps of Engineers for the development under Section 10 or Section 404. The Property Report is also required to state whether or not any enforcement action has been taken as a consequence of non-application for or denial of such permit.

(7) The Endangered Species Act of 1973 (16 USC 1531 et seq.) declares the intention of the Congress to conserve threatened and endangered species and the ecosystems on which those species

depend. The Act provides that Federal agencies must utilize their authorities in furtherance of its purposes by carrying out programs for the conservation of endangered or threatened species, and by taking such action necessary to insure that any action authorized by that Agency will not jeopardize the continued existence of such endangered or threatened species or result in the destruction or modification of habitat of such species which is determined by the Secretaries of Interior or Commerce, as appropriate, to be critical.

(8) The Deepwater Port Act of 1974 (33 USC 1501 et seq.) prohibits the ownership, construction, or operation of a deepwater port beyond the territorial seas without a license issued by the Secretary of Transportation. The Secretary of Transportation may issue such a license to an applicant if he determines, among other things, that the construction and operation of the deepwater port is in the national interest and consistent with national security and other national policy goals and objectives. An application for a deepwater port license constitutes an application for all Federal authorizations required for the ownership, construction, and operation of a deepwater port, including applications for Section 10, Section 404 and Section 103 permits which must also be issued by the Department of the Army pursuant to the authorities listed above.

(9) The Marine Mammal Protection Act of 1972 (16 USC 1361 et seq.) imposes a perpetual moratorium on the harassment, hunting, capturing, or killing of marine mammals and on the importation of marine mammals and marine mammal products without a permit from either the Secretary of the Interior or the Secretary of Commerce, depending upon the species of marine mammal involved.

(10) Section 7(a) of the Wild and Scenic Rivers Act (82 Stat. 906, 16 USC 1278 et seq.) provides that no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established.

(11) No permits are granted to work in wetlands identified as important unless the District Engineer concludes, on the basis of a public interest review that the benefits of the proposed alteration outweigh the damage to the wetlands resource and the proposed alteration is necessary to realize those benefits.

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(12) Executive Order 11988, requires Federal agencies to conduct its programs in a manner which would reduce the risk of flood loss; minimize the impact of floods on human safety, health and welfare; and the restore and preserve the natural and beneficial values served by floodplains. Permits for development in the floodplain are not issued unless such development is in the public interest.

d. Harbor Lines. Section 11 of the River and Harbor Act approved March 3, 1899 (30 Stat. 1151; 33 USC 404) authorizes the Secretary of the Army to establish harbor lines channelward of which no piers, wharves, bulkheads or other works may be extended or deposits made without approval of the Secretary of the Army. By policy stated in 33 CFR 328, effective May 27, 1970, harbor lines are guidelines only for defining the offshore limits of structures and fills insofar as they impact on navigation interests. Permits for work shoreward of those lines must be obtained in accordance with Section 10 and, if applicable, Section 404.

e. General Permits. District Engineers issue general permits for certain clearly described categories of structures or work including the discharge of dredged or fill material. After general permits are issued, individual activities falling within those categories do not require additional authorization unless the District Engineer determines on a case-by-case basis, that the public interest requires it.

f. National Permits. The Department of the Army issues authorizations for certain activities nationwide. Proposals meeting the conditions of these permits can take place without the need for an individual or general permit.

21-3. Refuse Act Permit Program. Section 13 of the River and Harbor Act approved March 3, 1899 (30 Stat. 1152; 33 USC 407) provides that the Secretary of the Army, whenever the Chief of Engineers determines that anchorage and navigation will not be injured thereby, may permit the discharge of refuse into navigable waters. In the absence of a permit, such discharge of refuse is prohibited. While the prohibition of this section, known as the Refuse Act, is still in effect, the permit authority of the Secretary of the Army has been superseded by the permit authority provided the Administrator, Environmental Protection Agency, and the States under Section 402 and 405 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500), 86 Stat. 816, 33 USC 1342 and 1345). See 40 CFR Part 124 and 125.

21-4. Use of Navigable Waters. Section 7 of the River and Harbor Act approved 8 August 1917 authorizes the Secretary of the Army to promulgate regulations for the use, administration, and navigation of the navigable waters of the United States as public necessity may require for the protection of life and property or operations of the United States in channel improvement. Procedures followed for promulgation of such regulations are similar to those for the permit program. (ER 1145-2-301)

a. Danger Zones. Regulations can be prescribed for the use and navigation of any area likely to be endangered by Department of Defense operations. The authority to prescribe danger zone regulations is exercised so as not to interfere with or restrict unreasonably the commercial fishing industry. (ER 1145-2-301)

b. Restricted Areas. When required for the protection of life and property at Department of Defense installations, certain areas may be set aside and reserved, such as naval restricted areas. Reasonable regulations may be prescribed, after public notice, restricting or prohibiting the use of such areas by vessels. The Coast Guard is authorized to establish restricted areas for safety but not restricted areas for DOD facilities. (ER 1145-2-301)

c. Speed Limits. When appropriate, speed limits may be established to prevent damage to Federal or public property or to exercise control in the general public interest over the movement of vessels in a restricted channel. The Coast Guard also is authorized to set speed limits for safe operation of vessels in channels and harbors pursuant to the Ports and Waterways Safety Act of 1972 (P. L. 92-340).

d. Submarine Cable and Pipe Lines Areas. The policy of the Corps with respect to showing the locations of submarine cables and pipelines on charts published by the Government is as follows:

(1) Cables and pipelines laid at sufficient depths below the beds of waterways to prevent interference with navigation or fouling by anchors are not required to be shown on Government charts issued for general use. Similarly, there is generally no need to show the location of pipelines or cables outside protected waters or in the open sea.

(2) Within protected waters such as harbors, rivers, bays, and estuaries, the location of submarine pipe or cables shall be indicated by a labeled shaded area to show the immediate overlying area. No other information as to the character or ownership of the installation will appear on the chart. (ER 1145-2-306)

CHAPTER 22

NATIONAL PROGRAM OF INSPECTION OF NON-FEDERAL DAMS

22-1. Background. The National Program of Inspection of Dams was authorized by the National Dam Inspection Act (P.L. 92-367) approved 8 August 1972. The Act authorized the Secretary of the Army acting through the Chief of Engineers to inventory and inspect all dams in the United States with certain specified exceptions. The activities performed under the program prior to December 1977 consisted of obtaining an inventory of dams (49,329); conducting a survey of each State and Federal agency's capabilities, practices and regulations regarding the design, construction, operation and maintenance of dams; development of guidelines for the inspection and evaluation of dam safety; and formulation of recommendations for comprehensive national program. A report on these activities and proposed legislation to implement a Federal dam safety program were transmitted to the Congress on 16 November 1976. Due to failures of Teton Dam, Idaho, and Kelly Barnes Dam, Georgia, there was a mounting national and Congressional interest in implementing the national dam inspection program. Congress appropriated fifteen (15) million dollars in the 1978 Public Works Appropriation Act (P.L. 95-96) to initiate the inspections. The President decided on 28 November 1977 that the dam inspection program would be immediately implemented.

22-2. Program Objectives. The objectives of the dam inspection program are to (1) provide technical inspection and evaluation of non-Federal dams to identify actual hazardous conditions to permit correction in a timely manner by non-Federal interests; (2) update and verify the national inventory of dams; and (3) assist the States in developing and instituting effective dam safety programs for non-Federal dams.

22-3. Scope of Program. The Corps of Engineers expects to inspect over 9,000 dams including all identified potentially high hazard non-Federal dams and a representative sample of potentially significant hazard non-Federal dams located on Federal lands over a four year period. The national inventory of dams will be verified and updated over a three year period to contain about 55,000 dams. The current estimated cost of this program is \$90.1 million through Fiscal Year 1981.

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22-4. Program Implementation. The States have been asked to cooperate in conducting the program by providing assurances that they will take (1) the necessary actions to implement effective dam safety programs, (2) participate in the program in a manner that will provide training of State personnel, and (3) use all available means to require dam owners to take remedial actions expeditiously where unsafe dams are found. The States have been encouraged to supervise the program activities utilizing qualified State personnel or private architect engineers and consulting engineers. Where the States do not have the capability, the Corps is supervising the program activities.

CHAPTER 23

CIVIL WORKS RESEARCH AND DEVELOPMENT (R&D)

23-1. Purpose and Nature. The R&D program is developed to support and assist in accomplishing the Civil Works (CW) mission. CW responsibilities encompass management of the nation's inland and coastal waterways and related land resources. R&D investigations include engineering, environmental, sociologic and economics.

23-2. Authorization. R&D is considered a logical derivative of effective and economical management of program accomplishment. Therefore special authorization is not required.

23-3. Mission/Workload/Problem Orientation. CW R&D requirements are derived from the Research Needs System. Under this system Division and District personnel are encouraged to document operational problems amenable to research. Corps laboratory personnel or other individuals are encouraged to submit problem statements related to advanced technology or new responsibilities. The problem statements, called Mission Problems (MPs), are distributed annually to the Divisions and Districts for review and evaluation. Priorities are established for each MP which influence the selection and initiation of new starts of each fiscal year program. The R&D programs are reviewed by the Chiefs of the technical divisions having responsibility for that discipline in order to assure proper balance of effort. The resulting product is then reviewed by the CW R&D Committee, which recommends an R&D program to the Director, CW.

23-4. Emphasis on New Missions and Lead Roles. When a new function is assigned to CW, an evaluation is made to determine if research is required to assist in mission accomplishment. R&D is also responsive to policy indications of lead roles or assignment of future responsibilities. In order to eliminate duplication, the Corps laboratories are responsible for identifying research effort accomplished by others and determining deficiencies that can be resolved by additional R&D. Research requirements developed in response to actual or potential assignment of new missions or lead roles are emphasized by OCE.

23-5. Applied Research and Development. CW R&D effort is primarily applied research aimed at resolving problems in current and future operational programs. The results are then published as guidance for implementation of practical solutions. When specific deficiencies are identified in the current state-of-the-art, some fundamental research may be accomplished.

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23-6. Current Emphasis and Program Mix. The CW R&D program mix presently underway reflects attention to priority problems requiring timely reserach in areas of growing public concern and Corps responsibilities. Examples are:

a. Improving cost-effectiveness and efficiency in accomplishing operation and maintenance missions. As more projects are completed this responsibility becomes more complex due to resource limitations.

b. Water quality protection and improvement to meet the growing public concern over environmental and health impacts as well as availability. This effort includes research related to regional and reservoir wastewater management systems, and water quality problems induced by impoundments, canalization, channel improvements, dredged material disposal, and other man-made perturbations and natural lakes, and riverine and marine systems.

c. Coastal engineering to meet public demands for preservation of natural resources. Types of research investigated are planning, design, and permit management of shore and offshore facilities, mitigation of coastal erosion, and protection and enhancement of marshlands, estuarine and open coastal ecological systems, and other environmental values.

d. Special engineering design and construction problems, related to economics, safety and reliability. Included in this effort are:

(1) Problems related to seismic activity and poor foundations (soil or rock).

(2) Hydraulic problems related to navigability, streambank protection and channel stability.

(3) Construction materials and technology. This effort includes development and implementation of more efficient and economical concepts, and methodology for utilizing deficient aggregates or substituting new materials.

e. Ice engineering, which includes extension of the navigation season; deicing of navigation locks, walls and gates; unclogging of ice-jammed water supply intake towers, flood control gates, and hydropower inlet works; and prevention on mitigation of ice-jam flooding or ice-pressure damage to bridges and offshore and onshore structures.

f. Development of new water resources planning concepts, related to utilization of non-structural alternatives for floodplain management problems, and synthetic analysis of economic, environmental, and social multi-objective goals.

g. Utilization of new concepts or techniques developed by other disciplines, such as remote sensing, and mathematical models and eco-models. Applications of these techniques are utilized for data gathering, monitoring, and evaluating hydrologic, hydraulic, and other physical and socio-economic problems to assist engineering decision making.

23-7. Organizational Responsibilities. ER 70-1-5 and 70-2-6 prescribe the functional responsibilities and interrelationships of the field offices, research centers and OCE.

a. OCE Research and Development Office (RDO). The RDO is responsible to the Chief of Engineers for centralized management of the Corps R&D activities at Corps research centers, except the Institute of Water Resources and the Hydrologic Engineering Center. RDO defends the CW R&D program before the Office of Management and Budget and the Congressional Appropriations Committees and provides staff support to the OCE R&D Review Board.

b. OCE Research and Development Review Board (RDRB). The function of the RDRB is to insure that the overall Corps R&D program meets the Chief of Engineers goals, objectives, and priorities.

c. Civil Works Directorate. CW responsibilities include identification of requirements and allocation of resources. These responsibilities include: identifying, defining and prioritizing problems, monitoring technical progress and validity of results, and transfer of technology to users in field offices in a timely manner and in a readily applicable form. Coordination with RDO in developing program guidance to research centers and reorienting or revising work schedules in response to actual performance or changing conditions. In addition, the Directorate guides the Institute of Water Resources and the Hydrologic Engineering Center in program development and operation.

(1) CW R&D Committee reviews the proposed distribution of funds to the current fiscal year and the fiscal year plus one to determine program balance, assure future problems are properly evaluated, and determine proper emphasis. Upon completion of the review the committee makes specific recommendations to the Director, CW. The User Representatives provide staff support to the committee.

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(2) Chiefs of technical divisions review the programs for which their Technical Monitors are responsible to assure that the highest priority needs are addressed.

23-8. Research Work for Others. Corps research centers are recognized by Federal and State agencies, industry and academia as experts in their technical fields. This recognition generates demands by others on the research centers and is authorized by existing regulations. Accomplishment of work for others is subject to approval by OCE dependent on the availability of resources and the accomplishment of assigned mission. Laboratory Investigation and Materials Testing is undertaken for other (ER 1140-1-210).

23-9. Transfer of Research Results. Research effort is planned and executed to produce results that can be easily implemented. In the case of CW effort this requires producing Engineer Technical Letters (ETLs), Engineer Manuals, computer software user manual, etc.

23-10. Internal and External Coordination and Information Exchange. Internal information exchange is accomplished by publishing the documented research effort, ETLs, manuals and special research center bulletins. External coordination is accomplished through the Defense Documentation Center, National Technical Information Service, and the Water Resources Scientific Information Service. In addition, Corps technical people serve on committees which discuss each agency's programs and capabilities.

23-11. Exclusion of Non-R&D Activities from R&D Funding. Non-R&D activities such as routine data collection, training, development of manuals and standard computer programs and Scientific and Technical Information (STINFO) Centers are not funded from "General Investigations - Research and Development" fiscal category.

23-12. Research not Funded as R&D. Congress has specifically authorized programs, which include R&D, this R&D is funded under these specific programs (e.g., Aquatic Plant Program, Fisheries Engineering, Fish Protection, Environmental Water Quality Operational Studies). When research is related to a specific project and is not transferable, the effort is funded by the specific project. All research effort regardless of source of funds is considered integral to the CW R&D program.

23-13. Coordination. To assure coordination of the Corps R&D Program with the programs of other agencies the Corps participates in the Biennial Interagency Water Resources Research Conference. Participants include four member agencies, Bureau of Reclamation,

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Tennessee Valley Authority, Bonneville Power Administration and the Corps. Several other agencies, Federal Highway Administration, Soil Conservation Service and the Bureau of Mines also participate. Between conferences, working groups within the respective disciplines maintain communications and assure effective coordination.

CHAPTER 24

ACTIVITIES RELATED TO PROGRAMS
ADMINISTERED BY OTHER FEDERAL AGENCIES

24-1. General. Originally Federal functions with respect to water resources development involved single-purpose projects by specific agencies with clear-cut divisions of responsibility and functions. Successive acts of Congress have extended the legislative requirements and interest of Federal agencies in different phases of land and water resources conservation and development. In view of frequent incompatibility among various uses, it is important that maximum possible coordination be achieved. This is required by legislation and various administration directives. Consideration of work for other agencies is an important consideration in the preparation of budgets and capabilities. Authorities for assisting agencies in accomplishing activities are discussed in paragraph 9-10. Following are brief summaries of the policy on other agency activities that are related to Corps programs. See also Chapter 27 - Interagency Agreements.

24-2. Environmental Review and Coordination. Proposed actions of one Federal agency which relate to another's area of jurisdiction and expertise must, in accordance with the provisions of Section 102(2)(C) of the National Environmental Policy Act of 1969 (P.L. 91-190), be coordinated, reviewed and complemented where possible by and among the agencies involved. The Corps objective in reviewing environmental impact statements drafted by other agencies is to provide constructive assistance on proposals related to the Corps functional area of responsibility and expertise. The review of environmental impact statements prepared by other agencies will consider the impact of such proposals on the Corps of Engineers functional area of responsibility. (ER 200-2-2)

24-3. Watershed Protection. The Soil Conservation Service, under authority of the Watershed Protection and Flood Prevention Act of 1954, Public Law 566, 83d Congress, as amended, constructs dams and other engineering works in upstream watersheds for a variety of purposes including flood control. The Corps cooperates fully with the SCS in its carrying out the program; and strives to bring about coordination between the P.L. 566 program and the program of the Corps. (EM 1120-2-101)

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24-4. National Wild and Scenic Rivers Systems. At the request of the HCRS and Forest Service, the Corps participates in field studies of stream segments specified in P.L. 90-542, as amended, and other proposed segments for potential additions to the National System.

24-5. Land and Water Conservation Fund. The HCRS provides assistance to the States and Territories in preparing and maintaining Comprehensive Statewide Outdoor Recreation Plans. These plans are required by Public Law 88-578 for State participation in the Land and Water Conservation Fund. Planning for recreation development at Corps projects is coordinated with, and assists in the fulfillment of, plans developed by the States pursuant to the Land and Water Conservation Fund Act. (ER 1165-2-400)

24-6. Community Development Program. Title I of the Housing and Community Development Act of 1974, Pub. Law 93-383, establishes a program of community development grants. This program is administered by the Department of Housing and Urban Development. The primary objective of the Community Development Program is the development of viable urban communities, including decent housing and suitable living environment and expanding economic opportunities, principally for persons of low and moderate income. Under the program, cities may undertake a wide range of activities directed toward neighborhood revitalization, economic development, and provision of improved community facilities and services. Some of the specific activities that can be carried out with block grant funds include acquisition of real property, relocation and demolition, rehabilitation of residential and nonresidential structures, and provision of public facilities and improvements, such as neighborhood centers, streets, water and sewer facilities, and flood and drainage facilities in cases where assistance for such facilities has been determined to be unavailable under other Federal laws or programs. In addition, block grant funds are available to pay for certain public services which are appropriate or necessary to support other block grant activities. The Corps participates in community development activities in various ways. Participation includes acting as a direct action agent under existing Congressional authorities for flood control, beach erosion control, or navigation improvement. The Corps provides technical information and advice or, where appropriate, serves as an engineering-consultant in areas of special Corps expertise.

24-7. Small Reclamation Projects. The Small Reclamation Projects Act of 1956 (Public Law 984, 84th Congress), as amended, established a program under which non-Federal organizations in the 17 contiguous western States and Hawaii can obtain loans for small reclamation projects. The Corps, in cooperation with the Bureau of Reclamation, assists in analysis and evaluation of the Federal interest when loan applications propose projects which involve flood control effects. (ER 1165-2-111)

24-8. National Recreation Areas. National Recreation Areas (NRA) at Corps reservoirs will normally be developed and managed by the Corps of Engineers in accordance with authorizing legislation. A Corps project may be so located, or may be of such size and nature, that it would make a desirable addition to a major resource area being administered by another Federal agency. In such cases, the Corps may enter into an agreement under which the area will be managed (as an NRA) by that agency. (ER 1165-2-400)

24-9. Forest Service Lands. The policy of developing recreation as an integral part of a coordinated overall management plan includes reservoir projects of the Corps located within or partly within the National Forest System. District Engineers and Forest Supervisors cooperate at all project stages in accordance with a Memorandum of Agreement, dated 13 August 1964, by the Secretaries of the Army and Agriculture. The objective is to meet the public needs of both the National Forest and the water resource projects in a cost efficient manner. (ER 1120-2-400)

24-10. National Trails System. Public Law 90-543 contains procedures for setting up national recreation and scenic trails. National recreation trails located near urban areas may be established by the Secretary of the Interior, or by the Secretary of Agriculture where lands administered by either are involved. National scenic trails, and extended trails so located as to provide for maximum outdoor recreation potential, are established by Acts of Congress. The Corps recognizes that the aesthetic attractiveness of scenic corridors available on project lands can be enhanced by incorporation of trails or trail systems. Accordingly, wherever warranted by the current or potential public use of Corps water resource projects, consideration is given in planning to the incorporation of trails. (ER 1120-4-400)

24-11. Endangered Species. The Endangered Species Act of 1973 (PL 93-205), as amended (PL 95-632), states the policy of Congress is that all Federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act. The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and to provide a program for the conservation of such endangered species and threatened species. Section 7 states that each Federal agency, shall, in consultation with and with the assistance of the Secretary of Interior/Commerce, insure that any action authorized, funded, or carried out does not jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat....determined by the Secretary (Interior/Commerce)....to be critical unless an exception has been granted by the Endangered Species Committee. Additional guidelines for protection of marine mammals are established in P.L. 92-522. (ER 1105-2-129)

24-12. Herbicide and Pesticide Control

a. Administration. Controls are exercised by the Chief of Engineers to insure the appropriate use of herbicides and other pesticides through professional training of pest control personnel, selection of suitable pest control agents, research and development on satisfactory and economical methods of control agents and the systematic review of pest control program. The Division Engineer is responsible for providing the training of pest control personnel and the reporting of pesticide programs as prescribed. (ER 1130-2-413)

b. Personnel Training. All personnel directly involved in pest control must be properly trained in the safe application of herbicides, insecticides, rodenticides, fumigants and fungicides. Training programs are conducted on a periodic basis and include written examinations of technical information relating to the appropriate use of specific materials, safe storage and handling of toxic materials and the proper operation and maintenance of equipment. Training of personnel includes correspondence courses, practical demonstrations, on-the-job training, and conference sessions of supervisory and technical specialists. (ER 1130-2-413)

c. Summary Reporting. Pest control programs are reported by the District to the Division to OCE and reviewed for appropriate use.

d. Restricted Pesticides. There is no pesticide so toxic that it cannot be safely handled if proper precautions are taken, nor is there any pesticide so safe that label cautions can be ignored. To insure that pesticides are used within the capability of pest control personnel and that proper environmental considerations given, restricted use of pesticides must be applied by certified applicators. (ER 1130-2-413)

24-13. Federal Energy Regulatory Commission (FERC) Licenses. Under the Federal Power Act, non-Federal entities are required to obtain from the Federal Power Commission (now FERC) a license for construction and operation of hydroelectric power developments affecting navigable waters, lands of the United States, or interstate commerce. The Federal Power Act requires the proposed power project to be optimally related to comprehensive development plans. All applications for license are referred to the Corps and other agencies for views and recommendations concerning licensing and provisions to be included in the license if issued. Applications for FERC permits which give the applicant priority of interest in a power site pending completion of studies, but do not authorize construction, are likewise referred to the Corps. The Act also specifies that no license affecting navigation shall be issued until the plans are approved by the Chief of Engineers and the Secretary of the Army. (ER 1140-2-4)

a. License Renewal. The United States has the right, upon the expiration of any FERC license, to take over and thereafter to operate the project under certain circumstances, if such action is in the public interest. The Corps is required to comment on license renewal applications. Although a number of licenses have recently expired, the Corps has, to date, not recommended takeover in any case to the FERC.

b. Distinction between Corps of Engineers and FERC Jurisdiction with Respect to Non-Federal Hydroelectric Projects.

(1) The following procedures are currently being followed in connection with Department of Army permit responsibilities involving pre-1920 legislation:

(a) In regard to FERC licensing of projects, Corps responsibilities under Section 10 of the River and Harbor Act of 1899, for power related activities, may normally be met through the

FERC licensing procedure including insertion of terms and conditions in the license of the interest of navigation. Section 4(e) of the Federal Power Act provides for approval of plans of project works by the Chief of Engineers and Secretary of the Army from the standpoint of interests of navigation. The consideration for Corps approval under Section 4(e) will be limited to effects of project power related activities on navigation.

(b) Applications to Corps Division or District Engineers for approval of repairs, maintenance or modification of non-Federal water power projects authorized under River and Harbor Acts as well as special Acts of Congress prior to 1920, or requests for advice with respect thereto should be referred to the FERC for consideration in accordance with the provisions of the Federal Power Act. The permittee should be advised that the application is being referred to the FERC for consideration and that if a FERC license is required, Corps recommendations will be furnished to the FERC.

(2) Responsibilities under Section 404 of the Clean Water Act of 1977 pertinent to discharge of dredged or fill material into the navigable waters at specified disposal sites will be met only through the Department of Army permit procedures. In regard to FERC cases involving Section 404, the Corps report to the FERC through (DAEN-CWE-HY) will specify the need for a Department of Army permit (Section 404) if, on the basis of the Division and District Engineers' reports, such permit is deemed necessary. A Department of the Army permit will be required for any portion of a proposed project which involves the discharge of dredged or fill material into the waters of the United States. This includes the placement of fill necessary for construction of a project's dam and appurtenant structures.

(3) When applicable, FERC will be advised that the requirement for Department of the Army permit pursuant to Section 103 of the Marine Protection, Research and Sancturaries Act of 1972 for the transport of dredged material from the project site for the purpose of dumping it into the ocean waters will be met only through the Department of the Army permit program.

(4) In connection with FERC licensed projects, there may be proposed nonpower water oriented activities, such as recreational development, which are associated with the overall project but may not be a part of the hydroelectric power facilities at the project. Such cases, if involving navigable waters should be reviewed from the standpoint of need for a Section 10 permit. Such Section 10 permit actions would involve consideration of the overall public

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interest including water quality, fish and wildlife, recreation, general environmental concerns and the needs and welfare of the people. Corps responsibilities for permit requirements under Section 10 of the River and Harbor Act of 1899 for nonpower activities affecting navigable waters at the FERC projects will be met only through the Corps permit procedures. The Corps' report to FERC through (DAEN-CWE-HY) will specify the need for such permit when recommended by the Division and District Engineers' report.

24-14. Prime and Unique Farmland. Reporting officers contact USDA State and Land Use Committees to identify prime and unique farmland which may be impacted by proposed Corps actions. Direct and induced impacts on these farmlands are evaluated and discussed in environmental impact statements and planning reports. (ER 200-2-2)

24-15. EPA Construction Grants Programs. The EPA under Title II of the Federal Water Pollution Control Act of 1972 as amended in 1977 is responsible for administering grants to cities for construction of sewage treatment systems. The objective of the program is to clean up the nations rivers and streams to a level of quality to support fish and recreational use by 1984. The Corps is assisting EPA in managing the grants once the project has reached the construction phase. The Corps participation is in accordance with the interagency agreement of 20 January 1978. The Agreement is for the Corps to provide construction management services and act as an engineering-consultant to EPA in areas of special Corps expertise.

24-16. Wastewater Management Planning. The Environmental Protection Agency, under authority of the Federal Water Pollution Control Act, As Amended, administers programs which provide financial grants to local agencies for the planning and construction of wastewater management facilities. The Corps of Engineers participates in the planning of wastewater facilities or systems as follows:

a. The Corps may perform a single purpose wastewater management study in response to a Congressional resolution or an act of Congress.

b. The Corps may engage in wastewater management planning as part of an urban study.

c. The Corps may provide advisory assistance to local or State agencies engaged in areawide waste treatment planning at the request of such agency. (ER 1105-2-180)

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24-17. Coastal Zone Management Act (CZMA) of 1972, as amended (Public Law 92-583). This Act declared a national interest in the effective management, beneficial use, protection and development of the coastal zone. It indicates that the primary responsibility for planning and regulation of land and water uses rests with the State and local governments. The Act states that Congress finds that the key to more effective protection and use of the land and water resources of the coastal zone is to encourage the State to exercise their full authority over lands and waters in the coastal zone. The Secretary of Commerce is authorized to award Federal grants to assist the States in developing and administering land and water use management programs for the coastal zone giving full consideration to ecological, cultural, historic and esthetic values as well as to the need for economic development. Federal agencies with activities directly affecting the coastal zone or development projects within that zone must assure that those activities or projects are consistent, to the maximum extent practicable, with the approved State program.

a. Policy regarding Corps role under PL 92-583.

(1) Civil Works activities undertaken subsequent to approval of a State's Coastal Zone Management (CZM) plan will be consistent with the plan to the maximum extent practicable.

(2) Permit applications for activities regulated by Corps authorities must include a certification that the action contemplated is consistent with the approved State CZM Plan.

(3) Technical assistance requested by the states to assist their implementation of the national policy for coastal zone management will be provided to the extent practicable.

b. Corps of Engineers Responsibilities.

(1) Although the Corps of Engineers was not given a specific legislative assignment in the development or implementation of state coastal zone management programs, it was designated a relevant Federal agency. As such, the Corps provides review and comment on regulations and guidance pursuant to the Coastal Zone Management Act, participates in meetings, conferences, and other activities, as requested, and provides technical assistance, as appropriate. The Corps also coordinates with each State in the development of its program, reviews draft and final program documents, and reviews draft and final EIS's.

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(2) Corps coordination and review responsibilities are carried out by designated CZM coordinators for each coastal state and a CZM coordinator in OCE.

(3) Corps review of a State CZM program considers the adequacy of the program with respect to the Corp's authorities and responsibilities. The program is also reviewed to assess its compliance with the CZMA.

24-18. Flood Insurance Studies. Under the interagency agreements, the Corps undertakes flood insurance studies for the National Flood Insurance Program administered by the Federal Insurance and Hazard Mitigation Office (until recently the Federal Insurance Administration in HUD) of the Federal Emergency Management Agency (FEMA). These studies are done on a reimbursable basis at the election of District officers.

CHAPTER 25

LEGISLATION PERTINENT TO THE WATER RESOURCES PROGRAM OF
THE CORPS OF ENGINEERS

25-1. 11 March 1779, Corps of Engineers. Resolved, "That the engineers in the service of the United States shall be formed into a corps and styled the 'Corps of Engineers,' xxxxxxThat a commandant of the Corps of Engineers shall be appointed by Congress, xxx."

25-2. 24 May 1824, Navigation. The first appropriation by Congress for work in navigable waters was \$75,000 for improving navigation over sand bars in the Ohio River and for removing snags from the Ohio and Mississippi Rivers (4 Stat. 32).

25-3. 3 March 1875, River and Harbor Act of 1875. Work by Contract. Section 1 directed that Secretary of Army apply funds as far as may be practical by contract after public advertisement, and to lowest responsible bidders.

25-4. 28 June 1879, Mississippi River Commission. Federal flood control activity took definite form by the establishment of the Mississippi River Commission with jurisdiction over navigation work and flood control related thereto on the lower Mississippi River (21 Stat. 37, 33 U.S.C. 641-647).

25-5. 24 April 1888, Condemnation Proceedings and Donations. Authorized the Secretary of Army to initiate condemnation proceedings for any lands, rights-of-way, or material needed to maintain, operate, or prosecute works for the improvement of rivers and harbors and to accept donations of lands or materials required for the maintenance or prosecution of such works (24 Stat. 94, 33 U.S.C. 591)

25-6. 11 August 1888, River and Harbor Act. Fishway Construction. Section 11 authorized construction of fishways whenever Federal river and harbor improvements obstruct passage of fish (26 Stat. 426, 33 U.S.C. 608).

25-7. 21 February 1891, Commercial Statistics. Required owners, agents, masters and clerks of vessels arriving or departing from locations on waterways improvements to furnish statistics on vessels, passengers, freight and tonnage (26 Stat. 766, 46 U.S.C. 48). (See Section 11, PL 67-362)

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25-8. 13 July 1892, River and Harbor Act.

Dredging Restrictions. Section 5 prohibited the expenditure of money appropriated for the improvement of rivers and harbors, for dredging inside of duly established harbor lines (27 Stat. 111, 38 U.S.C. 628).

25-9. 1 March 1893, Debris Commission. The California Debris Commission was established with certain jurisdiction over hydraulic mining of the territory drained by the Sacramento and San Joaquin River Systems (27 Stat. 507, 33 U.S.C. 661).

25-10. 3 March 1899, River And Harbor Act.

Permits. Section 9 requires approval of the Chief of Engineers, the Secretary of the Army and the consent of Congress for the construction of bridges, dams, dike, etc across any navigable water of the U.S. structures built under State authority in a single state require approval of the Chief of Engineers and the Secretary of the Army (33 U.S.C. 401) Section 10 prohibited placing obstructions to navigation outside established Federal lines and excavating from or depositing material in such waters, unless a permit for the works has been authorized by the Secretary of Army (30 Stat. 1151, 33 U.S.C. 403).

Harbor Lines. Section 11 authorized the Secretary of Army to establish harbor lines beyond which no piers, wharves, etc., shall be extended without a permit (30 Stat. 1151, 33 U.S.C. 404).

Refuse. Section 13 prohibited depositing refuse, except that flowing from streets and sewers in a liquid state, into any navigable water (30 Stat. 1152, 33 U.S.C. 407).

Obstructions. Section 15 prohibited obstructions by anchoring vessels and outlines the duties of an owner of a sunken vessel (30 Stat. 1152, 33 U.S.C. 409).

Sunken Vessels. Section 19 authorized removal of sunken vessels or other obstructions to navigation, if not removed by owner. (33 U.S.C. 414). Vessel Grounding. Section 20 authorized removal or destruction of sunken or grounded vessels in emergencies endangering navigation. (33 U.S.C. 415).

25-11. 13 June 1902, Pub. Law 154, 57th Congress-River and Harbor Act. BERH. Section 3 authorized the establishment of the Board of Engineers for Rivers and Harbors with a primary function of reviewing all reports upon examinations and surveys authorized by Congress. (32 Stat. 372, 33 U.S.C. 541).

25-12. 17 June 1902, Pub. Law 161, 57th Congress-Reclamation. The Reclamation Act of 1902 established irrigation in the West as a national policy. The Act authorized the Secretary of the Interior

to locate, construct, operate and maintain works for the storage, diversion, and development of waters for the reclamation of arid and semiarid lands in the Western States (32 Stat. 388, 43 U.S.C. 1457).

25-13. 3 March 1905, Pub. Law 215, 58th Congress-River and Harbor Act. Refuse Regulations. Section 4 authorized the Secretary of the Army to prescribe regulations to govern the transportation and depositing of refuse in navigable waters (33 Stat. 1147, 33 U.S.C. 419). Section 6 provides for funding of activities associated with implementation of the above.

25-14. 3 March 1909 Pub. Law 317, 60th Congress-River and Harbor Act. Lock and Dam Replacement - Free Passage. Section 6 provided for replacement of obsolete locks and dams on authorized waterways. (35 Stat. 818, 33 U.S.C. 5). Contents of Survey Reports. Section 13 directed that reports contain such data as may be practicable to secure regarding the establishment of terminal and transfer facilities, development and utilization of water power for industrial and commercial purposes, and other subjects properly connected with the project (35 Stat. 822).

25-15. 25 June 1910, Pub. Law 264, 61st Congress-River and Harbor Act. Stream Flow Measurements. Section 3 directed that surveys of navigable streams include such streamflow measurements and other investigations of the watersheds as necessary for preparation of plans of improvements (36 Stat. 669, 33 U.S.C. 546).

25-16. 27 February 1911, Pub. Law 425, 61st Congress-River and Harbor Act. Uniform Freight Classification. Section 1 directed the Corps to adopt a uniform system of freight classification in the collection of statistics related to traffic and to collate ton-mileage statistics upon rivers or inland waterways. Section 1 of 25 July 1912 Act also calls for such a uniform system. (37 Stat. 201, 33 U.S.C. 405).

25-17. 1 March 1911, Pub. Law 435, 61st Congress-Conservation of Watersheds. Section 1 enables the States to enter into compacts or agreements with other States or the United States for the purpose of conserving the forests, water supplies and navigability of rivers (36 Stat. 961, 16 U.S.C. 552).

25-18. 25 July 1912, Pub. Law 241, 62d Congress-River and Harbor Act. BERH Functions. Section 3 authorized the BERH to examine and review special reports on request of the Chief of Engineers. (37 Stat. 232). Future Power. Section 12 authorized the Secretary of Army on recommendation of Chief of Engineers to provide in any authorized

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dam such foundations, sluices, and other works as may be considered desirable for future water power development (37 Stat. 233, 33 U.S.C. 609).

25-19. 4 March 1913, Pub. Law 429, 62d Congress-River and Harbor Act. Contents of Survey Reports. Section 3 required that additional information be included in reports on terminal and transfer facilities, water power development, and other subjects that could be properly connected with a project (37 Stat. 825, 33 U.S.C. 545).

25-20. 4 March 1915, Pub. Law 291, 64th Congress-Appropriation Act. Contributed Funds. Section 4 authorized the Secretary of Army to receive contributions from private parties for expenditure with Federal funds on authorized river and harbor improvements (38 Stat. 1053, 33 U.S.C. 560). Bends. Section 5 provides that channel dimensions include increases at entrances, bends, sidings, and turning places for free movement of vessels. Anchorage. Section 7 authorized the Secretary of Army to establish anchorage grounds for vessels in all harbors, rivers, bays and other navigable waters (38 Stat. 1053, 33 U.S.C. 471). NOTE: This function was transferred to Secretary of Transportation by the Department of Transportation Act of 15 Oct 1966, Pub. Law 89-670.

25-21. 1 March 1917, Pub. Law 367, 64th Congress-Flood Control Act. Flood Control. Federal construction of flood control improvements was extended outside the Mississippi Valley for the first time. Section 2 authorized a project for the Sacramento River, California (39 Stat. 949, 33 U.S.C. 703). Contents of Survey for Flood Control. Section 3 provided that all provisions of existing law on reports and projects for rivers and harbors should apply, insofar as applicable, to flood control and prescribed that all surveys for flood control should include a comprehensive study of the watershed, including water power, the effect of the improvement on navigation, and "such other uses as may be properly related to or coordinated with the project." BERH Opinion. Requires BERH, in considering flood control projects, to state its opinion as to Federal interest, share of expense to be borne by the Federal Government, and advisability of adopting projects. (39 Stat. 950, 33 U.S.C. 701).

25-22. 8 August 1917, Pub. Law 37, 65th Congress-River and Harbor Act of 1917. Condemnation Proceedings. Section 9 authorized the Secretary of Army to institute condemnation proceedings in the name of the United States for the acquisition of any land or easement whenever any

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State, any reclamation, flood control or drainage district, or other public agency created by the State is unable to obtain such land or easement for projects authorized by Congress (40 Stat. 267, 33 U.S.C. 593).

25-23. 18 July 1918, Pub. Law 200, 65th Congress-River and Harbor Act of 1918.

Condemnation. Section 5 granted the Secretary of Army the right to take immediate possession of lands on which he has instituted condemnation proceedings in the name of the United States for the acquisition of dry lands, easements, or rights-of-way needed for authorized river and harbor improvements (40 Stat. 911, 33 U.S.C. 594).

25-24. 2 March 1919, Pub. Law 323, 65th Congress-River and Harbor Appropriation Act. Public Terminal. Section 1 stated the policy of Congress that ". . . at least one public terminal should exist, constructed, owned, and regulated by the municipality, or other public agency of the State and open to the use of all on equal terms, . . ." (40 Stat. 1286, 33 U.S.C. 551).

Contract Price. Section 8 provided that contract price should not exceed by 25% the estimated cost of doing work by Government plant. (Amended by PL 95-269)

25-25. 28 February 1920, Pub. Law 152, 66th Congress-Transportation Act. Section 500 stated the policy of Congress to promote water transportation. Duties of the Secretary of Army with the object of promoting water transportation, were outlined (41 Stat. 499, 49 U.S.C. 142).

25-26. 5 June 1920, Pub. Law 261, 66 st. Congress - Merchant Marine Act of 1920. Section 8 authorizes preparation and updating of Port Series prepared by BERH, on port facilities and harbor conditions of principal U.S. Coastal and Great Lakes Ports to include compilation, publishing and distribution of useful statistics, data and information on inland waterways.

25-27. 5 June 1920, Pub. Law 263, 66th Congress-River and Harbor Appropriation Act-Contents of Survey Reports. Section 2 provided that reports "shall contain a statement of special or local benefit which will accrue to localities affected by such improvement and a statement of general or national benefits, with recommendations as to what local cooperation should be required, if any, on account of such special or local benefit" (41 Stat. 1010, 33 U.S.C. 547).

25-28. 10 June 1920, Pub. Law 280, 66th Congress-The Federal Water Power Act. Control non-Federal development of hydroelectric power

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through a licensing system to be administered by the newly created Federal Power Commission (FPC). Pub. Law 95-91 created the Federal Energy Regulatory Commission to replace functions administered by the FPC. (41 Stat. 1063, 16 U.S.C. 797e).

25-29. 22 September 1922, Pub. Law 362, 67th Congress. Section 9 directs that no projects will be considered for adoption, except with a view to a survey, if five years elapsed since the report on the proposed project was submitted to Congress. Section 11 provides for the principal program governing the collection and compilation of statistics on the water borne commerce of the U.S. Section 13 extends jurisdiction of Mississippi River Commission for the purposes of levee and bank protection, to the tributaries and outlets of the Mississippi River between Cairo, Ill. and the Head of the Passes. (42 Stat. 1043, 33 U.S.C. 555).

25-30. 3 March 1925, Pub. Law 585, 68th Congress-Contributed Funds. Section 11 authorizes acceptance of funds advanced by local interests for prosecution of rivers and harbors work.

25-31. 21 January 1927, Pub. Law 560, 70th Congress-River and Harbor Act. 308 Reports. Section 1 authorized surveys in accordance with H. Doc. 308, 69th Congress. (usually referred to as "308 Reports") on comprehensive development for navigation, water power, and flood control. This provided Congress basis for some emergency relief projects of the 1930's and the basic plan of TVA. (45 Stat. 534).

25-32. 15 May 1928, Pub. Law 391, 70th Congress-The Flood Control and Protection Act of 1928. Comprehensive MR&T. Section 1 authorized the comprehensive plan for control of the Mississippi River and tributaries. (45 Stat. 534, 33 U.S.C. 702a).

25-33. 3 July 1930, Pub. Law 520, 71st Congress-Beach Erosion Board Established. Section 2 established the Beach Erosion Board. This Act of Congress provided for the Federal Government to make shore and beach protection studies in cooperation with local interests. The BEB was directed to furnish technical assistance and review reports of the investigations (46 Stat. 945, 33 U.S.C. 426). NOTE: The Act of 7 November 1963 abolished BEB, transferred review functions to BERH, and established the Coastal Engineering Research Center.

25-34. 10 February 1932, Pub. Law 16, 72d Congress-Recreational Boating. "The Fletcher Act" broadened the scope of Federal interest in navigation to include as "commerce" the use of waterways by "seasonal passenger craft, yachts, houseboats, fishing boats, motor

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boats, and other similar water craft, whether or not operated for hire". (47 Stat. 42, 33 U.S.C. 541)

25-35. 30 August 1935, Pub. Law 409-River Harbor Act of 1935-Content of Survey Reports. Section 5 required that navigation studies of the improvement of the entrance of the mouth of any river or of any inlet contain information concerning the possible accretion/erosion effects of the improvements on the shoreline for at least 10 miles on either side (49 Stat. 1048, 33 U.S.C. 546a).

25-36. 22 June 1936, Pub. Law 738, 74th Congress-Flood Control Act of 1936. Section 1 declared flood control to be a proper Federal activity; that improvements for flood control purposes are in interest of the general welfare; that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries for flood control "if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected" (49 Stat. 1570, 33 U.S.C. 701a).

Jurisdiction. Section 2 set forth the jurisdiction of Federal activities and prescribed among other things, "That, hereafter, Federal investigations and improvements of rivers and other waterways for flood control and allied purposes shall be under the jurisdiction of and shall be prosecuted by the Army Department under direction of the Secretary of Army and supervision of the Chief of Engineers" (49 Stat. 1570, 33 U.S.C. 701b).

Local Cooperation. Section 3 stipulated for the projects authorized therein what have become known as the "a-b-c" requirements of local cooperation; that local interests should: (a) provide without cost to the United States all lands, easements, and rights-of-way necessary for the construction of the project, except as otherwise provided herein; (b) hold and save the United States free from damages due to the construction works; (c) maintain and operate all the works after completion in accordance with regulations prescribed by the Secretary of Army (49 Stat. 1571, 33 U.S.C. 701c). Requirement (b) amended by Sec. 9 of the Water Resources Development Act of 1974 (Pub. Law 93-251).

25-37. 19 July 1937, Pub. Law 208, 75th Congress-Contributed Funds. Authorized the Secretary of the Army to receive and expend funds contributed by States and political subdivisions in connection with funds appropriated by the United States for flood control projects when considered advantageous to the public interest (50 Stat. 518, 33 U.S.C. 701h).

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25-38. 28 August 1937, Pub. Law 406, 75th Congress.

Clearing and Snagging. Section 2 authorized small clearing and snagging projects for flood control, limited to Federal cost per project (50 Stat. 877, 33 U.S.C. 701g). Amended by Pub. Law 93-251 to \$250,000 limit per project.

25-39. 20 June 1938, Pub. Law 685, 75th Congress-River and Harbor Act of 1938; Land Exchange. Section 2 authorized the Secretary of Army upon the recommendation of the Chief of Engineers, to exchange land or other property of the Government for private lands or property which may be advisable in the execution of authorized work of river and harbor improvement. Section 10 authorized the Secretary of Army to grant easements for rights-of-way for public roads across Federal lands. (52 Stat. 804, 33 U.S.C. 558b).

25-40. 28 June 1938, Pub. Law 761, 75th Congress-Flood Control Act of 1938 Modified a-b-c's. Section 2 modified the flood control Act of 22 June 1936 eliminating the a-b-c requirements for flood control reservoirs channel improvement or channel rectification projects. Lands, easements and rights of way include highway, railway and utility relocation. Amended by Act of 18 August 1941 (52 Stat. 1215, 33 U.S.C. 701 c-1).

Flood Area Evacuation. Section 3 provided for modification of authorized projects to provide for evacuation of all or parts of flood areas where such action would substantially reduce protection costs of authorized flood walls or levees (52 Stat. 1216, 33 U.S.C. 701i).

Future Power. Section 4 authorized installation of facilities for future power use when approved by the Secretary of Army on recommendation of the Chief of Engineers and the Federal Power Commission (52 Stat. 1216, 33 U.S.C. 701s).

25-41. 4 August 1939, Pub. Law 260, 76th Congress-Reclamation Project Act of 1939. Section 9(b) permitted BUREC to allocate part of reclamation project costs to flood control and navigation. In connection with the making of such an allocation, the Secretary of Interior shall consult with Chief of Engineers and Secretary of Army and may perform necessary investigations or studies under a cooperative agreement with the Secretary of War (53 Stat. 1193, 43 U.S.C. 485h).

25-42. 21 June 1940, Pub. Law 647, 76th Congress-Bridge Alterations. The Bridge Alteration Act (Truman-Hobbs Act) provided, for apportionment between the U.S. and the owners, of the cost of altering or relocating railroad and combined railroad and highway bridges, when found unreasonably obstructive to navigation. The owner must bear the part of the cost attributable to direct and

special benefits accruing to the owner and the U.S. pays the balance including that attributable to the necessities of navigation (54 Stat. 497, 33 U.S.C. 516). Corps responsibility for administration of the Act were transferred to Department of Transportation 15 Oct 1966. Section 6 remains the basis for sharing cost of bridge changes in navigation survey reports.

25-43. 18 August 1941, Pub. Law 228, 77th Congress-Flood Control Act 1941 Local Cooperation. Section 2 modified the 1936 and the 1938 Flood Control Acts and required the a-b-c requirements only for channel and local protection projects and not for flood control reservoirs. This section also provided that authorization for any flood control project shall expire unless cooperation is furnished within 5 years after notification. This provision has been included in subsequent Flood Control Acts (55 Stat. 638, U.S.C. 701-c).
Emergency Flood Control Work. Section 5 authorized an emergency fund to be used for flood emergency preparation, flood fighting, and repair and restoration of flood control works. Section amended and restated by Public Law 99, Act of June 28, 1955.
Sharing Leasing Monies. Section 7 provided that 25% of money from leasing of reservoir lands be paid to the State for schools and roads. Later amended to 75% by P.L. 780, 83d Congress. (33 U.S.C. 701c - 3)

25-44. 22 December 1944, Pub. Law 534, 78th Congress-Flood Control Act of 1944.

Rights of States. Section 1 declared policy of Congress to recognize rights and interests of the States in water resource development, and requirement for consultation and coordination with affected States (58 Stat. 887, 33 U.S.C. 701-1).

Coordination with Department of Interior. Section 1 calls for coordination with the Department of the Interior in cases involving water rising west of the 97th meridian.

Major Drainage. Section 2 defined major drainage as flood control. This provides legislative basis for consideration of major drainage improvements in flood control investigations and reports (58 Stat. 889, 33 U.S.C. 701 a-1)

Recreation. Section 4 authorized providing facilities in reservoir areas for public use, including recreation and conservation of fish and wildlife (58 Stat. 889, 16 U.S.C. 460-b).

Power Disposition. Section 5 provided for disposal by the Secretary of the Interior of surplus electric power from Corps projects (58 Stat. 890, 16 U.S.C. 825s).

Water Supply. Section 6 authorized disposal by the Secretary of Army, for domestic and industrial uses, of surplus water available at reservoirs. (33 U.S.C. 708)

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Regulations for Use of Storage. Section 7 specified that the Secretary of the Army shall prescribe regulations for the use of storage allocated for flood control or navigation to all reservoirs constructed wholly or in part with Federal funds, except those of the TVA (58 Stat. 890, 33 U.S.C. 709).

Irrigation. Section 8 provided that Corps reservoirs may include irrigation purpose in 17 western states. (43 U.S.C. 390)

25-45. 2 March 1945, Pub. Law 14, 79th Congress-River and Harbor Act of 1945-Clearing and Snagging. Section 3 authorized small clearing and snagging projects for navigation or flood control. Annual expenditure for Nation limited to \$300,000 (59 Stat. 23, 33 U.S.C. 603a).

25-46. 31 July 1945, Pub. Law 166, 79th Congress-Shore Protection Studies. This Act repealed the Act of June 26, 1936 (49 Stat. 1982) and established authority for the Beach Erosion Board to pursue a program of general investigation and research and to publish technical papers (59 Stat. 508, 33 U.S.C. 426a).

25-47. 24 July 1946, Pub. Law 526, 79th Congress-Flood Control Act of 1946. Submission of reports. Section 2 states that no project or modification not authorized, of a project for flood control or rivers and harbors shall be authorized by the Congress unless a report for such project has been previously submitted by the Chief of Engineers.

R. R. Bridge Alterations. Section 3 authorized the Chief of Engineers to include at Federal expense necessary alterations to railroad bridges and approaches on authorized flood-protection projects (60 Stat. 642, 33 U.S.C. 701p).

Leases. Section 4 amended Pub. Law 534, 78th Congress, to include authority to grant leases to non-profit organizations at recreation facilities in reservoir areas at reduced or nominal charges (60 Stat. 642, 16 U.S.C. 460d).

Repair of Facilities Damaged by Operation of Corps Dam. Section 9 authorized repair of highway, railroad, or utility damaged by the operation of a dam or reservoir (60 Stat. 643, 33 U.S.C. 701q).

Emergency Bank Protection. Section 14 authorized emergency bank-protection works to prevent flood damage to highways, bridge approaches and public works. Annual expenditures were limited to \$1,000,000 with not more than \$50,000 at any single locality (60 Stat. 654, 33 U.S.C. 701r). NOTE: Amended by Pub. Law 93-251 to \$10 million and \$250,000 limits. Authority granted to protect churches, hospitals, schools, and other non-profit public services.

25-48. 13 August 1946, Pub. Law 727, 79th Congress.
Shore Protection Cost Sharing. Authorized Federal participation up to one-third of the construction cost, but not the maintenance, of

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protecting shores of publicly-owned property (Amended by Acts dated 28 July 1956, 23 Oct 1962 and 31 December 1970) (60 Stat. 1056, 33 U.S.C. 426e).

25-49. 14 August 1946, Pub. Law 732, 79th Congress-Fish and Wildlife Coordination Act. Provides for coordination with Fish and Wildlife Service. This Act amended Act of 10 March 1934 was amended by The Act of 12 August 1958.

25-50. 30 June 1948, Pub. Law 845, 80th Congress-Water Pollution Control Act. Authorized the Surgeon General to assist in and encourage studies and plans, interstate compacts, and creation of uniform state laws to control pollution (62 Stat. 1155, 33 U.S.C. 1151).

Pollution Control Board. The Federal Water Pollution Control Advisory Board was established. Provisions were made for low interest loans, grants to states for pollution studies, and grants in drafting construction plans.

25-51. 30 June 1948, Pub. Law 858, 80th Congress-Flood Control Act of 1948. Small Flood Control Projects. Section 205 authorized the construction of small flood control projects that have not been specifically authorized by Congress. A Federal expenditure limit was placed on each project as well as the total program funds allotted per fiscal year (Latest amendment is Sec. 61 of Pub. Law 93-251) (62 Stat. 1182, 33 U.S.C. 701s).

25-52. 17 May 1950, Pub. Law 516, 81st Congress Title I-River and Harbor Act of 1950 Consultants. Section 105 authorized the Chief of Engineers to procure temporary or intermittent services of experts or consultants or organizations in connection with civil functions of the Corps of Engineers without regard to the Classification Act (64 Stat. 168, 33 U.S.C. 569a). Transfer of Bridges. Section 109 authorized the Secretary of Army to transfer or convey to State authorities or policial subdivisions all rights, title and interest of the United States in and to all bridges constructed or acquired in connection with the improvement of canals, rivers, harbors or flood control works etc., if determined to be in the best interest of the United States (64 Stat. 169, 33 U.S.C. 534).

25-53. 17 July 1952, Pub. Law 579, 82d Congress-Water Pollution Control Act Extension. Extended the provisions of the Water Pollution Control Act (Pub. Law 845, 80th Congress) for an added three years through fiscal years 1954-1956 (66 Stat. 755, 33 U.S.C. 1159, 1160).

25-54. 7 August 1953, Pub. Law 212, 83rd Congress-Outer Continental Shelf Lands Act. Section 4(f) extended the authority of the

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Secretary of the Army to prevent obstructions to navigation in the navigable waters of the United States by including artificial islands and fixed structures located on the outer continental shelf (67 Stat. 463; 43 U.S.C. 1333(f)).

25-55. 4 August 1954, Pub. Law 566, 83rd Congress - Watershed Protection and Flood Prevention Act. Authorized the Secretary of Agriculture to cooperate with states and other public agencies in works for flood prevention and soil conservations.

25-56. 15 June 1955, Pub. Law 71, 84th Congress-Hurricane Studies. Authorized studies of the coastal and tidal areas of the eastern and southern U.S. with reference to areas where damages had occurred from hurricanes (69 Stat. 132).

25-57. 28 June 1955, Pub. Law 99, 84th Congress-Emergency Flood Control Funds. This Act authorized an emergency fund of \$15,000,000, replenishment on an annual basis, for flood emergency preparation, flood fighting and rescue operations or for repair or restoration of flood control work threatened or destroyed by flood including strengthening or extending deemed necessary by the Chief of Engineers (69 Stat. 186, 33 U.S.C. 701n). NOTE: Amended by Section 82, Pub. Law 93-251 to delete \$15,000,000 limit and authorize provision of emergency clean drinking water.

25-58. 28 July 1956, Pub. Law 826, 84th Congress-Beach Nourishment. Section 1 defines periodic beach nourishment as "construction" for the protection of shores and provided for Federal assistance to privately owned shores if there is benefit from public use or from protection of nearby public property (70 Stat. 702, 33 U.S.C. 426e).

25-59. 2 July 1958, Pub. Law 85-480-Publications. Authorized the Chief of Engineers to publish and sell information pamphlets, maps, brochures and other material on river and harbor, flood control and other civil works activities (72 Stat. 279, 33 U.S.C. 557a-b).

25-60. 3 July 1958 Pub. Law 85-500, River and Harbor and Flood Control Act of 1958.

Relocation of Governmental Structures. Section 111 authorizes the Chief of Engineers to protect, alter, reconstruct, relocate, or replace any governmental structure or facility to meet a navigation or flood control purpose; or preserve the facility when it is determined that the safety or usefulness will be adversely affected or threatened by the project. (72 Stat. 303) NOTE: Amended by Sec. 309, Pub. Law 89-298.

Hurricane Projects. Section 203 added provisions of local cooperation on three hurricane flood protection projects which

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established an administrative precedent for cost sharing in hurricane projects. Non-Federal interests were required to assume 30 percent of total first costs, including the value of land, easements and rights of way, and operate and maintain the project (72 Stat. 297).

Water Supply. Section 301 (Water Supply Act of 1958) provided that storage may be included for present and future municipal or industrial water supply in Corps or Bureau of Reclamation projects, the costs plus interest to be repaid by non-Federal entities within the life of the project but not to exceed 50 years after first use for water supply. No more than 30 percent of total project costs may be allocated to future demands. An interest-free period, until supply is first used, but not to exceed ten years, is permitted. (72 Stat. 319, 43 U.S.C. 390b).

Aquatic Plant Control Program. Section 104 authorized a comprehensive project for control and progressive eradication of water-hyacinth, alligatorweed, and other obnoxious aquatic plant growths in eight southern states (72 Stat. 297, 300).

25-61. 12 August 1958, Pub. Law 85-624-Fish and Wildlife Coordination Act. Provided that fish and wildlife conservation receive equal consideration and coordinated with other project purposes (72 Stat. 563, 16 U.S.C. 661).

25-62. 28 August 1958, Pub. Law 85-767. Authorized Federal agencies to design and construct dams in such a manner to support a public highway bridge, including construction of the bridge itself. (72 Stat. 917; 23 U.S.C. 320).

25-63. 27 June 1960, Pub. Law 86-523 - Reservoir Salvage Act. Provides for the preservation of historical and archeological data, by the Secretary of the Interior, which might otherwise be lost as the result of the construction of a dam (74 Stat. 220). Act further amended by Pub. Law 93-291.

25-64. 14 July 1960, Pub. Law 86-645-River and Harbor and Flood Control Act of 1960-Small Navigation Projects. Section 107 established a special continuing authority authorizing construction of small navigation projects. (Latest amendment is Sec 133 of Pub. Law 94-587) (74 Stat. 486, 33 U.S.C. 577).

Development of Public Port or Industrial Facilities. Section 108 authorizes disposition of property for the purpose of developing or encouraging the development of such facilities (74 Stat 486; 33 U.S.C. 578).

Flood Plain Information. Section 206 as amended by Section 206 of Pub. Law 89-789 authorized flood plain information studies (74 Stat. 500, 33 U.S.C. 709a).

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Road Relocations. Section 207 authorizes the Chief of Engineers to either improve, reconstruct, or maintain existing public roads used for the construction of a project (74 Stat. 501). NOTE: Criteria for design of replacement roads established in Sec 13, Act of 7 March 1974.

Land Acquisition. Title III known as the "Land Acquisition Policy Act of 1960" established the policy of Congress that owners and tenants whose property is acquired for a project "shall be paid a just and reasonable consideration therefor" (74 Stat. 502, 33 U.S.C. 596).

25-65. 6 September 1960-Pub. Law 86-717-Forest Conservation. Provided for the protection of forest cover for reservoir areas under the jurisdiction of the Secretary of the Army and the Chief of Engineers (74 Stat. 817, 16 U.S.C. 580m).

25-66. 20 July 1961, Pub. Law 87-88-Federal Water Pollution Control Act Amendments of 1961. Amended the Federal Water Control Act (70 Stat. 498) to provide for a more effective program of water pollution control, and for other purposes (75 Stat. 204, 33 U.S.C. 1151).

Water Quality Storage. Section 2 amended existing law to include consideration of storage in Federal projects for water quality control, except that such storage shall not be a substitute for adequate treatment or control at the source (75 Stat. 204, 33 U.S.C. 1153). NOTE: Amended and restated by Sec 102(b), Pub. Law 92-500.

25-67. 14 September 1961 - Pub. Law 87-236. Authorizes the Secretary of Army to modify certain leases entered into prior to 1 November 1965 for the provision of recreational facilities in reservoir areas (75 Stat. 509; 16 U.S.C. 460d-1).

25-68. 5 September 1962, Pub. Law 87-639.

Joint Investigations. Section 1 authorizes the Secretary of the Army and the Secretary of Agriculture to make joint investigations and surveys of watershed areas and prepare joint reports on those investigations and surveys when authorized by the Public Works Committee of the Senate or House of Representatives.

25-69. 23 October 1962, Pub. Law 87-874-River and Harbor and Flood Control Act of 1962. Shore Protection. Section 103 amended the Act approved 13 August 1946, as amended by the Act approved 28 July 1956 and indicated the extent of Federal participation in the cost of beach erosion and shore protection (50 percent of the construction cost when the beaches are publicly owned or used, and 70 percent Federal participation for seashore parks and conservation areas when certain conditions of ownership and use of the beaches are met). Small Beach Erosion Projects. Authority for the Secretary of the

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Army to undertake construction of small beach and shore protection projects was also established under Section 103. Amended by Section 112 of Pub. Law 91-611. (76 Stat. 1178, 33 U.S.C. 426g).

Aquatic Plant Control. Section 104 changed cost-sharing so that all research and planning costs prior to construction are borne by U.S. Recreation, Non-Reservoir Projects. Section 207 amended Section 4 of the 1944 Flood Control Act and permitted recreational developments at non-reservoir projects (76 Stat. 1195, 16 U.S.C. 460d).

Road Improvement and Replacement. Section 208 amends Section 207 (b) of the Flood Control Act of 1960 to allow improvement of existing public roads for access to Federal projects and to allow construction of relocated roads to present day standards rather than replacement in kind (76 Stat. 1196, 33 U.S.C. 701r-1). (Amended by Section 13, Pub. Law 93-251)

25-70. 16 October 1963, Pub. Law 88-140-Extension of Right to Water Supply Storage. Extended non-Federal right to use reservoir water supply storage to the physical life of the project. This removed an uncertainty as to the continued availability of the storage space after the 50-year maximum period previously allowed in contracts (77 Stat. 249; 43 U.S.C. 390-c-e).

25-71. 7 November 1963, Pub. Law 88-172-CERC Established. Section 1 abolished the Beach Erosion Board and established the Coastal Engineering Research Center (77 Stat. 304, 33 U.S.C. 426-1nt). BEB Functions Transferred. Section 3 transferred the review functions of the Beach Erosion Board to BERH (77 Stat. 305, 33 U.S.C. 4263).

25-72. 3 September 1964, Pub. Law 88-578-Land and Water Conservation Fund Act of 1965. Established a fund from which Congress can make appropriations for outdoor recreation. The fund derives revenue from entrance and user fees, sale of surplus Federal property, and the Federal motorboat fuel tax. Entrance and user fees at reservoirs were made possible by Section 2 (a) which deleted the words "without charge" from Section 4 of the 1944 Flood Control Act as amended (78 Stat. 897, 16 U.S.C. 4601-4). NOTE: Section amended and restated by Section 101(1), Pub. Law 94-422.

25-73. 9 July 1965, Pub. Law 89-72-Federal Water Project Recreation Act-Uniform Policies. Required consideration of opportunities for outdoor recreation and fish and wildlife enhancement in planning water resources projects. Recreational use of the project will be coordinated with other existing and planned Federal, State, or local recreational developments. Non-Federal bodies will be encouraged to operate and maintain the project recreational and fish and wildlife enhancement facilities. If non-Federal bodies agree in writing to

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administer the facilities at their expense and to pay one-half the separable first cost, the recreation and fish and wildlife benefits shall be included in the project benefits and project cost allocated to recreation and fish and wildlife. Fees may be charged by the non-Federal interests to repay their costs. If non-Federal bodies do not so agree, no facilities for recreation and fish and wildlife may be provided except those justified to serve other purposes or as needed for public health and safety. However, project land may be acquired to preserve the recreational potential. If within 10 years after initial project operation there is no local agreement the land may be used for other purposes or sold (79 Stat. 213, 16 U.S.C. 460-1-12). (Amended by Section 77 Pub. Law 93-251)

25-74. 22 July 1965, Pub. Law 89-80 (Amended by 94-112)-Water Resources Planning Act-Water Resources Council Established.
Established a Water Resources Council. The Act establishes river basin commissions and provides for financial assistance to the States (79 Stat. 244, 42 U.S.C. 1962).

25-75. 27 October 1965, Pub. Law 89-298-River and Harbor and Flood Control Act Northeastern United States Water Study. Section 101 authorized the Chief of Engineers to prepare plans to meet long-range water needs in the northeastern U.S.
Administrative Authority. Section 201 permits the Secretary of the Army to administratively authorize water resources development projects where the estimated Federal cost is less than \$10 million. Approval by Public Works Committees is required prior to appropriation of funds (79 Stat. 1073, 42 U.S.C. 1962d-5). NOTE: Monetary limit increased to \$15 million by Section 131, Pub. Law 94-587.

Work for Other Agencies. Section 219 authorizes accepting orders from other Federal agencies for work or services.

Aquatic Plant Control. Section 302 extended the program nationwide (79 Stat. 1093, 33 U.S.C. 610).

Relocation of Government Facilities. Section 309 amends Section 111 of the R&H Act of 1958 to define further the Federal policy on relocation of structures or facilities owned by an agency of government and used in a governmental function (79 Stat. 1094, 33 U.S.C. 633).

25-76. 20 June 1966, Pub. Law 89-457. Permits leasing of public lands to States and political subdivisions for up to 25 years.

25-77. 4 July 1966, Pub. Law 89-487-Freedom of Information Act. Provided guidelines for public availability of records of Federal Agencies. Pub. Law 90-23, approved 5 June 1967, codified the provisions of Pub. Law 89-487 (80 Stat. 250 and 81 Stat. 54, 5 U.S.C. 552). Amended by Pub. Law 93-502.

25-78. 15 October 1966, Pub. Law 89-670-The Department of Transportation Act. DOT Established. Established the Department of Transportation (80 Stat. 931, 49 U.S.C. 1651nt).
Navigation Benefits Defined. Section 7 (a) stated that standards and criteria for economic evaluation of water resource projects shall be developed by the Water Resources Council, defined "primary direct navigation benefits," and expands the Council to include the Secretary of Transportation on matters pertaining to navigation features of water resource projects.

Transferred Corps Activities. Corps activities transferred to Department of Transportation included:

1. Regulation of the location of vessels at anchor.
2. Prescribing drawbridge operating regulations.
3. Determining and ordering the alteration of obstructive bridges (Truman-Hobbs).
4. Review and determination of the reasonableness of tolls charged for crossing bridges.
5. Administration of laws relating to prevention of pollution of the high seas by oil (Oil Pollution Act, 1961).
6. Control of the location and clearances of bridges and causeways in the navigable waters (80 Stat. 941, 49 U.S.C. 1656).

25-79. 1 August 1968, Pub. Law 90-448-Flood Insurance. Title XIII authorized a flood insurance program and provided means for necessary coordination between agencies and States as required for studies pertaining to land management, zoning or other appropriate arrangements to carry out such authority (82 Stat. 572, 42 U.S.C. 4001).

25-80. 13 August 1968, Pub. Law 90-483-River and Harbor and Flood Control Act of 1968-Mitigation of Shore Damages. Section 111 authorized investigation and construction of projects to prevent or mitigate shore damages resulting from Federal navigation works (limited to \$1 million per project) (82 Stat. 735, 33 U.S.C. 426i).
Excess Depths Maintenance. Section 117 authorized use of Civil Works funds for maintenance of excess depths required and constructed for defense purposes where the project also serves essential needs of general commerce (82 Stat. 737, 33 U.S.C. 562a).
User Charges. Section 210 restricted (after 31 March 1970) collection of entrance fees at Corps lakes and reservoirs to users of highly developed facilities requiring continuous presence of personnel (82 Stat. 746, 16 U.S.C. 4600d-3).
Reimbursement for Non-Federal Expenditures. Section 215 authorized reimbursement for advance work performed by non-Federal public bodies after authorization of water resource development projects.

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Reimbursement may not exceed \$1 million for any single project (82 Stat. 747, 42 U.S.C. 1962d-5a).

25-81. 2 October 1968, Pub. Law 90-542-Wild and Scenic Rivers Act-Selection of Wild Rivers. Section 3 listed eight rivers as the initial components of the national wild and scenic rivers system (82 Stat. 907, 16 U.S.C. 1274).

Potential Rivers. Section 5 listed 27 rivers as potential additions to the system. Section 5 (d) required that plans for water resource development consider setting aside certain streams as wild, scenic, or recreational rivers as an alternative to other uses (82 Stat. 910, 16 U.S.C. 1276).

25-82. 2 October 1968, Pub. Law 90-543-National Trails System Act. Trails. Provided for a national system of trails and designates the Appalachian and Pacific Crest Trails as the initial components of the system (82 Stat. 919, 16 U.S.C. 1241).

25-83. 16 October 1968, Pub. Law 90-577-Intergovernmental Cooperation Act of 1968. Provides for cooperation and coordination of activities among levels of government, improved administration of programs for technical services to states and local governments, intergovernmental coordination on policy and administration of development assistance programs within urban areas, and periodic congressional review of such grants-in-aid programs (82 Stat. 1098; 42 U.S.C. 4201).

25-84. 24 December 1969-Pub. Law 91-152-National Flood Insurance Act Amended. Extended insurance to mud slides, and date for local assurances to 31 December 1971 (83 Stat. 397, 42 U.S.C. 4121).

25-85. 1 January 1970, Pub. Law 91-190-National Environmental Policy Act. Section 101 established a broad Federal Policy on Environmental Quality (83 Stat. 852, 42 U.S.C. 4331).

Agency Requirements. Section 102 directed that policies, regulations, and public laws, will be interpreted and administered to the fullest extent possible in accordance with the policies of the Act, and imposes general and specific requirements on all Federal agencies (83 Stat. 853, 42 U.S.C. 4332).

Five Point Statement. Section 102 (2) (C) required a five-point Environmental Impact Statement (EIS) on proposed Federal actions affecting the environment (83 Stat. 853, 42 U.S.C. 4332). NOTE: Section 102(2)(D), added by Act of August 9, 1975, describes statement requirements for any major Federal action funded under a program of grants to states.

CEQ Established. Section 202 established the Council on Environmental Quality (83 Stat. 854, 42 U.S.C. 4341). The duties

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and functions of the Council are outlined under Section 203, as amended by Pub. Law 94-52 (83 Stat. 855, 42 U.S.C. 4343).

25-86. 3 April 1970, Pub. Law 91-224-Water Quality Improvement Act of 1970 and Environmental Quality Improvement Act of 1970.

CEQ Staff. The Office of Environmental Quality, which provides staff for the Council on Environmental Quality (see Pub. Law 91-190), was established by Title II of this Act (84 Stat. 114, 42 U.S.C. 4371).

25-87. 31 December 1970, Pub. Law 91-611-River and Harbor and Flood Control Act of 1970.

Navigation Project Maintenance. Section 103 provided for Federal operation and maintenance of the general navigation features of small-boat harbor projects authorized during calendar year 1970 (84 Stat. 1819, 33 U.S.C. 426-2nt). Amended by Sec. 6, 1974 Water Resources Development Act (Pub. Law 93-251).

Land Acquisition Compensation Defined. Section 111 defined compensation for acquisition of real property taken in connection with any improvement of rivers, canals, or waterways of the United States (84 Stat. 1821, 33 U.S.C. 595a).

Section 112: Increases the cost of small navigation and small beach erosion control projects from \$500,000 to \$1,000,000. The annual authorization limit is also raised in each case to \$25,000,000 (84 Stat. 1821).

Project Cost Sharing for Charter Fishing Craft. Section 119 provided that charter fishing craft shall be considered as commercial vessels for the purpose of determining cost sharing in small-boat navigation projects (84 Stat. 1822, 33 U.S.C. 577a).

Economic, Social, Environmental Effects. Section 122 provided for submission and promulgation of guidelines, not later than 1 July 1972, for considering possible adverse economic, social, and environmental effects of proposed projects.

Disposal Area Criteria. Section 123 authorized construction, operation, and maintenance of contained spoil disposal areas, subject to specific conditions of coordination with other agencies, local cooperation and applicability with water quality standards (84 Stat. 1823, 33 U.S.C. 1165a).

Hurricane Protection Cost Sharing. Section 208 authorized discretionary modifications in Federal participation in cost sharing for hurricane protection projects (84 Stat. 1829, 33 U.S.C. 426e).

Planning "Objectives". Section 209 expressed the intent of Congress that the objectives of enhancing regional economic development, the quality of the total environment, including its protection and improvement, the well-being of the people, and the national economic development are the objectives to be included in Federally financed

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water resource projects (84 Stat. 1829, 42 U.S.C. 1962-2).

Completed Project Review. Section 216 authorized review and report to Congress of the operation of completed projects when found advisable due to significantly changed physical or economic conditions.

Written Agreement. Section 221 provides that the construction of any water resources project by the Corps shall not be commenced until each non-Federal interest has entered into a written agreement to furnish its required cooperation for the project (84 Stat. 1831, 42 U.S.C. 1962d-5b)

Citation Authority. Section 234 provides that persons designated by the Chief of Engineers shall have authority to issue a citation for violations of regulations and rules of the Secretary of the Army, published in the Code of Federal Regulations.

25-88. 31 December 1970, Pub. Law 91-604, Clean Air Act Amendments. Amended the Clean Air Act of 1963 (PL 88-206).

Control of Pollution from Federal Facilities. Section 118 specifies that any Federal facility, or activity which may result in the discharge of air pollutants, shall comply with Federal, State, interstate, and local requirements respecting control and abatement of air pollution.

Policy Review. Section 309 calls for the Administrator, Environmental Protection Agency to review and comment upon the environmental impact of (1) legislation proposed by any Federal agency (2) newly authorized Federal projects for construction and any major agency action (84 Stat. 1709, 42 U.S.C. 1857h-7).

25-89. 2 January 1971, Pub. Law 91-646 Uniform Relocations Assistance and Real Property Acquisition Policies Act of 1970.

Section 201 established a uniform policy for the fair and equitable treatment of persons displaced as a result of Federal and Federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole (84 Stat. 1895, 42 U.S.C. 462).

Displacement Payments. Section 202 outlined the moving and related expense payment for persons displaced by Federal programs and projects (84 Stat. 1895, 42 U.S.C. 4622). NOTE: Section 210 of the bill made the same benefits available to persons displaced by programs and projects of State agencies with Federal financial assistance.

25-90. 23 December 1971, Pub. Law 92-222 River Basin Monetary Authorization Act of 1971. Section 4 clarifies that Section 221 of Pub. Law 91-611 does not apply to storage for future water supply.

25-91. 10 July 1972, Pub. Law 92-340-Ports and Waterways Act of 1972. Title I provides the Coast Guard with authority for establishment of vessel traffic control systems in congested or hazardous ports and waterways. (Other than the Panama Canal) (86 Stat. 424, 33 U.S.C. 1221). (Amended by Pub. Law 95-474)

25-92. 11 July 1972, Pub. Law 92-347-Golden Eagle Passbook and Special Recreation User Fees. Each Federal agency developing, administering, or providing specialized sites, facilities, equipment, or services related to outdoor recreation shall provide for the collection of special recreation use fees for the use of sites, facilities, equipment, or services furnished at Federal expense (86 Stat. 459, 16 U.S.C. 460).

25-93. 8 August 1972, Pub. Law 92-367, National Dam Safety Act. Authorized a national program of inspection of "dams" for the purpose of protecting human life and property. Calls for an inventory of all dams located in the U.S. and recommendations for a comprehensive national program of dam inspection and regulation (86 Stat. 506, 33 U.S.C. 467).

25-94. 13 October 1972, Pub. Law 92-487-Federal Loans to Public Agencies for Constructing Local Water Supply Works. The Act of July 4, 1955, as amended, relating to Federal loans for the construction of irrigation distribution systems, is further amended to include the delivery and distribution of municipal and industrial water as an authorized purpose of the program. Repayment of loans for municipal and industrial water shall include interest (86 Stat. 804, 43 U.S.C. 421c).

25-95. 18 October 1972, Pub. Law 92-500-The Federal Water Pollution Control Act Amendments of 1972. Section 101 established a national goal of eliminating all pollutant discharges into U.S. waters by 1985 and an interim goal of making the waters safe for fish, shellfish, wildlife and people by July 1, 1983 (Amended by Pub. Law 95-217).

Reservoir Storage for Streamflow Augmentation. Section 102(b) provides that in the planning of any Corps reservoir consideration shall be given to inclusion of storage for regulation of streamflow. Such storage is not to be provided as a substitute for adequate treatment or other methods of controlling waste at the source. The need for, value of, and the impact of storage for the purpose of water quality control are determined by the Administrator of the Environmental Protection Agency (EPA). The need for and value of storage for regulation of streamflow for other purposes are to be determined by the Corps. The costs of storage are to be non-

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reimbursable if the benefits are widespread or national in scope. The Refuse Act Permit Program. Section 402 and 403 establish a permit program in EPA which is to regulate (or prohibit) the discharge of pollutants into the waters of the United States, to include the territorial sea and which is to be in accord with the EPA-established effluent limitations previously mentioned. Section 402 replaces the Corps Refuse Act Permit Program under the Act of 1899 without repealing the Act. All permits issued under the Corps program are considered permits under the new EPA program. Permits for Dredged or Fill Material. Section 404 authorizes a separate permit program for the disposal of dredged or fill material in the Nation's waters, to be administered by the Secretary of the Army, acting through the Chief of Engineers. Under the program, permits are to be issued, after notice and opportunity for public hearings, for disposal of such material at specified sites. These sites are to be selected in compliance with guidelines developed by EPA in conjunction with the Secretary of the Army. EPA is authorized to forbid or restrict the use of specified areas whenever it determines that disposal of material at a specific site would have an unacceptable adverse effect on municipal water supplies, shellfish, and fishery areas, or recreational activities. Authority to Maintain Navigation. Section 511(a) provides that nothing in the Act is to be considered as affecting or impairing the authority of the Secretary of the Army to maintain navigation (86 Stat. 816, 33 U.S.C. 1371). NOTE: See (Pub. Law 95-217) for amendments.

25-96. 21 October 1972, Pub. Law 92-516-Federal Environmental Pesticide Control Act. This law revises the Federal Insecticide, Fungicide, and Rodenticide Act. It provides for more complete regulation of pesticides to include regulation, restrictions on use, actions within a single state, and strengthened enforcement (86 Stat. 973, 7 U.S.C. 136).

25-97. 23 October 1972, Pub. Law 92-532-Marine Protection, Research and Sanctuaries Act of 1972. Bans the unregulated dumping of materials into the oceans, estuaries and Great Lakes, (86 Stat. 1052, 33 U.S.C. 1401)

Policy Statements. Section 2 states that unregulated ocean dumping is injurious to man and the environment and must be strictly controlled.

Prohibited Acts. Section 101 exercises regulatory control, over any materials which are transported from the United States which would be dumped in any ocean waters; over any materials which would be dumped in the territorial sea or the contiguous zone of the United States; and over any materials transported from any location outside

the United States which would be dumped in ocean waters by any instrumentality of the United States government. NOTE: Amended and restated by Act of March 22, 1974 (Pub. Law 93-254).

Environmental Protection Agency Permits. Section 102 provides that the Administrator of the Environmental Protection Agency may issue permits for the dumping of material (not to include dredged material) if he determines that such dumping would not unreasonably degrade or endanger human health, welfare or amenities, or the marine environment, ecological systems, or economic potentialities. The Administrator is permitted to establish and issue various categories of permits including general permits (see Section 104), and to designate dump and no-dump sites or times after consultation with the Secretary of the Army.

Corps of Engineers Permits. Section 103 provides the Secretary of the Army with permit authority over the transportation of dredged material for the purpose of dumping in ocean waters. The Secretary may issue such permits where he determines that such dumping will not unreasonably degrade or endanger human health, welfare or amenities, or the marine environment, ecological systems, or economic potentialities.

Permit Conditions. Section 104 requires that permits granted by either the Administrator or the Secretary (Army) shall designate the amount, type and location of the material to be dumped, and the length of time for the dumping, and, after consultation with the Coast Guard, provide for any special monitoring and surveillance provisions.

Marine Sanctuaries. Title III permits the Secretary of Commerce, after appropriate consultation with affected State and Federal agencies, and public hearings, to designate certain areas of ocean waters lying as far seaward as the edge of the Outer Continental Shelf and areas of the waters of the Great Lakes as Marine Sanctuaries which he determines necessary to preserve, restore, such areas for conservation, recreation, ecology or esthetics. He is permitted, after consultation with other interested Federal agencies, to issue regulations controlling activities within these sanctuaries. No permit for activities within such sanctuaries shall be deemed valid unless the Secretary of Commerce shall certify that the permitted activity is consistent with the purpose of Title III and carried out in accordance with the regulations promulgated by him.

25-98. 27 October 1972, Pub. Law 92-583-Coastal Zone Management Act of 1972. National Policy. Section 302 declares a national interest in the effective management of the coastal zone, that present planning and regulation of land and water uses is inadequate, and

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that primary responsibility rests with State and local governments with Federal assistance. (86 Stat. 1280, 16 U.S.C. 1451).

Federal-State Coordination. Section 307 requires all Federal agencies with activities directly affecting the coastal zone, or with development projects within that zone, to assure that those activities or projects are consistent with the State program. Applicants for Federal licenses shall provide to the agency and state certification that the proposed activity complies with the state's approved management program. No Federal license or permit shall be granted by the agency without the state's concurrence or unless the state has failed to act within six months (amended to three months by Pub. Law 95-372) after receiving the applicant's certification. NOTE: Section amended by Sec. 6, Act of July 26, 1976 and Sec. 504 of Act of September 18, 1978.

25-99. 1 August 1973, Pub. Law 93-81-Collection of Fees for Use of Certain Federal Outdoor Recreation Facilities. Amends Section 4 of the Land and Water Conservation Fund Act of 1965 (P.L. 88-578). Requires each Federal agency to collect special recreation use fees for the use of sites, facilities, equipment or services furnished at Federal expense. NOTE: Amended and restated by Sec 1 of Pub. Law 93-303. (87 Stat. 178).

25-100. 28 December 1973, Pub. Law 93-205-Conservation, Protection, and Propagation of Endangered Species. Repeals the Endangered Species Conservation Act of 1969. Directs all Federal Departments/Agencies to carry out programs to conserve endangered and threatened species, in consultation with the Secretary of the Interior (or Commerce in appropriate situations), and to preserve the habitat of such species. (87 Stat. 884) NOTE: Section 7 of the Endangered Species Act Amendments of 1978 (Pub. Law 95-632) authorizes procedures by which a Federal agency, state Governor, or license applicant may apply for an exemption to the Act.

25-101. 31 December 1973, Pub. Law 93-234-Flood Disaster Protection Act of 1973. This law increases limits of coverage authorized under the national flood insurance program; provides for accelerated identification of flood risk zones; requires States or local communities, as a condition of future Federal financial assistance, to participate in the flood insurance program; requires the purchase of flood insurance by property owners who are being Federally assisted in the acquisition/improvement of land in flood hazard areas; extends the flood insurance program to cover losses from the erosion and undermining of shorelines by waves or currents (87 Stat. 975).

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25-102. 7 March 1974, Pub. Law 93-251-Water Resources Development Act of 1974. Project Authorization. Section 1 establishes two phase authorization procedure for certain projects.

Maintenance. Section 6 states that the cost of operation and maintenance of the general navigation features of small boat harbor projects shall be borne by the United States.

Hold and Save. Section 9 provides that the requirement that non-Federal interests hold and save the United States free from damages shall not include damages due to the fault or negligence of the United States or its contractors.

Project Deauthorization. Section 12 establishes a procedure for deauthorization of projects that have not received any Congressional appropriations within 8 years (33 U.S.C. 579).

Public Road Replacement. Section 13 establishes criteria for design of replacement roads (33 U.S.C. 701r-1).

Comprehensive Planning Cooperation. Section 22 provides authority for cooperating with any state in preparation of comprehensive plans for water resources development, utilization, and conservation.

Snagging and Clearing Projects. Section 26 raises the project cost limitation to \$250,000 and annual program funding limit to \$5 million.

Emergency Bank Protection Projects. Section 27 raises the project cost limitation to \$250,000 and program fiscal funding limit to \$10 million per year. Project purpose was extended to cover construction, repair, restoration, and modification of emergency streambank and shoreline protection works. Eligibility definition was extended to include churches, hospitals, schools, and similar non-profit public services.

Streambank Erosion Control Evaluation and Demonstration Act of 1974. Section 32 establishes a national streambank erosion prevention and control demonstration program. Authorized conduct of the program for 5 fiscal years with total Federal appropriations not to exceed \$25 million.

Local Cash Contributions. Section 40 provides general authority to permit local interests to make cash contributions in annual payments as construction proceeds, rather than in a lump sum prior to initiation of construction.

Shoreline Erosion Control Demonstration Act of 1974. Section 54 authorizes a program to develop, demonstrate, and disseminate information about low cost means to prevent and control shoreline erosion. Conduct of the program authorized for 5 fiscal years with total appropriations not to exceed \$8 million. Provides for establishment of a Shoreline Erosion Advisory Panel.

Technical and Engineering Assistance. Section 55 authorizes technical and engineering assistance to non-Federal public interests in developing structural and nonstructural methods of preventing

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damages attributable to shore and streambank erosion.

Small Flood Control Projects. Section 61 raises the limit per project from \$1 million to \$2 million only in areas that have been designated disaster areas within preceding 5 years. The program funding limit was increased to \$30 million annually. NOTE: Section 133 of Pub. Law 94-587 further increases the limit per project to \$3 million. The limit for a project outside of a major disaster area is increased from \$1 million to \$2 million at any single location.

Water Quality Storage. Section 65 permits conversion of water quality storage in authorized reservoirs to another use when EPA determines such storage is unnecessary.

Non-structural Measures for Flood Protection. Section 73 requires that consideration be given to non-structural alternatives for flood damage prevention or reduction. Where such measures are recommended, the non-Federal participation shall be comparable to that for structural protection, but not exceed 20 percent of the project costs (33 U.S.C. 701b-11).

Visitor Protection. Section 75 authorizes study of the need for a means of providing visitor protection services at Corps projects.

Fish and Wildlife Enhancement. Section 77 amends the Federal Water Project Recreation Act to increase the Federal share of costs for fish and wildlife enhancement to 75 percent.

Interest and Discount Rates. Section 80 directs the interest rate for discounting future benefits and computing costs be based on Water Resources Council formula published 24 Dec 1968. It also calls for study and report by the President on principles and standards, discount rates, and cost sharing.

Emergency Water Supplies. Section 82 modified Section 5 of 1941 FCA, as amended, to authorize providing emergency supplies of clean drinking water when contaminated supplies are a threat to public health and welfare of locality.

Utilization of Regional or Municipal Sewage Treatment Plant.

Section 107 authorizes Corps participation in construction cost of regional sewage treatment plants for treating sewage resulting from the operation of recreation and other facilities at Corps projects. (88 Stat. 12)

25-103. 22 March 1974, Pub. Law 93-254 - Implementation of the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters. Amends the "Ocean Dumping" Act to make it fully consonant with the treaty responsibilities of the U.S. under the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matters, particularly as to the regulation of U.S. vessels carrying or dumping foreign source waste (88 Stat. 50).

25-104. 24 May 1974, Pub. Law 93-291-Preservation of Historical and Archeological Data. The Secretary of the Interior shall coordinate

all Federal survey and recovery activities authorized under this expansion of the 1960 Act (Pub. Law 86-523). The Federal construction agency may expend up to 1 percent of project funds with such funds considered nonreimbursable project costs. (88 Stat. 174).

25-105. 7 June 1974 Pub. Law 93-303-Recreation Use Fees. Amends Section 4 of the Land and Water Conservation Fund Act of 1965 (Pub. Law 88-578), as amended, to establish less restricted criteria under which Federal agencies may charge fees for the use of campgrounds developed and operated at Federal areas under their control. (88 Stat. 192).

25-106. 22 August 1974, Pub. Law 93-383-Housing and Community Development Act of 1974. Title I establishes within HUD new community development program block grants and loans to replace, several existing grant/loan programs. Section 816 amends the National Flood Insurance Act to provide that any community that has made adequate progress on the construction of a flood protection system meeting the 100-year protection standard, as determined by HUD, shall be eligible for flood insurance at subsidy premium rates if otherwise eligible under the Act. (88 Stat. 633).

25-107. 21 November 1974, Pub. Law 93-502-Freedom of Information Act Amendments. Provided, among other requirements that: the decision to release or not release records shall be made "within ten days" (as defined therein). (88 Stat. 1561) Modified by Pub. Law 94-409 to require that meetings of Government agencies shall be open to the public.

25-108. 3 January 1975, Pub. Law 93-627-Deepwater Port Act of 1974. Provides authority for Secretary of Transportation to issue a license for the ownership, construction and operation of a deepwater port.

25-109. 5 May 1976, Pub. Law 94-280 - Federal-Aid Highway Act of 1976. Section 132 amends Chapter I of Title 23, U.S.C. 156, to authorize construction of a public highway or bridge across a Federal public works project where costs and requirements have changed substantially. A National Transportation Policy Study Commission is established by Section 154. (90 Stat. 425).

25-110. 26 July 1976, Pub. Law 94-370 - Coastal Zone Management Act Amendments of 1976.

Sections 4 and 5: Expanded the requirements for and types of work accomplished under the Management Program Development (Section 305) and administrative (Section 306) grants.

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Section 7: Directs the Secretary of Commerce to administer and coordinate a coastal energy impact program to assist coastal states in their planning and management of energy developments in their coastal waters.

Section 8: Encourages the coastal states to coordinate with each other and to develop joint plans for the sake of uniformity. It also gives Congressional consent to agreements and compacts developed between two or more states.

Section 16: Directs the Secretary of Commerce to undertake a comprehensive review of the molluscan shellfish industry and promulgation of regulations for the national shellfish safety program by the Secretary of Health, Education, and Welfare. (90 Stat. 1013-1033).

25-111. 20 October 1976, Pub. Law 94-565, Entitlement Lands. This act provide for payments to local governments by the Secretary of the Interior based on the amount of entitlement lands within the local boundaries. Entitlement lands include reservoir areas of water resource projects.

25-112. 22 October 1976, Pub. Law 94-587 - Water Resources Development Act of 1976.

Phase I studies. Section 101(c) authorizes, upon transmittal of the Chief's recommendation to OSA, the Chief of Engineers to begin the Phase I design memorandum on a project if the Chief finds and transmits to the appropriate committees of the House and Senate that the project is without substantial controversy and justifies further investigation. (90 Stat. 2917-2948)

Law Enforcement. Section 120 authorizes the Corps to contract with States or their subdivisions to provide for increased law enforcement during periods of peak visitation.

Administrative Authority. Section 131 raises the limit on projects authorized under Section 201 of Flood Control Act of 1965 from \$10,000,000 to \$15,000,000.

Continuing Authorities. Section 133 raises the monetary limit for construction of project at a single location authorized under Section 107 of the River and Harbor Act of 1960 raised from \$1,000,000 to \$2,000,000. Raises the limit for a project (at a single location) authorized under Section 205 of the Flood Control Act of 1948 from \$1,000,000 to \$2,000,000. Limit for projects protecting declared major disaster areas increased from \$2,000,000 to \$3,000,000 at a single location.

Regional Benefits. Section 140 authorizes the inclusion of regional economic benefits in the economic analysis of any authorized interstate project which has been partially constructed or is to be constructed at the time of enactment (33 U.S.C. 547a).

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Sand fill. Section 145 authorizes the placement of sand obtained from dredging operations on adjacent beaches if requested by the interested State government and in the public interest. Increased costs are paid by local interests.

Disposal Areas. Section 148 directs the Corps to utilize those management practices which will extend the life of dredged material disposal areas thus keeping the need for new sites to a minimum (33 U.S.C. 419a).

Wetlands. Section 150 authorizes the Corps to plan and establish new wetlands utilizing dredged material from any water resources development project.

Permits. Section 154 removes Section 10 permit requirement on wharves and piers in interstate bodies of water which are considered to be navigable based on historical data of interstate commerce.

Periodic Nourishment. Section 156 authorizes the Corps to extend Federal aid in periodic beach nourishment up to 15 years.

Hydroelectric Power. Section 167 authorizes the Chief of Engineers to study efficient methods of using hydroelectric power resources at Corps' water resource development projects.

Comprehensive Planning Cooperation. Section 168: Increases the authorized funding in Section 22 of WRDA of 1974 from \$2,000,000 to \$4,000,000.

Drift Removal. Section 202 establishes the drift and debris removal program. The Corps may undertake a project costing less than \$400,000 without Congressional approval. Cost sharing is 2/3 Federal and 1/3 non-Federal. (90 Stat. 2917-2948).

Alaska Hydropower Fund. Section 203 establishes the Alaska Hydroelectric Power Fund (initial sum deposited \$25,000,000) for use by the Secretary of the Army to study and develop hydro-power facilities in Alaska.

25-113. 20 June 1977, Pub. Law 95-51 - Disaster Relief Act of 1974 appropriations. Amends Sec. 5, Act of 18 August 1941 (which was amended by Public Law 84-99) to allow the Corps to provide emergency supplies of water and construct wells in drought areas. (91 Stat. 233-234).

25-114. 3 August 1977, Pub. Law 95-87 - Surface Mining Control and Reclamation Act of 1977. Provides for the cooperation between the Secretary of the Interior and the States with respect to the regulation of surface coal mining operations, and the acquisition and reclamation of abandoned mines.

Section 515: The Secretary of the Interior with concurrence of the Chief of Engineers is to establish standards and criteria regarding new and existing coal mine waste piles when used as dams or embankments. (91 Stat. 445-532).

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Section 702: Allows secretary obtain assistance from other Federal agencies.

25-115. 12 October 1977, Pub. Law 95-128.

Title VII: Extends the time and fiscal constraints of the National Flood Insurance Program. In addition; procedures are established for the purchase and/or designation of flood prone properties. (91 Stat. 1111-1150).

25-116. 27 October 1977, Pub. Law 95-217 - Clean Water Act of 1977. Amends Federal Water Pollution Control Act and extends the appropriations authorization.

Section 51: Requires EPA to enter into written agreements with Secretaries of Agriculture, Army, and Interior to provide maximum utilization of the laws and programs to maintain water quality.

Section 60: Provides for Federal compliance with all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions in the same manner and extent as other entities.

Section 67: Provides for the processing of permits for dredged or fill material through the Secretary of the Army acting through the Chief of Engineers and defines requirements to meet in the construction of Federal projects. (91 Stat. 1566).

25-117. 22 October 1977, Pub. Law 95-220 - Federal Program Information Act. Authorizes the preparation and publishing of the catalog of Federal Assistance Programs. (91 Stat. 1617).

25-118. 26 April 1978, Pub. Law 95-269. Amends Acts of 11 August 1888 and 2 March 1919. Provides conditions under which dredging work is performed by private interest and the Federal dredge fleet. Authorizes a technologically modern minimum Federal dredging fleet. (91 Stat. 218-219).

25-119. 18 September 1978, Pub. Law 95-372 - Outer Continental Shelf Lands Act Amendments of 1978. Establishes policy for the management of oil and natural gas in the Outer Continental Shelf and to protect the marine and coastal environment, in part, by creating an oil spill liability fund. Section 504 amends Sec. 307 of the Coastal Zone Management Act. The revised section requires that a state provide to the Secretary of Commerce a status report if it has not concurred or objected to a proposed activity within 3 months after having received the applicants certification. (92 Stat. 629).

25-120. 19 October 1978, Pub. Law 95-474 - Port and Tanker Safety Act of 1978. Vests responsibility for establishment of fairways in the Coast Guard.

25-121. 21 October 1978, Pub. Law 95-502 - Internal Revenue Code of 1954, Amendment.

Section 202: Amends the Internal Revenue Code (new Sec 4042 added) to impose a tax on fuel used by vessels in commercial waterway transportation. Deep-draft ocean-going vessels and passenger vessels, among others, are exempted.

Section 203: Establishes an Inland Waterways Trust Fund for revenue received from the tax on fuel.

Section 204: Provides that amounts in the Trust Fund shall be available, as provided by appropriation Acts, for construction and rehabilitation for navigation on inland and intracoastal waterways.

Section 205: Directs the secretary's Department of Transportation and Commerce to study inland waterway user taxes and charges in consultation with other agencies.

Section 206: Lists inland and intracoastal waterways relevant to Section 4042 of the Internal Revenue Code and the Act. (92 Stat. 1693-1703).

25-122. 10 November 1978, Pub. Law 95-632 - Endangered Species Act Amendments of 1978. Amends the 1973 Act (Pub. Law 93-205) to establish an Endangered Species Interagency Committee to review proposed actions to determine whether exemptions from certain requirements of the Act should be granted. Prescribes a consultation process between Federal agencies and the Secretary of the Interior, Secretary of Commerce, or Secretary of Agriculture, as appropriate, for carrying out programs for the conservation of endangered and threatened species. Directs agencies to conduct a biological assessment to identify endangered or threatened species which may be present. (92 Stat. 3752).

CHAPTER 26

EXECUTIVE ORDERS PERTINENT TO THE WATER RESOURCES
PROGRAM OF THE CORPS OF ENGINEERS

26-1. Executive Order 10913, 18 January 1961, Amending Executive Order No. 10584 Prescribing Rules and Regulations Relating to the Administration of the Watershed Protection and Flood Prevention Act. (P.L. 566, 84th Congress, as amended). Sections 3 and 4 provide for notification and coordination of agencies in the use, conservation, and development of water and related land resources.

26-2. Executive Order 11017, 27 April 1962, Providing for Coordination with Respect to Outdoor Recreation Resources and Establishing the Recreation Advisory Council. This order establishes the Recreation Advisory Council which shall provide policy advice to heads of Federal agencies, on matters affecting outdoor recreation resources, and facilitate coordinated efforts among the various Federal agencies.

26-3. Executive Order 11200, 2 March 1965, Providing for Establishing User Fees Pursuant to the Land and Water Conservation Fund Act of 1965. This order provides criteria for designating areas where entrance, admission and other recreation user fees will be charged. Section 5 prescribes the establishment of these fees.

26-4. Executive Order 11426, 31 August 1968, Federal and State Liaison and Cooperation. This order directs and outlines additional duties of the Director of the Office of Emergency Planning in his capacity as the President's liaison with the Governors of the States and Territories.

26-5. Executive Order 11472, 29 May 1969, Establishing the Environmental Quality Council and the Citizens Advisory Committee on Environmental Quality. This order established a council and committee to advise and assist the President with respect to environmental quality matters. (Amended by E.O. 12007, 22 Aug 77).

26-6. Executive Order 11514, 5 March 1970, Protection and Enhancement of Environmental Quality. Section 2 of the order outlines the responsibilities of Federal agencies in consonance with Title I of the National Environmental Policy Act of 1969. (Amended by E.O. 11991, 24 May 77).

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26-7. Executive Order 11574, 23 December 1970, Administration of Refuse Act Permit Program. This order authorizes the Secretary of the Army to issue and amend regulations, procedures and instructions for a permit program under Section 13 of the Refuse Act of March 3, 1899, to control the discharge of pollutants and other refuse matter into navigable waters, their tributaries, or upon their banks. The Council on Environmental Quality shall coordinate the regulations, policies and procedures of Federal agencies with respect of Refuse Act Program.

26-8. Executive Order 11592, 16 May 1971, Delegates Certain Authority of the President to the Director of the Office of Management and Budget. The Director of OMB is empowered to grant approvals authorized, or required to be granted by the President, by any provisions of the River and Harbor Act of 1970 and the Flood Control Act of 1970.

26-9. Executive Order 11593, 13 May 1971, Protection and Enhancement of the Cultural Environment. Section 2 of the order outlines the responsibilities of Federal agencies in consonance with The National Environmental Policy Act of 1969, The National Historic Preservation Act of 1966, The Historic Sites Act of 1935, and the Antiquities Act of 1906. Section 3 outlines specific responsibilities of the Secretary of the Interior including review and comment upon Federal agency procedures submitted under this order.

26-10. Executive Order 11643, 8 February 1972, Environmental Safeguards on Activities for Animal Damage Control on Federal Lands. This order states a Federal policy to restrict the use of chemical toxicants for mammal or bird damage control on any Federal lands or in any Federal control programs as authorized by law. Included are chemical toxicants which cause any secondary poisoning effects. (Amended by E.O. 11870, 18 Jul 75 and E.O. 11917, 28 May 76).

26-11. Executive Order 11644, 8 February 1972, Use of Off-Road Vehicles on the Public Lands. This order establishes a uniform Federal policy regarding the use of vehicles such as trail bikes, snowmobiles, dune-buggies and others, on public lands. Section 3 provides guidance for establishing zones of use for such vehicles. (Amended by E.O. 11989, 24 May 77).

26-12. Executive Order 11647, 8 February 1972, Federal Regional Councils. Section 1 of this order establishes a Federal Regional Council of grant making agencies for each of the ten Standard Federal Regions in order to better coordinate their services. Section 3 established

an Under-Secretaries Group for Regional Operations, composed of the Under-Secretaries of the agencies in the above councils, directed by the Office of Management and Budget. (See discussion below of E.O. 11731, and EO 11892.

26-13. Executive Order 11731, 23 July 1973, Amending Executive Order No. 11647 Relating to Federal Regional Councils. This order expanded the Council membership and broadened the mandate of the Federal Regional Councils to include the coordination of direct Federal program assistance to State and local governments as well as the grant assistance previously provided. (Amended by E.O. 11892, 31 December 1975).

26-14. Executive Order 11735, 3 August 1973, Assignment of Functions under Section 311 of the Federal Water Pollution Control Act, as amended. Delegates authority to the Administrator of the Environmental Protection Agency and the Secretary of the Department in which the Coast Guard is operating for determinations of threats due to discharge of oil or hazardous substances.

26-15. Executive Order 11747, 7 November 1973, Delegating Certain Authority of the President under the Water Resources Planning Act, as amended. Section 1 authorizes the Director of the Office of Management and Budget to approve rules, procedures, arrangement, and provisions relating to coordination of Federal planning assistance program and utilization of Federal agencies administering related programs. Section 2 designates and empowers the Chairman of the Water Resources Council to approve standards and procedures vested in the President by Section 103 of the Water Resources Planning Act.

26-16. Executive Order 11795, 11 July 1974, Delegating Disaster Relief Functions Pursuant to the Disaster Relief Act of 1974. Reserved to the President the authority to declare emergencies and major disasters.

26-17. Executive Order 11814, 11 October 1974, Activation of the Energy Resources Council. This order is in response to Section 108 of the Energy Reorganization Act of 1974 (P.L. 93-438). The Secretary of the Interior is designated as Chairman. Additional officials including the Secretary of Defense are members. Functions of the Council include development of a single national energy policy and program.

26-18. Executive Order 11821, 27 November 1974, Inflation Impact Statements. This order directs that major proposals for legislation, and for the promulgation of regulations or rules by any

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executive branch agency must be accompanied by a statement which certifies that the inflationary impact of the proposal has been evaluated.

26-19. Executive Order 11870, 18 July 1975, Environmental Safeguard on Activities for Animal Damage Control on Federal Lands. This order amends E.O. 11643 of the same title. Section 1 adds to the Federal policy, the assurance that where chemical toxicants are used pursuant to Section 3(b), only those combinations of toxicants and techniques will be used which best protect nontarget wildlife species and individuals. (Also see E.O. 11917, 28 May 76)

26-20. Executive Order 11892, 31 December 1975, Relating to Federal Regional Councils. This order amends E.O. 11647, of 8 February 1972, by including the Department of Commerce and the Federal Energy Administration (now Department of Energy) in the Regional Council System.

26-21. Executive Order 11917, 28 May 1976, Animal Damage Control on Federal Lands. This order further amends E.O. 11643 by adding that agency heads may authorize the use of sodium cyanide in Federal programs or on Federal lands, in accordance with regulations, and subject to all present restrictions and those prescribed hereafter by EPA.

26-22. Executive Order 11921, 11 June 1976, Adjusting Emergency Preparedness Assignments to Organizational and Functional Changes in Federal Departments and Agencies. This order amends E.O. 11490 of October 1969. The Corps or other Defense elements, under the guidance of the Department of Interior, will develop plans and programs to help meet emergency water requirements in watershed areas under their jurisdiction. In accordance with the Department of Transportation and other Federal agencies, emergency plans and procedures will be developed for: improvement, rehabilitation, operation and maintenance of Federally authorized river and harbor projects, locating and removing obstructions to navigation, and dredging to clear and straighten navigation channels. Plans and procedures will also be developed for management, control and allocation of water resources, including establishing priorities for water use during emergencies.

26-23. Executive Order 11954, 7 January 1977, Federal Property Review. Section 3 of this order directs the Administrator of General Services to conduct surveys, on a continuing basis, of real property holdings of Executive agencies; emphasis will be on identifying properties not utilized, or not being put to optimum use. (See E.O. 12030, 15 December 1978).

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26-24. Executive Order 11988, 24 May 1977, Flood Plain Management. This order outlines the responsibilities of Federal agencies in the role of flood plain management. Each agency shall evaluate the potential effects of actions on flood plains, and should not undertake actions which directly or indirectly induce growth in the floodplain, unless there is no practical alternative. Agency regulations and operating procedures for licenses and permits should include provisions for the evaluation and consideration of flood hazards. Agencies are required to prepare their procedures in consultation with the Water Resources Council, the Federal Insurance Administration, and the Council on Environmental Quality. Construction of structures and facilities on flood plains must incorporate flood proofing and other accepted flood protection measures. Agencies shall attach appropriate use restrictions to property proposed for lease, easement, right-of-way, or disposal to non-Federal public or private parties. This order revokes E.O. 11296, 10 August 1966.

26-25. Executive Order 11989, 24 May 1977, Off-Road Vehicles in Public Lands. Agency heads are authorized to close areas or trails, within their jurisdiction, to off-road vehicles which cause adverse effects to soil, vegetation, wildlife, wildlife habitat, culture or historic resources. Fire, military, emergency, and law enforcement vehicles are excluded, when used for emergency purposes. This order amends E.O. 11644, 8 February 1972.

26-26. Executive Order 11990, 24 May 1977, Protection of Wetlands. This order directs Federal agencies to provide leaderships in minimizing the destruction, loss or degradation of wetlands. Section 2 of this order states that, in furtherance of the National Environmental Policy Act of 1969, agencies shall avoid undertaking or assisting in new construction located in wetlands unless there is no practical alternative. Each agency will provide opportunity for early public review of plans and proposals for construction in wetlands, including those whose impact is not significant to require EIS preparation. Section 9 exempts assistance provided for emergency work, essential to protect lives, health, and property performed pursuant to Sections 305 and 306 of the Disaster Relief Act of 1974.

26-27. Executive Order 11991, 24 May 1977, Relating to Protection and Enhancement of Environmental Quality. Section 1 of this order amends Section 3(h) of E.O. 11514, by directing the Council of Environmental Quality to issue guidelines to Federal agencies for implementing procedural provisions of NEPA (1969). These regulations will include procedures for early EIS preparation and require impact statements to be concise, clear, and supported by

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evidence that agencies have made the necessary analyses. The Council will resolve conflicts between agencies, concerning the implementation of NEPA and Section 309 of Clean Air Act, as amended.

26-28. Executive Order 12007, 22 August 1977, Termination of Certain Advisory Committee. This order terminates several presidential advisory committees, including the Citizens Advisory Committee on Environmental Quality, which was established by E.O. 11472. This order also amends Section 4 of E.O. 11514 in reference to the Committee.

26-29. Executive Order 12030, 15 December 1977, Termination of the Federal Property Council. This order terminates the Federal Property Council established by E.O. 11724, of 25 June 1973, and amends E.O. 11954 of 7 January 1977. The Director of OMB is directed to review Federal real property policies and objectives of the Executive Branch. The Director will also review reports made by the Administrator of General Services, relating to the resolution of claims on, and uses for, Federal real property, as well as reports made pursuant to Section 3 of E.O. 11954.

26-30. Executive Order 12088, 13 October 1978, Federal Compliance with Pollution Control Standards. The head of each Executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control and abatement of environment pollution, with respect to Federal facilities and activities under control of the agency. Each agency head will consult with the Administrator of EPA, State, interstate, and local agencies concerning the best techniques and methods for pollution control and prevention. Each agency is directed to submit an annual environmental pollution control plan to the Director of OMB. Section 1-4 describes this plan. This order revokes E.O. 11752 of 17 December 1973.

26-31. Executive Order 12113, 4 January 1979, Independent Water Project Review. Federal agencies that prepare comprehensive regional or river basin plans, and formulate and evaluate Federal water and related land resources projects, will follow a current set of principles, standards and procedures established by the Water Resources Council. This Order directs the Council to ensure impartial technical reviews of preauthorization reports or proposals, and preconstruction plans for Federal and Federally assisted water and land resources projects and programs. Section 1-104 describes the technical review compliance requirements for reports, proposals or plans, and Section 1-106 describes information that the reports, etc., should include. Reports, proposals and

plans must be submitted to the Council prior to approval by Agency heads. This must occur 90 days prior to the scheduled submission to the Office of Management and Budget for authorization or funding requests. Plans or reports submitted to Congress must include a statement of advice from OMB. (Amended by E.O. 12141).

26-32. Executive Order 12114, 4 January 1979, Environmental Effects Abroad of Major Federal Actions. This order pertains to Federal agencies whose actions have significant effects on the environment outside of the United States, its territories and possessions. Agencies will establish a program for exchanging environmental information. This program will provide information to decision makers, facilitate cooperative use of information among Federal agencies, and facilitate environmental cooperation with foreign nations. The order directs agencies to establish procedures for preparing documents (EIS's, summary environmental analyses, etc.) in connection with Federal action abroad. Sections 2-3 and 2-4 describe the categories of these actions and the necessary appropriate documents. Actions exempt from this Order are described in Section 2-5. The Department of State and the Council on Environmental Quality will provide consultation on procedures for implementing this Order.

26-33. Executive Order 12141, 5 June 1979, Independent Water Project Review. Amends E.O. 12113 to provide that the results of the technical review shall be transmitted to the agency head within 60 days of the agency's submission of the report, proposal, or plan, provided that funds and other resources have been made available for the review.

CHAPTER 27

INTERAGENCY AGREEMENTS

27-1. Army-Interior

a. 16-17 October 1944, Missouri River Basin (S.D. 247, 78th Congress). Agreement on the coordination of plans and the responsibilities for development of main stream and tributaries in the Missouri River Basin.

b. 25 July 1947, Middle Rio Grande Project (H.D. 653, 81st Congress). A joint agreement on a unified plan for control of floods, irrigation, and use of water on the Middle Rio Grande Basin in New Mexico. Sets forth the works to be constructed by each agency in completing the unified plan. The comprehensive plan of the two agencies, in substantial accord with the joint agreement, was approved by the Congress in the Flood Control Act of 1948.

c. 11 April 1949, Columbia River Basin (H.D. 531 and 473, 81st Congress). Agreement between the Corps of Engineers and the Bureau of Reclamation on principles and responsibilities for the comprehensive plans of development in the Columbia River Basin. Also provides for agency construction responsibility for projects under construction, authorized or recommended in the comprehensive plans of development.

d. 9 September 1953, Snake River Basin. Agreement on division of planning responsibility and responsibility for recommending projects on the Snake River. Based upon specific reaches of the main stream and tributaries entering the main stream in those reaches.

e. 6 & 20 August 1954, Fish and Wildlife Service Agreement. Specifies procedures for carrying out sound planning on fish and wildlife matters related to river basin projects of the Corps of Engineers under the Coordination Act of 14 August 1946. (P.L. 732, 79th Congress).

f. 9 March - 6 April 1955, Procedures for Developing General Plans for Fish and Wildlife Management. Specifies the procedures and general provisions for carrying out general plans for fish and wildlife management as specified in Section 3 of the coordination Act.

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- g. 31 December 1958, Central Valley Basin, California. Comprehensive agreement dividing responsibilities for planning and construction of water resources projects, for intergrated operation of facilities, and for marketing of services.
- h. February 1962, Joint Policies Relative to Reservoir Project Lands. Changed the former real estate policy adopted in 1953 to one providing essentially for fee acquisition.
- i. March 1962, Texas River Basins Projects. By direction of the Vice President, representatives of the Bureau of Reclamation, Corps of Engineers, Agriculture, and the State of Texas agreed on construction responsibilities among those agencies for the individual projects in the basin plan. Transmitted to the Vice President by representatives of the U. S. Study Commission and endorsed by the State of Texas.
- j. 14 March 1962, Alaska, Columbia, and Missouri River Basin. Agreement on principles, procedures and designations of responsibility in planning and carrying out Federal water resource development activities in Alaska, the Columbia River Basin, and the Missouri River Basin.
- k. 13 July 1967, Memo of Understanding on Dredging and Filling. Policies and procedures to be followed when application for permits to dredge, fill, or excavate in navigable water are filed with the Corps of Engineers.
- l. 2 November 1970, Procedures for Planning Formalized Free Exchange of Design Information. Agreement between the Corps of Engineers and the Bureau of Reclamation to reinforce the coordination of engineering design and construction practices through a common philosophy and alignment of methodology. The agreement provides for exchange of information on Design Standards, Criteria, Guide Specifications, Cost Estimating Guidelines and lists of Engineer Computer Programs.
- m. 2 February 1973, Memorandum of Agreement Between Secretaries of Army and Interior. This agreement sets forth the principles and procedures for coordination of Corps and Bureau of Land Management (BLM) programs where the Corps constructs and operates water resources projects in the adjacent lands administered by BLM.
- n. 11 July 1976, Agreement between U.S. Geological Survey and the Corps of Engineers. Provides mutual agreement for use by the Corps of the data facilities of the National Water Data Storage and Retrieval System (WATSTORE).

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o. 7 September 1977, Agreement between the U. S. Fish and Wildlife Service and the Corps of Engineers. Establishes principles to be used by both agencies in the conduct and funding of Fish and Wildlife Coordination Act activities.

p. 8 June 1978, Memorandum of Understanding between the U.S. Geological Survey and the Corps of Engineers. This Memorandum recognizes the Corps as a participating member of the National Water Data Exchange (NAWDEX).

q. 31 August 1978, Memorandum of Understanding signed by the Chief of Engineers and Director of the Geological Survey, US Department of the Interior. This MOU establishes procedures for implementing cooperation on the exchange of available information. This information includes results of research and investigations of regional and local geology, seismology, and hydrology that are relevant to site selection and design considerations for Corps facilities, such as dams and other critical installations.

27-2. Army-Interior-Federal Power Commission (now known as Federal Energy Regulatory Commission).

12 March 1954, Cost Allocations. Agreement that the costs of combining reservoir project purposes shall be allocated in proportion to the distribution of resulting savings. The following three methods were considered acceptable: Separable Cost-Remaining Benefit (SCRB), Alternative Expenditures, and Use of Facilities.

27-3. Army-Agriculture

a. 23 June 1948, Memorandum of Understanding Between Corps-Soil Conservation Service on Drainage Activities. Provides for each agency to keep the other advised of its current drainage and related water management activities, exchange technical information, and correlate drainage improvement measures.

b. 19 March 1959, Agreement between Corps and SCS on Participation in Urban Flood Protection. Provides for consultation between the agencies with a view to reaching a mutually satisfactory decision as to whether the Corps of Engineers or the Soil Conservation Service should provide the Federal flood control assistance desired by local urban areas. Supplemented by agreement of 23 September 1965.

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c. 13 August 1964, Management of Resources Associated with the National Forest System. Provides policy guidelines for the use, development and management of lands under control of the Departments of Army and Agriculture in the vicinity of Corps water resource projects within or partly within the National Forest System. Supersedes the agreement of 16 December 1946.

d. 23 September 1965, Corps - SCS - Flood Protection by Engineering Works. Provides a basis for establishing responsibilities, policies and coordination in the preparation of flood protection plans for areas in which there is a mutual interest, including those affecting urbanized areas.

e. 12 April 1968, Corps - USDA - Agreement on Common Procedures in Areas Quarantined Due to Plant Pests. Provides for removal of service and construction equipment, and soil samples from areas quarantined because of plant pests.

27-4. Defense - Agriculture

27 March 1963, Memorandum of Understanding for the Conservation of Forests, Vegetative Cover, Soil, and Water on Lands Administered by the Department of Defense.

27-5. Army - Transportation

a. 25 April 1969, Agreement between the Corps of Engineers and the U.S. Coast Guard. This Agreement provides that the Coast Guard upon prior application will inspect Corps of Engineers vessels.

b. 28 January 1970. Agreement on procedures between Bureau of Public Roads (now known as Federal Highway Administration) and Corps of Engineers for incorporation of betterments at non-Corps of Engineers' expense affecting the relocation of highways due to construction of Corps reservoir projects.

c. 18 April 1973, Memorandum of Agreement Between U.S. Coast Guard and Corps of Engineers to clarify areas of jurisdiction and responsibilities under Federal statutes to regulate certain activities in navigable waters of the United States. Agreement covers alteration of bridges; construction, operation and maintenance of bridges and causeways as distinguished from other types of structures; closure of waterways and restriction of passage through or under bridges; design flood flows; and provides for mutual coordination and consultation on projects and activities in or affecting navigable waters.

d. 7 September 1976, Agreement between the Corps of Engineers and the US Coast Guard. Agreement is intended to assist the parties to effectively utilize their resources and to delineate their responsibilities in carrying out the surveillance and enforcement of federally contracted ocean dumping activities associated with Federal Navigation Projects.

e. 7 May 1977 Memorandum of Understanding between the Corps of Engineers and the U.S. Coast Guard. The purpose of this Memorandum is to clarify the responsibility for safety on the navigable waters of the U.S. as a result of the Ports and Waterways Safety Act of 1972 (PL 92-340)

27-6. Army - Environmental Protection Agency.

a. 15 April 1971, Agreement on division of responsibility for providing additional assistance to State and local governments for enhancing environmental quality and for meeting cost-effectiveness requirements for investments in pollution abatement.

b. 22 November 1974, Agreement defines the relationship between areawide waste treatment management planning conducted by the Corps under the Urban Studies Program and areawide waste treatment management planning authorized under Title II of the Federal Water Pollution Control Act Amendments of 1972 and administered by EPA. The agreement also acknowledges that the Corps may provide technical assistance in Section 208 (Pub. Law 92-500) planning outside the Corps Urban Studies Program.

c. 18 August 1975, Memorandum regarding the use of resources to focus on discharges which have potential for significant harm during the phased implementation of the Section 404 program.

d. 25 March 1976. Memorandum describing ways in which the Corps can participate in State and areawide water quality planning and management programs authorized under Section 208 and 303 of PL 92-500.

e. 20 January 1978. Interagency agreement whereby the Corps will assist the EPA in reviewing and inspecting the construction of new sewage treatment facilities under EPA's Construction Grants Program.

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27-7. Army-EPA-Agriculture-Interior

25 September 1973, Memorandum of Agreement which provides that EPA will require recipients of planning grants under Section 208 of Public Law 92-500 to provide for the creation of an advisory committee and to invite Departments (including the Corps) to participate if they deem appropriate. Programs of the Departments which may implement portions of approved Section 208 plans will be utilized as provided in the agreement. In addition, the Administrator shall employ funds authorized under Section 304 (j) of Public Law 92-500 to supplement related programs of the Department as provided in the agreement.

27-8. Army-Nuclear Regulatory Commission.

a. 19 April 1973, Agreement No. AT (49-24)-0037, Corps - Atomic Energy Commission on Technical Support in Reviewing Applications for Licenses for Nuclear Facility Sites and Allied Services. Agreement by the Corps to provide technical support in reviewing and appraising applications for licenses for nuclear facility sites and allied services in the field of foundation engineering in connection with the regulatory functions of the U. S. Atomic Energy Commission (valid through 30 June 1974; subsequently extended). Pub. Law 93-438, enacted 11 Oct 1974, transferred the licensing and regulatory authorities and functions of AEC to the Nuclear Regulatory Commission.

b. 2 July 1975, Memorandum of Understanding between the Corps of Engineers and the Nuclear Regulatory Commission for Regulation of Nuclear Power Plants. Memorandum defining the roles each agency shall play in the licensing of nuclear plants to avoid conflicting and unnecessary duplication of efforts and of standards related to overall public health and safety and environmental protection.

27-9. Army - National Environmental Satellite Service

17 November 1975, Memorandum of Agreement regarding the use of the Geostationary Operation Environmental Satellite (GOES).

27-10. Army - U.S Geological Survey.

11 July 1976, Memorandum of Agreement relating to the use of the Geological Survey's National Water Data Storage and Retrieval System (WATSTORE)

27-11. Army - Commerce

17 November 1976, Memorandum of Agreement regarding the use of the Geostationary Operational Environmental Satellite (GOES)

27-12. Army-Office of Emergency Preparedness. (Now known as Federal Emergency Management Agency)

8 June 1973, Memorandum of Agreement prescribing policies and procedures governing reimbursement to the Corps for expenditures in providing disaster assistance.

CHARTER 28

OFFICE OF MANAGEMENT AND BUDGET CIRCULARS

This appendix lists Office of Management and Budget instructions of a continuing nature applicable to or of interest to civil works.

<u>No.</u>	<u>Subject</u>	<u>Date</u>
A-1 (Revised)	Office of Management and Budget's system of Circulars and Bulletins to executive departments and establishments.....	08/07/52
A-3 (Revised)	Governmental periodicals.....	05/18/72
A-10 (Revised)	Responsibilities for disclosure with respect to the budget.....	11/12/76
A-11 (Revised)	Preparation and submission of budget estimates (Transmittal Memorandum No. 48).....	05/25/79
A-12 (Revised)	Object Classification.....	07/21/77
A-16 (Revised)	Coordination of Surveying and Mapping Activities.....	05/06/67
	Transmittal Memorandum No. 2.....	10/10/58
	Transmittal Memorandum No. 3.....	11/02/60
	Transmittal Memorandum No. 4.....	03/01/61
	Transmittal Memorandum No. 5.....	10/17/64
A-18 (Revised)	Policies on construction of family housing.....	10/18/57
	Transmittal Memorandum No. 1.....	08/23/67
A-19 (Revised)	Legislative Coordination and Clearance.....	07/31/72

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<u>No.</u>	<u>Subject</u>	<u>Date</u>
A-25	User Charges.....	09/23/63
	Transmittal Memorandum No. 1.....	10/22/63
	Transmittal Memorandum No. 2.....	04/16/74
A-31 (Revised)	Distribution of appropriations and other budget authority made to the President.....	02/22/72
	Transmittal Memorandum No 1.....	07/20/73
A-34 (Revised)	Instructions on budget execution.....	07/15/76
	Transmittal Memorandum No. 7.....	07/15/76
A-40 (Revised)	Management of Federal reporting requirements	05/03/73
	Transmittal Memorandum No. 1.....	02/10/76
	Transmittal Memorandum No. 2.....	11/05/76
A-49	Use of Management and Operating Contracts...	02/25/59
A-50 (Revised)	Executive branch action on General Accounting Office reports.....	10/28/71
A-60	Criteria for decentralizing Federal activi- ties from the National Capital region.....	07/18/63
A-62	Policies and procedures for the coordination of Federal meteorological services.....	11/13/63
A-63 (Revised)	Advisory Committee Management.....	03/27/74
	Transmittal Memorandum No. 1.....	07/19/74
	Transmittal Memorandum No. 2.....	07/19/74
	Transmittal Memorandum No. 3.....	09/03/75
	Transmittal Memorandum No. 4.....	02/05/76
	Transmittal Memorandum No. 5.....	03/07/77
A-67	Coordination of Federal activities on the acquisition of certain water data.....	08/28/64

<u>No.</u>	<u>Subject</u>	<u>Date</u>
A-76 (Revised)	Policies for acquiring commercial or industrial products and services for Government use.....	08/30/67
	Transmittal Memorandum No. 1.....	08/30/67
	Transmittal Memorandum No. 2.....	10/18/76
	Transmittal Memorandum No. 3.....	06/13/77
	Transmittal Memorandum No. 4.....	03/29/79
A-84	Reporting of Federal outlays by geographic location.....	06/29/67
	Transmittal Memorandum No. 1.....	08/30/67
	Transmittal Memorandum No. 2.....	03/26/69
A-89 (Revised)	Catalog of Federal Domestic Assistance.....	12/31/70
A-90	Cooperating with State and local governments to coordinate and improve information systems.....	09/21/68
	Transmittal Memorandum No. 1.....	09/07/76
A-94 (Revised)	Discount rates to be used in evaluating time-Distributed costs and benefits.....	03/27/72
A-95 (Revised)	Evaluation, review, and coordination of Federal and Federally assisted program and projects.....	01/02/76
A-97	Rules and regulations permitting Federal agencies to provide specialized or technical services to State and local units of government under Title III of the Inter-government Cooperation Act of 1968.....	08/29/69
A-99	Direction and control of litigation.....	06/30/70
A-102	Uniform administrative requirements for grants-in-aid to State and local governments	08/24/77
A-104	Comparative cost analysis for decisions to lease or purchase general purpose real property.....	06/14/72

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<u>No.</u>	<u>Subject</u>	<u>Date</u>
A-105	Standard Federal Regions.....	04/04/74
A-106	Reporting Requirements in Connection with the Prevention, Control, and Abatement of Environmental Pollution at Existing Federal Facilities.....	12/31/74
A-108	Responsibilities for the maintenance of records about individuals by Federal agencies.....	07/01/75
	Transmittal Memorandum No. 1.....	09/30/75
	Transmittal Memorandum No. 2.....	03/25/76
	Transmittal Memorandum No. 3.....	05/17/76
	Transmittal Memorandum No. 4.....	01/31/78
	Transmittal Memorandum No. 5.....	08/03/78
A-109	Major Systems Acquisitions.....	04/05/76
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