The Federal Coastal Programs Review

A Report To The President

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Prepared by

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
January 1981

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

19 JAN 1981

MEMORANDUM FOR THE PRESIDENT

SUBJECT: Review of Federal Programs Significantly Affecting Coastal Resources

Your Environmental Message of August 2, 1979, directed the Secretary of Commerce through the National Oceanic and Atmospheric Administration (NOAA) "to conduct a systematic review of Federal programs that significantly affect coastal resources...(to) provide the basis for specific recommendations to improve Federal actions affecting the coastal zone and to develop any additional legislation needed to achieve our national coastal management goals." I am pleased to submit to you the final report of the Federal Coastal Programs Review conducted by NOAA.

As requested in your memorandum to me of August 2, 1979, the review included extensive participation by other Federal agencies, coastal states, local governments, the private sector, scientists, and citizen groups. The report contains detailed recommendations for administrative, executive, and legislative actions with respect to Federal programs related to (a) development and reconstruction assistance in coastal hazard areas, (b) infrastructure development in coastal areas, (c) public recreational access to federally-owned coastal lands, (d) energy facility siting, accelerated coal utilization, and outer continental shelf oil and gas development, and (e) planning and permitting in special coastal areas.

The Nation's coasts are productive, beautiful, and subject to extraordinary pressures. The recommendations in this report are designed to assure more prudent investment of limited Federal funds and improved achievement of national coastal management objectives. I commend it to your attention.

Secretary of Commerce

Attachment

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PREPARED BY THE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

UNITED STATES DEPARTMENT OF COMMERCE

JANUARY 1981

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FEDERAL COASTAL PROGRAMS REVIEW

TABLE OF CONTENTS

	Page
INTRODUCTION AND SUMMARY OF RECOMMENDATIONS	i
CHAPTER I: DEVELOPMENT AND RECONSTRUCTION ASSISTANCE IN COASTAL HAZARDS AREAS	1
INTRODUCTION	1
A. Natural Coastal Processes	2
B. Coastal Hazards	2
C. Summary of Conclusions and Recommendations	4
THE FEDERAL ROLE IN FLOODPLAIN MANAGEMENT	5
A. Federal Programs Affecting the Floodplain	5
B. Federal Floodplain Management Policies	6
CONCLUSIONS AND RECOMMENDATIONS	10
A. The Federal Flood Control Program	11
B. Executive Order 11988	14
C. National Flood Insurance Program	16
D. Disaster Relief	26
CHAPTER II: FEDERAL SUPPORT OF INFRASTRUCTURE DEVELOPMENT	35
INTRODUCTION	35
GENERAL CONCLUSIONS AND RECOMMENDATIONS	38
DETAILED PROGRAM REVIEWS	50
A. Waste Water Treatment Construction Grant Program Environmental Protection Agency	50
B. The Federal Highway Program Federal Highway Administration Department of Transportation	58
C. Economic Development Assistance Programs Economic Development Administration Department of Commerce	64
D. Coastal Energy Impact Program National Oceanic and Atmospheric Administration Department of Commerce	76
E. Water Resources Development U.S. Army Corps of Engineers Civil Works Program U.S. Water Resources Council Principles and Standards	82
F. Agricultural and Rural Development Assistance Farmer's Home Administration Department of Agriculture	97

Page

G. Bridge Administration Program
U.S. Coast Guard
Department of Transportation 104
H. Section 10 and 404 Regulatory Program
U.S. Army Corps of Engineers, Department of Defense
U.S. Environmental Protection Agency 108

FEDERAL AGENCY COMMENTS 119

CHAPTER III: ACCESS TO FEDERAL LANDS IN THE COASTAL ZONE 123

INTRODUCTION 123

GENERAL RECOMMENDATIONS 127

SPECIFIC PROGRAM REVIEW AND RECOMMENDATIONS 129
A. Department of Defense 129
B. National Park Service, Department of the Interior 137
C. Fish and Wildlife Service, Department of the Interior 142
D. General Services Administration 146

FEDERAL AGENCY COMMENTS 149

CHAPTER IV: FEDERAL PROGRAMS RELATED TO ENERGY DEVELOPMENT 151

INTRODUCTION 151

THE ENERGY FACILITY SITING PROCESS 152
A. Introduction 152
B. Conclusions and Recommendations 161
1. Coordination of Multiple Authorities 162
2. Tracking Projects to Expedite Decisions 169
3. Conflict Resolution 172

ACCELERATED COAL UTILIZATION PROGRAM 180
A. Program Description 180
B. Conclusions and Recommendations 185
1. Coastal Impacts of Coal Transportation and Storage 185
2. Coastal Impacts of Combustion and Waste Products 192

OUTER CONTINENTAL SHELF OIL AND GAS PROGRAM 200
A. Program Description 200
B. Conclusions and Recommendations 202
1. Information Requirements 203
2. Environmental Regulation of OCS Operations 217
3. Participation of Interested Parties in Decisionmaking 224
4. Compatibility of Federal OCS Management with Other Continental Shelf Hydrocarbon Management Systems 227

	Page
5. Overall Federal OCS Program Management	230
FEDERAL AGENCY COMMENTS	232
CHAPTER V: IMPROVED COORDINATION FOR PLANNING AND PERMITTING IN SPECIAL AREAS	235
INTRODUCTION	235
GENERAL CONCLUSIONS AND RECOMMENDATIONS	238
PROBLEMS OF THE EXISTING REGULATORY PROCESS	244
A. Recent Evolution of the Regulatory Process	244
B. Conflicts Generated by Multi-Agency Review	245
C. Generic Problems	247
TECHNIQUES FOR IMPROVED INTERGOVERNMENTAL COORDINATION	255
A. Consolidated or Joint Application and Review Procedures	255
B. Stratification of Permits and General Permitting	256
C. Mandatory Consistency Requirements	257
D. Pre-Application Consultation, Applicant Referral and Permit Tracking Systems	258
E. Consolidation of Permit Authorities	259
F. Delegation of Permit Authorities	260
G. Time-Limiting Techniques	261
COLLABORATIVE INTERGOVERNMENTAL PLANNING FOR SPECIAL AREAS	262
A. Key Features of the Special Area Management Planning Process	262
B. Case Studies	269
1. Grays Harbor, Washington	270
2. San Francisco Bay, California	273
3. The Lower Willamette River, Oregon	275
4. Other Areas	277
C. Major Constraints to Improved Coordination	278
REVIEW OF FEDERAL PROGRAMS AFFECTING SPECIAL AREAS	284
A. U.S. Army Corps of Engineers Regulatory Programs	284
B. Fish and Wildlife Coordination Act Activities	290
C. National Environmental Policy Act Activities	297
D. The Endangered Species Program	306
E. The Coastal Zone Management Program	308
F. Clean Air Act Programs	316
G. State and Areawide Water Quality Management Planning Programs	323
H. EPA Consolidated Permitting Program	329

Page

APPENDICES

A. Distribution of Sikes Act Funds in Fiscal Year 1979, U.S. Navy Department A-1

B. Fiscal Year 1979, Surplus Property Transfers for Recreation in Coastal Counties B-1

C. Federal Environmental Statutes and Regulations Related to Energy Programs C-1

° Major Environmental Assessment Statutes and Regulations C-2

° Major Energy Statutes and Regulations C-2

° Major Statutes Regulating Air Resources C-5

° Major Statutes Regulating Water Resources C-8

° Major Statutes Regulating Land Use C-11

D. Presidential Documents

° Detailed White House Fact Sheet Accompanying the President's Environmental Message D-1

° The President's Environmental Message of August 2, 1979 D-4

° Memorandum from the President for the Secretary of Commerce Concerning Implementation of the Environmental Message D-5

INTRODUCTION AND SUMMARY OF RECOMMENDATIONS

The Nation's coasts are a vital and substantial part of our national resource base. Coastal wetlands provide nurseries, food, and habitat for most of the commercially valuable fish on which our multi-billion dollar fishing industry depends; coastal barrier islands and dunes provide an economically important buffer to protect the mainland from coastal storms; and coastal beaches provide an aesthetic and recreational resource enjoyed by millions. Our coasts abound with estuaries, beaches, bays, lagoons, islands, and wetlands that provide habitat for thousands of varieties of birds, fish, shellfish, reptiles, and mammals.

At the same time, the Nation's coasts are the focus of an enormous variety of increasing human uses. During the middle part of this century, the number of people living along our coasts grew at a rate three times the national average. Nearly 53 percent of the Nation's population lives within 50 miles of the oceans and the Great Lakes, and by the end of this decade that number will likely increase to 75 percent. Our coasts are also the location of some of the Nation's basic economic activities. The ports, docking facilities, and navigational channels located in the coastal zone are the backbone of the Nation's foreign trade and much of our interstate commerce. Major facilities related to defense, energy, fisheries development, and transportation all operate along the coasts. And as the needs of national and international commerce dictate that we turn more and more to offshore development, the demand for coastal "space" -- for deepwater ports, liquefied natural gas terminals, onshore facilities related to accelerated offshore oil and gas production, aquaculture, deep seabed mining, and such new technologies as ocean thermal energy conversion -- will increase proportionately. In sum, the coast is subject to pressures more intense and more often conflicting than any other area in the Nation.

Some of the potential consequences of expanding human demand for finite coastal resources are clear. Over 40 percent of our productive coastal wetlands have been damaged or destroyed, and estimates of continued loss of these resources range as high as several hundred thousand acres per year. Similarly, human alteration of roughly two thirds of our barrier islands has seriously compromised their value as coastal storm buffers. The task of balancing equitably the diverse demands on fragile coastal resources is complicated by the need to resolve sometimes competing national, state, and local interests as well as public and private interests. Yet, rational management is essential if this resource base so important to the Nation's economic well-being is to be maintained.

The Coastal Zone Management Act of 1972 (the CZMA) was an important first step. It established the means by which Federal, State, and local governments, the private sector, and citizens could act in partnership to develop and implement comprehensive programs to manage these conflicting land and water uses. Since passage of the CZMA, coastal management programs for 25 of the 35 eligible coastal states and territories -- representing nearly 80 percent of the Nation's coastline -- have received Federal approval, and important results are beginning to be realized.

The Federal Government is a key partner in this process. Although state and local governments have primary responsibility for land use decisions, the Federal Government exercises considerable influence over coastal resource use through its substantial regulatory, financial assistance, and planning assistance programs as well as its direct actions as a user of the coastal zone. Federal programs are themselves as diverse as the uses of the coastal zone, ranging from wilderness preservation to economic development. In some instances, these myriad missions are guided by singular national policy; in most cases, however, agencies are left to fulfill program objectives within the context of multiple congressional or executive mandates. The Federal investment in coastal areas each year is measured in the billions of dollars. Given finite coastal resources and increasingly limited Federal budgetary resources, the need to assure that Federal investments are sound, effective, and consistent is pressing.

Within the past year, the President and the Congress have taken several important steps toward that end. In August 1979, the President sent an Environmental Message to the Congress which called for reauthorization of the CZMA for an additional five years, proposed amendment of the CZMA to establish a clear national coastal protection policy, and directed the Secretary of Commerce through the Administrator of the National Oceanic and Atmospheric Administration (NOAA) "to conduct a systematic review of Federal programs that significantly affect coastal resources . . . [to] provide the basis for specific recommendations to improve Federal actions affecting the coastal zone and to develop any additional legislation needed to achieve our national coastal management goals."*/ In October 1980 the Congress responded to the President's Message by passing, and the President signed, the Coastal Zone Management

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*The pertinent portion of the President's Environmental Message, the President's instructions to the Secretary of Commerce, and relevant excerpts from the detailed fact sheet accompanying the President's Environmental Message are attached as an Appendix to this report.

Improvement Act of 1980 (the Amendments). The Amendments reauthorized for 5 years and amended the CZMA by, among other things, establishing nine specific national coastal objectives:

- protection of natural resources;

- management of coastal development to minimize the loss of life and property caused by improper development in coastal hazard areas;

- priority consideration to coastal dependent uses and orderly processes for siting major facilities;

- public access to the coast for recreational purposes;

- redevelopment of urban waterfronts and preservation of cultural, historic, and aesthetic coastal features;

- coordinated and simplified procedures to ensure expedited governmental decisionmaking for the management of coastal resources;

- continued consultation and coordination with affected Federal agencies;

- timely and effective notification of and opportunities for public and local government participation in coastal management decision-making; and

- comprehensive planning, conservation, and management for living marine resources.

The Amendments also affirmed the President's call for a review of Federal programs by directing the Secretary of Commerce to "conduct a systematic review of Federal programs, other than this title, that affect coastal resources for purposes of identifying conflicts between the objectives and administration of such programs and the purposes and policies of this title."

The report which follows responds to the President's request and provides the basis for the subsequent report to the Congress required by the Coastal Zone Management Improvement Act of 1980.

Conduct of the Federal Coastal Programs Review

In responding to the President's instruction, it quickly became apparent that a narrowing of scope was necessary. Nearly every Federal program affects coastal resources; an examination of all programs would have quickly exhausted the resources available for the review without corresponding return. NOAA therefore determined early to restrict its review to key programs in the following five areas:

- Federal programs providing development and reconstruction assistance in coastal hazard areas -- Federal programs provide support for construction in coastal areas subject to hurricanes, flooding, and erosion, through direct development assistance, Federal insurance, and reconstruction assistance. The Federal Coastal Programs Review has examined both whether existing tools are adequate to implement the national policy to minimize loss of life and property from flood-related events (and thereby to reduce redundant, repetitive public expenditures) and whether these tools are being effectively used.

- Federal programs supporting infrastructure development in coastal areas -- The Federal Government is a major financial supporter of infrastructure development (roads, water distribution systems, sewage treatment facilities) in coastal areas, with investments of several billion dollars each year in the form of direct construction, grants, loans, and planning assistance. Federal regulatory programs also influence the design, location, and timing of public facility projects. These Federal investments are unusual in terms of both their size and their impact through facilitation or stimulation of growth in coastal areas. For both reasons, it is important that such investments are carefully weighed for their consistency with other elements of national coastal policy. The Federal Coastal Programs Review has examined Federal infrastructure programs to evaluate the extent to which such investments are so weighed.

- Federal landholding programs in coastal areas-- The Federal Government provides substantial funds to State and local governments to assist them in improving public recreational opportunities in coastal and other areas. The Federal Government, however, is also a major coastal landholder. Since public landholdings in coastal areas are relatively small, it is important that the opportunities they offer to provide public access to the coast be maximized. The Federal Coastal Programs Review has examined Federal landholding programs to determine whether public recreational access to Federal lands in coastal areas is sufficiently provided.

- Federal programs related to energy development-- Coastal areas are likely to face greatly increased demand for energy-related facilities, both because of the need to serve the growing coastal population and because of the coast's important transportation functions and adjacency to offshore energy fields. The Federal Coastal Programs Review has examined the role of Federal programs in energy facility siting to identify opportunities to expedite and improve the predictability of government decisionmaking. The Review has also examined two aspects of national energy policy -- increased production, use, and export of coal and accelerated development of offshore oil and gas--to assess their impact on coastal resources.

- Federal regulatory and planning programs in special coastal areas-- Federal regulatory programs are an important determinant of the use and protection of sensitive coastal resources, such as wetlands and estuaries. Frequent complaint has been voiced, however, that delays, inconsistencies, and duplication may be impeding the effectiveness of these programs -- thereby compromising both needed protection and needed development. The Federal Coastal Programs Review has examined these Federal regulatory and planning programs to identify opportunities to expedite and increase the predictability and consistency of Federal decisions with respect to planning and permitting in sensitive coastal areas.

The Federal Coastal Programs Review was structured to assure maximum participation by other Federal agencies, state and local governments, the private sector, and citizens. In brief, the process which led to this report was as follows:

- A scoping paper describing the issues proposed for examination, key programs to be covered by the review, and procedures for conducting the review was circulated widely throughout the Federal community and among private and public interest groups in late 1979.

- NOAA convened a meeting in early 1980 of policy-level representatives of the major Federal agencies to discuss the scoping paper, seek agreement on NOAA's proposed course of action, and obtain technical representatives from the other agencies to work with NOAA on the review.

- Work groups composed of agency technical representatives were formed for each subject area to refine the scope of investigation, provide programmatic information, and to serve as technical review teams for early drafts of the report.

- Public meetings were held in six cities around the country (Washington, D.C., Boston, New Orleans, San Francisco, Seattle, and Chicago). Prior to the meetings, a detailed list of questions to be addressed was sent to numerous environmental, industry,

government, and other representatives in each region. These questions provided the basis for oral comments at the public meetings and substantial written public comment throughout the review.

- Initial drafts of each of the chapters were circulated for review by the involved agencies and interest groups. Meetings with agencies and key interest groups were held in Washington, D.C., to receive comments.

- Second, and in some cases, third, drafts were sent for review to the affected Federal agencies for policy-level review, to state coastal management agencies, and to all others who had commented during the review.

- Based upon this final round of comments, the final report was prepared.

Summary of Major Recommendations

The chapters which follow present detailed reviews and recommendations for the major Federal programs involved in each of the five subject areas described above. Brief summaries of the major recommendations contained in those chapters are set forth below.

A. Federal Programs Providing Development and Reconstruction Assistance in Coastal Hazard Areas.

The water's edge is both an attractive and a dangerous place to live. A variety of hazards pose significant risks to life and property in coastal areas, including flooding and wind damage, erosion, tsunamis, earthquakes, and land subsidence. With the rapid population growth in coastal areas, the life and property exposed to coastal hazards has increased as well. This increase is illustrated by the trend in property damage from hurricanes, which has climbed steadily from about $300 million per year during the first third of the century to currently over $2.4 billion per year and is expected to grow to roughly $5 billion in constant dollars annually by the end of the century. The Federal Government has provided substantial financial support for development in hazardous areas both in the form of direct assistance and in the form of disaster and reconstruction assistance. The result in the past has been a cycle of construction and destruction funded in significant part by the public.

Chapter I examines Federal programs affecting property and lives at risk in coastal areas subject to flood hazards to asssess their consistency with each other and their effectiveness in reducing the potential for flood loss. The review is limited to flood hazards since flooding is the common denominator of most coastal hazards, flooding associated with hurricanes and other severe storms presents the single greatest risk in terms of

potential damage, and measures to reduce the impact of floods and storms by and large have the effect of reducing risks from other hazards as well.

This review has concluded that in fundamental structure, existing Federal policy toward management of the floodplain is sound. The essential tools to minimize the risk to people and property exist:

-- while structural measures for flood control are authorized, nonstructural approaches are encouraged;

-- Executive Order 11988 (Floodplain Management) permits Federal support for development in the floodplain only where location in the floodplain is the only practicable alternative and rigorous mitigation measures have been adopted:

-- incentives are provided for local adoption of land use ordinances to minimize flood damage, funds are authorized to assist relocation of people and property from particularly hazardous areas, and a mechanism exists to require long-term hazard mitigation planning; and

-- programs exist to furnish technical assistance and planning assistance, give warnings, assist evacuation, and provide disaster relief.

The review has also concluded, however, that substantial improvement in the use of these tools is necessary if the promise of current Federal policy is to be achieved. Despite the mandates of Section 73 of the Water Resources Development Act of 1974 and Executive Order 11988, structural flood control measures (i.e., use of structures such as seawalls, berms, and breakwaters, to modify flood flow) are still emphasized. Although Executive Order 11988 is now over 3 years old, Federal agency implementation of its provisions is severely inadequate. And improvements need to be made in Federal efforts to encourage state and local land use planners to adopt and enforce comprehensive hazard mitigation strategies.

As a consequence, the major recommendations of this report include the following:

1. Increased emphasis should be placed on nonstructural measures in the planning process for water resources projects; and impediments to this objective -- such as imprecise treatment of nonstructural flood control measures in the Water Resources Council's Principles and Standards for Planning Water and Related Land Resources, methodological biases in cost/benefit analyses in favor of structural measures, and insufficient use of grant or loan conditions to require adoption by local communities of nonstructural measures -- should be removed;

2. Legislation should be enacted that codifies the essential policies of Executive Order 11988;

3. Administrative changes in the National Flood Insurance Program should be adopted to assure that all new development in flood-prone areas is actuarially rated (rather than provided subsidized rates) and to strengthen local floodplain management requirements by limiting new development in high hazard areas and assuring that development does not exceed community ability to evacuate;

4. Section 1362 of the National Flood Insurance Act should be amended and adequately funded to make relocation more effective as a hazard mitigation tool;

5. The Disaster Relief Act of 1974 should be amended to provide stronger incentives for predisaster hazard mitigation planning by requiring the availability of such plans as a condition of eligibility for nonemergency postdisaster relief, prohibiting all Federal assistance inconsistent with an adopted hazard mitigation plan, and making available funding and increased technical assistance to state and local governments to prepare such plans; and

6. The Consolidated Farm and Rural Development Act and the Small Business Act should be amended to improve targetting of development away from high hazard areas and to assure consistency of assistance under those Acts with hazard mitigation plans prepared under the Disaster Relief Act.

B. Federal Programs Supporting Infrastructure Development in Coastal Areas

Infrastructure projects (i.e., the installation of public facilities, such as roads, bridges, sewers, and water supply systems, essential to community development) are particularly significant to achievement of national coastal policies since they determine the pattern of growth in the coastal zone. Their economic, environmental, and social impacts are thus more significant than most other actions. Although such projects are normally initiated by state or local interests, their completion in most cases depends on Federal support or approval. Federal programs are thus often compelling factors in determining the use of the coastal zone. The number of Federal programs involved in coastal infrastructure decisions is large and the dollar investment immense (over $2 billion in fiscal year 1979). Assuring that such decisions are made with full attention to national coastal management objectives is correspondingly important.

As pressures grow on limited coastal and Federal budgetary resources, it is increasingly important that Federal investment decisions be made carefully and wisely. Chapter II of this report identifies a number of

obstacles to such decisiomaking. First, information concerning Federal infrastructure decisions in coastal areas and the impacts of such decisions is diffuse and not easily available to decisionmakers. As a consequence, for example, no one knows the rate of loss of coastal wetlands, nationally or regionally, attributable to Federal infrastructure investments. Moreover, Federal agencies tend not to share routinely information on the impacts of coastal resource decisions with other Federal agencies; assessment of the cumulative effects of investments by one agency or by several agencies is thus difficult and not regularly performed. Second, national coastal policies are often brought to bear only after project planning and selection has occurred at the state and local levels, even though these projects are typically the result of federally approved project selection processes; full integration of national coastal policies at this stage is more difficult. Third, the secondary and cumulative effects of infrastructure development projects are often not considered or are given less weight than direct impacts of project construction in reviewing projects. Although more difficult to identify with certainty, these indirect effects are often more important than direct impacts from the perspective of coastal mangement. Fourth, although Executive Orders 11988 (Floodplain Management) and 11990 (Wetlands Protection) are important elements of national coastal protection policy, agencies have not yet fully implemented them. As a consequence, achievement of the national policy of avoiding Federal investments in these critical coastal areas has been uneven at best. Fifth, although Federal agencies typically have good broad statements of policy with respect to significant natural resources, few agencies have established clear and specific substantive guides for decisionmaking with respect to such important issues as growth impacts on sensitive coastal areas, unacceptable levels of damage to such significant coastal resources as wetlands, dunes, or barrier islands, and mitigation requirements. Since most decisions with respect to Federal infrastructure investments are made at the regional or district level, the imprecision of agency policies has led to widely varied performance in meeting national coastal objectives. Sixth, postconstruction project monitoring by Federal agencies is minimal. As a result, postproject assessment of impacts, the adequacy of mitigation measures, or indeed whether the project is serving its intended purpose is seldom performed. Finally, agency statements of policy and procedure for assessing and managing impacts on coastal resources are typically not consolidated or readily available to the public.

As a consequence, the general recommendations of this report include the following:

1. The Council on Environmental Quality should convene an interagency task force to design and recommend a system for collecting and sharing information on the impacts of infrastructure projects on coastal resources;

2. Federal agencies should require that federally approved project selection mechanisms incorporate national coastal objectives

so that such policies are applied as early as possible in the design of infrastructure projects and conflicts are thereby avoided;

3. Additional effort should be devoted by Federal agencies to improving procedures and methodologies for evaluating secondary and cumulative effects of infrastructure project decisions. Once identified with reasonable certainty, secondary and cumulative effects should be given the same weight as direct impacts in evaluating project alternatives;

4. Legislation should be enacted codifying the essential policies of Executive Order 11988 (Floodplain Management), and Executive Order 11990 (Wetlands Protection) should be amended to remove certain exemptions which have limited its effectiveness;

5. The President should issue a coastal resource executive order setting forth decision guides designed to ensure that Federal investments in infrastructure and other projects with significant adverse effects on coastal resources are made only where the public benefits clearly outweigh the costs and all reasonable mitigating measures have been adopted;

6. Federal agencies supporting infrastructure projects should be directed to adopt and implement clear and specific policies designed (a) to minimize adverse growth impacts on significant coastal resources, (b) to establish limits on acceptable losses of coastal resources which, if exceeded, will require project denial, and (c) to identify when mitigation will be required as a condition of project approval and what mitigation measures are appropriate and sufficient;

7. Federal agencies should be directed to develop, implement, and report annually on the results of postconstruction project monitoring programs; and

8. Federal agencies should be directed to consolidate their policies and procedures for protecting coastal resources in a single document which is readily available to the public, project applicants, and other interested persons.

In addition to these general recommendations, Chapter II of this report contains detailed recommendations with respect to each of eight key Federal programs that provide support or approval for infrastructure development in coastal areas.

C. Access to Federal Lands in the Coastal Zone

In 1962, the Report on the Shoreline Recreational Resources of the United States found that less than 3 percent of the Nation's total shoreline mileage was publicly owned for recreational or other purposes. Since 1962, public ownership of coastal property has increased through operation of the Land and Water Conservation Fund and the national wilderness and parks programs. At the same time, recreational demand has grown and much available coastal property has been developed for strictly private use. The portion of the Nation's coastline accessible to the public for recreation remains relatively small. The Federal Government is a major landholder in coastal areas, particularly in or near urban areas; effective management of these lands thus offers the potential for significant gains in public recreational access. An initial barrier to improved access to these lands, however, is the lack of explicit assessments of the potential of Federal lands in the coastal zone for public recreation.

The major Federal landholders in the coastal zone are the Department of Defense and the Department of the Interior. Provision of public recreational access is an aspect of the mission of each of these agencies, through operation of the Sikes Act (P.L. 86-797) in the case of the Department of Defense and the organic statutes for the national wildlife refuge and national parks programs in the case of the Department of the Interior. Improved public recreational access to these Federal lands, however, is hampered by a number of factors, including slow implementation of the Sikes Act, the legitimate need to balance public demand for recreational access with the primary missions of each program (security and safety in the case of military installations, resource protection in the case of parks and wildlife refuges), the absence of generally accepted methodologies and in some cases clear guidance for performing that balance, and in a number of cases inadequate provision for transportation.

In addition, the General Services Administration (GSA) plays an important role in providing public access to coastal lands through its actions as the Government's agent for transfer and disposal of excess and surplus real property. Full use of this authority, however, is impeded by limitations on GSA's ability to attach use conditions on surplus property it sells to private parties.

Accordingly, Chapter III of this report offers the following general recommendations to improve public recreational access to federally owned coastal lands:

1. The Department of the Interior should be directed to prepare, in cooperation with NOAA and state coastal management agencies, a comprehensive inventory of Federal landholdings in the coastal zone with a priority listing of properties that should be opened further to the public;

2. The Department of Defense should be instructed to give higher priority to the establishment of cooperative agreements for general recreation on military lands in coastal areas and to report annually on use of military bases and other Defense properties in coastal areas by members of the public for recreation;

3. The Department of the Interior should undertake an analysis of the methods currently used by the National Park Service and the Fish and Wildlife Service to establish capacity limitations of their facilities to determine whether additional public recreational access can be provided without resource damage. As part of this analysis, the Department of the Interior should reassess the Fish and Wildlife Service's 1972 decision eventually to eliminate nonwildlife recreational uses of national wildlife refuges.

4. The Departments of Transportation and the Interior should establish a joint task force to review the requirements for improving access to parks in urban coastal areas and recommend solutions to the Secretaries of Transportation and the Interior and the Council on Environmental Quality; and

5. The Federal Property and Administrative Services Act of 1949 should be amended to permit the imposition by GSA of reasonable public access requirement conditions on the sale of surplus Federal coastal properties with significant public recreation potential.

D. Federal Programs Related to Energy Development

The coastal zone can be expected to be an increasingly active focus for energy activities for the remainder of the century. Population and industry will continue to locate along the coast in disproportionate numbers; energy facilities will be necessary to serve their needs. Similarly, production, transportation, and use of domestic coal and offshore oil and gas resources will have to increase in response to uncertainties in the world energy market; again, increased pressures on coastal areas will result. This review has examined Federal programs related to energy facility siting, increased use of coal, and accelerated development of offshore oil and gas to assess opportunities to improve their contribution to the national coastal objectives of provision of predictable siting processes, expedited government decisionmaking, and protection of significant natural resources.

The Federal role with respect to energy facility siting is limited and fragmented. Federal involvement occurs chiefly through the regulatory process, which is generally not engaged until late in the site selection process -- after much planning has been completed and numerous commitments

already made by the interested parties. Federal responsibility is also shared by numerous agencies, which conduct their reviews in response to necessarily diverse missions (ranging from resource development to resource preservation). Effective functioning of this pluralistic decisionmaking system depends on early, active coordination among the interested Federal agencies; timely, accurate information on project reviews; and effective forums for resolving disagreements. Inadequacies exist in current Federal performance in all three respects.

With respect to coal, current U.S. policy calls for substantially increased development of the Nation's abundant coal resources both to displace domestic reliance on oil and to improve our foreign trade balance through exports. This effort will result in a substantial increase in water-borne transportation and associated storage and transshipment of coal in coastal areas, particularly in the Great Lakes and parts of the Atlantic coast. Significant coastal impacts will include those associated with waterway maintenance and use -- shoreline erosion and water quality impairment from dredging -- and expansion of port facilities -- noise, air pollution, and competition for coastal land. In addition, increased conversions of electric powerplants, many of which will be located along the coast, from oil to coal may result in increased air emissions of combustion poducts and fugitive dust as well as discharges of water pollutants from coal waste and coal storage sites. Federal programs exist to address each of these impacts; however, this review has identified a number of improvements that can be made in their implementation.

The outer continental shelf (OCS) historically has not provided a major part of the Nation's oil and gas; as a consequence of the need to reduce dependence on imported petroleum, however, the OCS is becoming an increasingly important energy source. At the same time, the OCS oil and gas leasing program has been controversial and politically contentious almost from the outset. The result was the Outer Continental Shelf Lands Act Amendments of 1978 (OCSLAA), which established an elaborate and comprehensive management regime, administered by the Department of the Interior, for OCS oil and gas development. This regime provides for participation by state and local governments, industry, interested citizens, and other Federal agencies and imposes substantial and complex information needs for decisionmaking. Significant progress has been made in the implementation of the OCSLAA in the 2 years since its enactment, and the Nation is as yet only part way into the first 5-year lease schedule. Nevertheless, improvements in the areas of information for accelerated leasing in frontier areas, environmental regulations for OCS production operations, participation of interested parties in decisionmaking, coordination with state and other national OCS management systems, and overall Federal OCS program coordination would accelerate progress toward expanded OCS oil and gas production.

As a consequence, the major recommendations of Chapter IV of this report include the following:

1. The Office of Management and Budget (OMB) should direct all Federal agencies whose programs influence the siting of major energy facilities to enter into regional or state agreements, with participation of state and local agencies, to coordinate their planning and review activities through early and regular consultation, clear definition of responsibilities, and joint planning and review;

2. OMB should activate under Executive Order 12129 generic fuels review task forces similar to the existing task force for coal-fired powerplants to develop and implement tracking and monitoring systems for major energy facilities;

3. Federal agencies, through the Federal Regional Councils, should fund training for environmental mediators, undertake pilot mediation projects, and provide technical assistance for mediation efforts related to energy facility siting;

4. The Corps of Engineers should (a) undertake preparation of a programmatic environmental impact statement related to coal transportation for its waterway maintenance dredging and port deepening programs which identifies and evaluates appropriate mitigation measures and (b) reexamine its analysis of winter navigation on the Great Lakes by including a more thorough analysis of environmental and recreational costs and develop effective mitigation strategies in cooperation with an expanded Winter Navigation Board;

5. The Economic Regulatory Administration should continue preparation of site-specific environmental impact statements on coal conversions of existing electric generating facilities;

6. The Environmental Protection Agency (EPA) should (a) develop and implement national standards for fugitive dust emissions and (b) expedite its study of coal combustion and storage wastes to determine if they are hazardous within the meaning of the Resource Conservation and Recovery Act of 1976;

7. The Department of the Interior should place increased emphasis in its implementation of the Environmental Studies Program on postlease environmental research and monitoring. The Department of the Interior should make greater use of existing Biological Task Forces and establish new ones on a regional basis as appropriate to solicit advice from other Federal agencies on the effects of OCS activities in areas of particular biological sensitivity, needed studies, and appropriate mitigation measures;

8. The Environmental Protection Agency should assign high priority to identifying areas of special biological sensitivity in implementing the NPDES program for offshore areas and work with the Department of the Interior to assess air quality emissions data and develop emission control measures to be included in OCS exploration and development plans;

9. The Department of the Interior should increase coordination and joint action with state agencies responsible for continental shelf resource management and, working with the Department of State and other Federal agencies, develop an initiative to increase cooperation with Canada and Mexico on common scientific, technical, management, and regulatory issues with respect to offshore oil and gas development; and

10. OMB should establish a policy and OCS interagency group to review agencies' OCS-related programs and budgets and to assess the overall implementation of the OCSLAA by all Federal agencies with responsibilities under that and other OCS-related statutes.

E. Improved Coordination for Planning and Permitting in Special Coastal Areas

Environmental legislation during the last two decades has dramatically increased protection for valuable coastal resources. At the same time, systems for managing coastal development have become more pluralistic, complex, and costly. Most coastal development projects are approved without undue problems or complexity. In coastal areas where complex natural resource and economic development issues must be balanced within limited geographic boundaries, however, the system of case-by-case review by multiple agencies often leads to delays, protracted disputes, and considerable uncertainty for all involved. Problems arise as a result of inconsistent policies among government agencies, lack of guidance to applicants and others about agency policies that will be applicable to specific permitting decisions, inability to address issues of cumulative impact, excessive costs to applicants and the public, and real and perceived misuses of case-by-case permit review procedures. Problems also arise when development interests fail to consider natural values early in project planning, especially in areas where local plans and zoning ordinances do not require such consideration. The end result is misallocation of resources -- both in terms of avoidance of needed development and unnecessary losses of valuable coastal habitat.

This review has examined Federal permitting and planning programs for special coastal areas to identify mechanisms to improve predictability, expedite decisionmaking, and increase protection of vital coastal resources. Major impediments to achieving this goal are several. First, Federal regulations typically contain only very general statements of substantive regulatory policy, leading to uncertainty and inconsistent

guidance; an important need, therefore, is for clarification of Federal regulations and guidelines to define key standards, such as those for mitigation of adverse impacts of dredging and filling and structures in wetlands and intertidal areas and for requiring water-dependent or water-related uses of shorelines and land created by the fill of such areas. Second, Federal regulatory agencies do not have uniform techniques for making key regulatory assessments related to development in shoreline and wetlands areas; the methods for making these assessments are rarely specified in advance, and often developed on a case-by-case basis, thus burdening applicants and agency representatives with the development of such techniques and leaving applicants and others uncertain how proposals are to be evaluated. Finally, collaborative intergovernmental planning for special areas (special area management planning) offers the potential for simplification, improved predictability, and consistency of state and Federal permitting; long-term protection for specific resource areas; avoidance of conflicts over specific permits; and savings in time and money for all interests. However, Federal regulations do not yet provide sufficient authority and support for such efforts.

As a consequence, Chapter V of this report offers the following general recommendations:

1. Federal resource agencies and the Corps of Engineers should develop uniform substantive guidance for field personnel with respect to key regulatory terms that affect permitting for development in wetland and shoreline areas. A number of states have similar requirements that should be taken into account in developing substantive Federal guidance on these matters;

2. The Council on Environmental Quality and the Environmental Protection Agency, in cooperation with the Corps of Engineers, the Water Resources Council, and other interested state and Federal agencies, should jointly develop and publish guidelines for assessment methods and techniques involving dredge-and-fill or other shoreline alteration decisions, pursuant to their roles in administering the National Environmental Policy Act and the Clean Water Act;

3. Regulations for programs that play important roles in the management of special coastal areas should be amended to enable agency representatives to develop and endorse formally special area management plans for use in subsequent permit reviews. Those agencies should establish guidelines which specify the conditions upon which such development and endorsement will take place, the forms of necessary agreements, and the effect of such approved plans on agency permit review comments and decisions; and

4. An interagency committee should be established to assist efforts to coordinate and simplify Federal regulations in special coastal areas. This committee should be chaired by a representative of the Council on Environmental Quality and include voting representatives from the Environmental Protection Agency, the Fish and Wildlife Service, the Army Corps of Engineers, the National Marine Fisheries Service, the Office of Coastal Zone Mangement, and the Water Resources Council, and participation of other agencies as appropriate.

In addition to these general recommendations, Chapter V of this report contains detailed recommendations with respect to a number of the major Federal regulatory and planning programs.

Concluding Observations

The report which follows is the result of an interagency effort. Considerable energy was expended to develop sound recommendations that were supported by other Federal agencies. For the most part, the recommendations that follow reflect agreement, lack of objection, or only minor disagreement by the affected Federal agencies. In some cases, however, we were unable to resolve major disagreements with other agencies; in those instances, the dissenting views of the affected agencies are noted in a final section of the relevant chapter.

- First, as noted above, the review is limited in scope. Nearly all Federal programs affect coastal resources; limitation of the inquiry to the five broad areas outlined above was therefore necessary. The chapters which follow focus on the major Federal programs in each of the areas of inquiry. Omission of certain programs thus reflects not their unimportance to coastal resource management, but simply the need to manage the task at hand. Since the programs reviewed were the larger ones, however, adoption of the recommendations should greatly improve achievement of national coastal objectives. In addition, certain of the generic recommendations should improve administration of programs not reviewed as well.

- Second, the review is limited in depth. Of necessity, heavy reliance was placed in conducting the Federal Coastal Programs Review on interagency assistance, literature review, and public comments. Time and resource limitations precluded extensive original field research; the conclusions presented have thus not had the benefit of verification through onsite assessment. Nevertheless, the consistency of comment and the available supporting information indicate that the conclusions are sound.

- Third, the recommendations have not had the benefit of detailed cost analyses. Again, because of the breadth of the charge and time and resource limitations, detailed analyses of the costs (and savings) of implementing the recommendations of the report were not performed; in some cases, further analysis will be appropriate before recommendations are implemented. For the most part, however, we are confident that the recommendations will result in improved decisionmaking, more efficient achievement of national coastal objectives, and fewer Federal expenditures.

Although the number of recommendations contained in this report is large, the recommendations for fundamental change are relatively few. The Federal Government has done much over the last decade to "get its house in order" with respect to coastal issues. The recommendations in this report, for the most part, simply continue that effort.

With these points in mind, we believe that the recommendations of this report, if adopted, will lead to improved achievement of national coastal objectives, wiser investment of Federal funds, and improved performance by the Federal partner in coastal management.

Chapter I: Development and Reconstruction Assistance in Coastal Hazards Areas

Chapter I: Development and Reconstruction Assistance in Coastal Hazards Areas

I. Introduction

Nearly 53 percent of the Nation's population resides in coastal counties, and, as the following table indicates, the national shoreline population is already six times as dense as and growing at a rate more than twice that of the rest of the country.

Population Density in Counties Within Fifty Miles of Coastal Shorelines: 1940 - 1977

Population per square mile:	U.S. Total	Total Coastal	Atlantic	Pacific	Great Lakes	Gulf of Mexico	Balance of United States
1940	44.4	129.3	244.4	64.1	140.9	44.8	28.5
1950	50.8	157.2	283.3	97.6	162.9	59.8	30.9
1960	60.2	198.3	341.6	142.7	197.3	83.1	34.3
1970	68.2	232.0	394.4	182.5	219.1	101.1	37.6
1977	72.6	244.0	407.7	198.7	221.9	119.8	40.5

Source: U.S. Bureau of the Census, Statistical Abstract of the United States, 1979, p. 10.

With this rapid growth in population has come a concomitant increase in property exposed to the range of natural hazards that affect coastal areas--from hurricanes and tsunamis to erosion and subsidence.

Figure 1, which summarizes deaths and damages from hurricanes for the period 1900-1969, illustrates part of the risk associated with living on the coast. Deaths have declined markedly from the more than 6,000 lost in the 1900 Galveston disaster. From 1940 to the present, the total loss has been about 2,000 lives, with most of that caused by two hurricanes, one in 1944 and the other in 1957. Much of the decline is undoubtedly due to improved planning and warning techniques. Much also may be attributable to fortuity; at least one expert, for example, has suggested that only half of the 60,000 residents of the Florida Keys could be evacuated given the limitations of current weather prediction methodologies and the evacuation routes available. (Statement by Neil Frank, Director, National Hurricane Center, National Oceanic and Atmospheric Administration, before the Subcommittee on Parks, Recreation and Renewable Resources of the Senate Committee on Energy and Natural Resources, June 12, 1980.) The potential for human disaster is thus still great.

Property damage, on the other hand, has climbed steadily upward from approximately $300 million per year during the first third of the century to about $2.0 billion per year. And the trend is likely to continue. A recent study by Wiggins (1979), for example, concluded that:

Computer models indicate that hurricane wind and storm surge losses will increase over $3 billion to approximately $5 billion annually in constant dollars, easily exceeding the building damage caused by any other natural hazard.... This alarming increase will be largely due to rapidly accelerating coastal development, population movement to more hazardous areas and mounting building and replacement costs.

The risks of living near the water's edge are illustrated as well by flood insurance claims -- in 1979 property in the area closest to the water (the so-called "V" zone) accounted for only 3.3 percent of the flood insurance policies in force throughout the Nation but for 22 percent of the dollar value of claims paid.

Natural Coastal Processes

These trends are a function of human interaction with natural coastal processes. The natural forces at the water's edge are in a dynamic yet balanced state. The tremendous energy of waves and tides is absorbed by a relatively narrow edge of land made up of beaches, dunes, wetlands, bluffs, cliffs, and on the Atlantic and Gulf coasts, barrier islands. Each feature of the coastline, barrier island, beach or dune, serves a particular function in absorbing the forces of the sea.

Along much of our coastline, beaches are continually moving with the tides and currents, receiving and storing sand which will be eroded to sea during storms, thereby dissipating or dampening the force of the waves. In general, sand is built up on beaches by summer waves and is cut away during the winter by large high energy waves. The sand is carried offshore, where it is stored in bars and is carried along the shore or back onto the beaches the following summer. Sand is also blown ashore to form dunes and beach ridges, which serve as storage areas to replace sand washed to sea during storms. This movement of sand forms a long term equilibrium essential to the dissipation of wave energy. If sand is lost from this system, the sea rapidly moves inland.

Coastal Hazards

The hazards which pose the greatest risk to life and property in coastal areas include:

- Flooding and wind damage--Coastal flooding is usually associated with hurricanes or large storms, with high velocity winds an integral risk. The storm surge associated with such storms accounts for about 90 percent of the lives lost in coastal areas and almost 40 percent of structural damages. More than six million people currently reside in areas vulnerable to storm surge. Where the coastal area is also part of a riverine floodplain, flooding is also caused by snowmelt, rainfall, soil absorption and saturation, and tributary runoff.

- Erosion--Erosion, the exchange of sand and soil between shore and water, is a continuous process and therefore is a coastwide hazard, particularly if development is attempted within the coastal area needed by nature to dissipate wave energies. In recent geological time sea levels have risen, resulting in the area of the nature dynamic equilibrium moving inland, claiming once stable uplands for the normal coastal erosion process. Lake levels have also increased in the Great Lakes, from different causes but with the same shoreline effect. About one-quarter of the Nation's 79,000 mile shoreline is subject to significant coastal erosion, and the erosion problem is critical along 2,700 miles of shoreline.

- Tsunamis--Tsunamis are ocean waves set in motion by undersea earthquakes or landslides. Such waves reach land with tremendous velocity and often at considerable height, causing flood and surge damage. In contrast to hurricanes, which are common in the Atlantic and Gulf, tsunamis occur more frequently in the Pacific. Hawaii and Alaska are the most vulnerable areas of the United States.

- Land subsidence--Unlike other hazards that have been discussed, land subsidence -- the sinking of the surface of the earth's crust -- is ordinarily a gradual process which occurs over several decades and is usually induced by human actions. The direct hazard presented by subsidence is usually economic loss rather than a threat to human life. Land subsidence, however, can pose a significant risk to life if it precipitates events such as dam or levee failure, or if earthquakes cause rapid movement of hard rocks or liquefication of soft soils. In the Northeastern and Great Lakes States, problems of subsidence are attributable to mining operations. In the West and in Texas, Louisiana and Florida, the most significant cause of subsidence is fluid (oil, gas, or water) withdrawal. The most extensive consequences of land subsidence in coastal areas are increased flooding and the loss of low-lying lands through submergence.

The discussion which follows examines Federal programs affecting coastal flood hazards for their consistency with each other and their effectiveness in reducing the potential for flood loss. The discussion

has been limited to the flood hazard for several reasons. First, floods are the common denominator of most coastal hazards; erosion, tsunamis, hurricanes, and land subsidence. Second, the greatest single risk to coastal residents and property in terms of potential damage and number of people exposed is that presented by hurricanes and other severe storms; flooding associated with such storms (storm surge) is in turn the greatest determinant of their damaging effect. Finally, measures taken to reduce the impacts of floods and storms by and large have the effect of reducing the risks from other coastal hazards as well.

Summary of Conclusions and Recommendations

This report concludes that in fundamental structure, existing Federal policy toward management of the floodplain is sound. The essential tools to minimize the risk to people and property exist:

--while structural measures for flood control are authorized, nonstructural approaches are encouraged;

--Federal support for development in the floodplain is allowed only where the floodplain is the only practicable alternative and rigorous mitigation measures have been adopted;

--incentives are provided for local adoption of land use ordinances to minimize flood damage, funds are authorized to assist relocation of people and property from particularly hazardous areas, and a mechanisms exists to require long-term hazard mitigation planning; and

--programs are in effect to furnish technical assistance and planning assistance, give warnings, assist evacuation, and provide disaster relief.

The issue is whether these tools are being effectively used

In brief, the essential recommendations of this review are: (a) that current emphasis should be continued in the planning process for Corps flood studies to provide a balance of structural and nonstructural measures; (b) that legislation incorporating the principles of Executive Order 11988 should be sought; (c) that administrative changes should be made in the Flood Insurance Program to ensure that new development in the flood-prone areas is actuarially rated and to strengthen local floodplain management requirements in coastal high hazard areas; and (d) that the Disaster Relief Act should be amended to provide stronger incentives for predisaster hazard mitigation planning by requiring the availability of such plans as a condition of eligibility for nonemergency postdisaster relief, prohibiting all Federal assistance inconsistent with an adopted hazard mitigation plan, and making available funding and increased hazard mitigation plan, and making available funding and increased technical assistance to state and local governments to prepare such plans.

II. The Federal Role in Floodplain Management

The current Federal role in floodplain management consists of a variety of Federal programs affecting floodplain use and a set of policies, in many cases overlapping, concerning floodplain use.

A. Federal Programs Affecting the Floodplain

Federal programs affecting the floodplain are extensive and diverse. They include programs whose primary purposes are not flood-related but which nevertheless affect significantly the property and lives at risk in the floodplain. Discussed at length in the Infrastructure Chapter of this Review, these programs provide funding for construction of wastewater treatment plants (Environmental Protection Agency); for construction, maintenance, and improvement of highways (Federal Highway Administration); for construction of public works and economic development (Economic Development Administration); for construction of public facilities necessitated by coastal energy development (National Oceanic and Atmospheric Administration); for navigation, recreation, and water supply projects (Corps of Engineers); and for rural community facilities, water control systems, housing, and industrial development (Farmers Home Administration). The regulatory programs of the Coast Guard and the Corps of Engineers may also result in permits for bridges or other structures in or affecting the floodplain. These and other similar programs result in Federal expenditures in coastal counties each year of billions of dollars, although data to indicate the actual investment are not readily available.

In addition, a variety of programs are designed to address one aspect or another of flood hazards. The National Weather Service, for example, provides weather prediction and warning services to local communities. The Corps of Engineers expends funds for flood control projects, technical assistance, planning guidance, and assistance with flood prevention as necessary during an event. The Federal Emergency Management Agency, created in 1978 to bring most disaster-related programs into one agency, administers the Flood Insurance Program, which provides insurance to structures in flood-prone areas, and the Disaster Relief and Recovery Program, which provides assistance for emergency relief and a wide variety of reconstruction efforts and coordinates other Federal relief efforts following a flood disaster. In addition, a number of other Federal agencies, such as the Small Business Administration, the Farmers Home Administration, and the Department of Transportation, provide reconstruction assistance in a postdisaster period. Although again it is difficult to identify Federal expenditures aimed solely at flood hazards in coastal areas, the following table gives an indication of the magnitude of Federal disaster-related nationwide expenditures in 1980:

	Million $
Warnings	
National Weather Service (all Hazards)	14.7
Disaster Assistance (all hazards)	
FEMA--Individual and Public Assistance	140.0
FEMA--Repairs and Restoration	207.0
Insurance (floods -- both river and coastal)	
Federal Insurance Administration--Flood Insurance	308.4
Federal Insurance Administration--Administration and Technical Studies	75.0
Flood Protection	
Corps of Engineers (river and coastal) Technical Services	991.0
Loans and Grants	
SBA (all hazards)	368.0
EDA (all hazards)	43.0

B. Federal Floodplain Management Policies

Responses to flood hazards can take three forms.1/ First, efforts can be undertaken to modify the flood hazard -- by using structures (e.g., seawalls, bulkheads, groins, jetties, dams) to limit the area affected by the hazard or to reduce the frequency or intensity of the hazard. Second, human susceptibility to flood damage can be minimized -- through direction of new development away from floodprone areas (e.g., land use regulations, acquisition, investment restrictions); relocation of existing unsafe development; promotion of safe construction practices (e.g., elevation and floodproofing requirements); and provision of forecasts and warnings to assist evacuation. Finally, measures can be adopted to reduce the adverse impacts of floods on individuals and communities -- through emergency relief, flood insurance, tax adjustments, and posthazard recovery assistance. Federal flood efforts over the last century have taken all three forms.

Until late last century, the Federal Government played virtually no role in flood management; risks and losses were borne by the individuals and communities choosing to locate in flood-prone areas. With the advent of Federal flood control projects for the lower Mississippi River Basin

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1/ This discussion borrows from the Water Resources Council's A Unified National Program for Flood Plain Management, September 1979.

in the 1870's, the Federal Government began to shoulder an increasing share of the costs of floodplain development. This trend marked its zenith with the Flood Control Act of 1936, which declared that flood control was a proper Federal activity and triggered the investment of more than $13 billion in structural flood control measures over the next 40 years. For the first two-thirds of this century, then, the Federal strategy toward flood hazards was almost entirely designed to minimize risks through structural flood control measures.

Beginning in 1950, the Federal Government began to perceive that flood control efforts were insufficient; despite substantial investments, annual flood losses continued to grow. This perception was crystallized with the publication in 1966 of A Unified National Program for Managing Flood Losses, (House Document 465, 89th Congress, 2nd Session, U.S. Government Printing Office, Washington, D.C.), which documented the inadequacies of a Federal policy premised entirely on flood control and asserted that the "key to the problem lies, above all else, in the intelligent planning for the state and local regulation of use of lands exposed to flood hazards." This report led to enactment of the National Flood Insurance Act of 1968, which made Federally subsidized flood insurance available in exchange for community exercise of floodplain regulation -- thus beginning a shift in Federal flood policy designed to rely less on structural flood control and to transfer more of the costs of floodplain development to those benefiting from it. This trend continued and was enhanced through the 1970's with a number of legislative changes to the National Flood Insurance Program.

Current Federal flood policy encompasses all three of the basic strategies outlined above. Its essential elements are:

1. Flood control--A principal mission of the Corps of Engineers is the development and management of the Nation's water resources for navigation, flood control, beach erosion control, hurricane protection, stream bank erosion control, hydroelectric power, recreation, water supply and quality management, fish and wildlife conservation, wetlands conservation, and aquatic plant control. The Department of Agriculture, the Tennessee Valley Authority, and the Water and Power Resources Service of the Department of the Interior also have substantial flood control programs; their involvement in coastal areas, however, is limited. With the exception of certain small projects, authorization for flood control projects requires completion of feasibility studies and specific Congressional authorization. Project planning is carried out in accordance with the Water Resources Council's Principles and Standards for Planning Water and Related Land Resources,2/ which provide that only projects which demonstrate a net benefit after consideration of economic and environmental impacts may be recommended to Congress for approval.

2/ The Water Resources Council is in the process of revising the Principles and Standards, which will be renamed Principles, Standards and Procedures.

An important additional dimension was added by the Water Resources Development Act of 1974. Section 73 of that Act provides:

> In the survey, planning, or design by any Federal agency of any project involving flood protection, consideration shall be given to nonstructural alternatives to prevent or reduce flood damages including, but not limited to, floodproofing of structures; floodplain regulations; acquisition of floodplain lands for recreational, fish and wildlife and other public purposes; and relocation with a view toward formulating the most economically, socially, and environmentally acceptable means of reducing or preventing flood damages.

Current Federal policy thus includes provision for structural flood control measures but requires full consideration as well of nonstructural alternatives.

2. Limitations on development assistance--Executive Order 11296, augmented by Executive Order 11988, Floodplain Management, issued on May 24, 1977, establish a national policy "to avoid to the extent possible the long- and shortterm adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." Broad in scope, the Executive Orders apply to (1) the acquisition, management, and disposal of Federal lands and facilities; (2) the provision of Federally undertaken, financed, or assisted construction and improvements; and (3) the conduct of Federal activities and programs affecting land use, including planning, regulatory, and licensing activities. In brief, the Orders require Federal agencies to assess whether their proposed actions will occur in or affect a floodplain; to identify alternatives to siting in the floodplain and to adopt such alternatives unless none are practicable; and to minimize the adverse effects of siting in a floodplain where an action cannot be located elsewhere. If followed, the Executive Orders should thus minimize Federallysupported development in the floodplain.

3. Flood insurance--Pursuant to the National Flood Insurance Act of 1968, as amended, the Federal Emergency Management Agency provides flood insurance to property owners, thus modifying the impact of floods (strategy #3 above). Although participation in the flood insurance program is voluntary, communities that chose to participate must adopt and enforce certain minimum floodplain management regulations (including land use and building standards) applicable to new and rebuilt development. The program also gives FEMA the option of acquiring for subsequent transfer to state or local governments, or declaring as a total loss certain severely or repeatedly flood damaged structures and dedicating the land to open space uses, thereby lessening investment in high risk areas. Pragmatically, participation in the program is mandatory for coastal communities (in the sense that failure to participate renders the community ineligible for postdisaster reconstruction assistance in the flood area), and thus provides a powerful mechanism

to ensure that new development in flood hazard areas meets sound criteria and to take existing development, when destroyed, out of the cycle of reconstruction and destruction.

4. Postdisaster assistance--The Disaster Relief Act of 1974, authorizes postdisaster assistance designed to supplement the resources of state and local governments and voluntary relief organizations. In addition to providing emergency assistance, the Act authorizes a wide variety of other forms of assistance aimed at longer term restoration of the affected area, including grants to repair or replace infrastructure (roads, streets, bridges, water control facilities, public utilities, recreational facilities and parks). The Disaster Relief Act also requires state-predisaster preparedness planning (concerned principally with evacuation and warning procedures) and allows the FEMA Regional Director to require a hazard mitigation plan as a part of a Federal/State agreement subsequent to a declaration of a major disaster or emergency. The second of these planning requirements is particularly significant (when required by a FEMA Regional Director) since (a) it requires a plan designed to minimize the long term risks of such hazards through use of safe construction standards and land use practices and (b) no postdisaster grant or loan for reconstruction can be awarded under the Disaster Relief Act unless such a plan is prepared.

5. Flood warnings and evacuation planning assistance

Warnings and evacuation assistance are given by both the National Weather Service, Office of Oceanic and Atmospheric Services (NOAA) and the Federal Emergency Management Agency. Weather observation is a continuing function of NOAA's National Weather Service (NWS), which maintains programs and offices to measure and predict severe weather phenomenon. Surveillance is maintained for hurricanes, tornadoes, tsunamis, severe thunderstorms, extreme winter weather, and flash floods. Watches and warnings of natural disasters are issued by the NWS to a network of radio and television stations and to civil defense officials as needed. In addition, the NWS carries out an extensive public education program designed to assure prompt public response to warning information. FEMA in turn provides assistance to state and local governments for natural disaster preparedness planning that includes development and operation of telecommunication warnings and electronic systems to support emergency notification and response activities; makes emergency communication and attack warning systems available to other Federal agencies and state and local governments; and encourages each community to identify in its preparedness plan a focal point to receive and disseminate hazards information and to maintain communication with the NWS during a disaster event. Noteworthy in this regard are the large scale studies managed by the Corps of Engineers for tidal flood area evacuation in Florida.

Current Federal flood policy thus contains elements of all three basic flood response strategies. However, Federal policy has shifted from its early heavy reliance on flood control and now places more emphasis on keeping people away from floods.

III. Conclusions and Recommendations

This review has concluded that in fundamental structure, existing Federal policy toward management of the floodplain is sound. The essential tools to minimize the risk to people and property exist:

--while structural measures for flood control are authorized, nonstructural approaches are encouraged;

--Federal support for development in the floodplain is allowed only where the floodplain is the only practicable alternative and rigorous mitigation measures have been adopted;

--incentives are provided for local adoption of land use ordinances to minimize flood damage, funds are authorized to assist relocation of people and property from particularly hazardous areas, and a mechanism exists to require long-term hazard mitigation planning; and

--programs are in effect to furnish technical assistance and planning assistance, give warnings, assist evacuation, and provide disaster relief.

The issue is whether these tools are being effectively used.

The Review has not examined Federal warning, evacuation, and emergency relief programs to assess their effectiveness. With respect to the other elements of Federal flood policy, however, we have identified substantial opportunities for improved implementation. As a result, the promise of existing Federal policy substantially exceeds its performance. Despite the mandates of Section 73 of the Water Resources Development Act of 1974 and Executive Order 11988, structural flood control measures receive the greatest financial support. Although Executive Order 11988 is now over three years old, Federal agency implementation of its provisions, according to a WRC survey, is inadequate; and improvements need to be made in Federal efforts to encourage state and local land use planners to adopt and enforce comprehensive hazard mitigation strategies. These and other points are discussed in detail in the sections which follow.

A. The Federal Flood Control Program

1. Background

The Department of the Army and the Corps of Engineers are charged by Congress with the major Federal program of water resources development. The Corps' responsibility for water resources development began with an Act of Congress in 1824 for the improvement of rivers and harbors for navigation. Subsequent legislation has expanded the basis for Corps participation in water management to encompass technical assistance and planning for floodplain management, flood control, beach erosion control, hurricane protection, stream bank erosion control, hydroelectric power, recreation, water supply and quality management, fish and wildlife conservation, wetlands conservation, and aquatic plant control.

The House of Representatives Public Works and Transportation Committee and the Senate Environment and Public Works Committee resolutions and specific legislation provide basic authorization for feasibility studies by the Corps. With the exception of certain small projects for navigation, flood control, beach erosion control, and stream bank protection, water resource development projects recommended to the Congress in response to study authorizations may not be implemented without specific statutory authorization.

Planning for flood control and other water resources development projects is carried out pursuant to the Water Resources Council's Principles and Standards for Planning Water and Related Land Resources, which establish a detailed planning process involving identification of objectives, determination of technical feasibility, identification of alternative plans, analysis of the tradeoffs among the alternatives, and recommendation of the preferred alternative. In implementing the Principles and Standards, a System of Accounts is used to display "the significant beneficial and adverse impacts of alternative plans for the purpose of tradeoff analysis and decisionmaking." Four accounts are used -- national economic development, environmental quality, regional economic development, and other social effects. Alternatives are evaluated by establishing their contributions to the planning objectives and the four accounts. Selection of the preferred alternative is governed by the Net Benefits Rule, which provides that a recommended plan must be justified on the basis that combined beneficial effects outweigh combined adverse effects. Only national economic development and environmental quality effects are considered in applying the Rule.

As the natural processes of the shoreline have become better understood, the application of structural solutions to problems of navigation, flood control, and beach erosion control has become a source of mounting controversy. Development close to the shore has frequently created a demand to "stabilize" shoreline areas. On the other hand, an increasing number of scientists point out that the rate of shoreline erosion along the Nation's Atlantic, Pacific and Gulf coasts is controlled by sea level and that sea level is generally on the rise. In addition, the shoreline

is not a static environment uniformly amenable to the maintenance of fixed points and property lines. In many cases structural flood and erosion control measures are appropriate; in many other cases, however, they are not. The issue thus is whether the relative costs and benefits of structural and nonstructural alternatives are properly weighed.

On December 14, 1979, the Water Resources Council published revisions to the Principles and Standards which require the preparation of "a primarily nonstructural plan as one alternative whenever structural project or program alternatives are considered." Prior to the revised rule, the Corps procedures recognized that "nonstructural measures should be formulated if they are economically and/or environmentally sound"... and required that "if a nonstructural plan is not developed, the report of the District Engineer will fully describe how nonstructural measures were considered throughout the planning process and the role they played in the development and selection of the recommended plan." The revised rule will mean that in the future a "primarily nonstructural" alternative must be developed and carried to the plan selection stage. This change is a positive one; nevertheless, the Review has concluded that a number of impediments still exist to full consideration of nonstructural alternatives in water resources development planning.3/

Some of the impediments to the adoption of nonstructural flood control measures are beyond the control of the Federal Government. A project in Baytown, Texas, for example, which recommended relocation of residents from a subsiding area now being flooded at high tides has not been implemented, because of opposition by local residents to paying the local contribution requirement for that purpose. Other impediments, however, are within the control of the Federal Government. These include:

--lack of clarity in the Principles and Standards and the Corps' implementing regulations with respect to what a nonstructural alternative is; under what circumstances it can be applied effectively; what benefits can be claimed for nonstructural measures other than floodproofing and evacuation; and how noneconomic values of nonstructural alternatives are to be addressed;

--allowance in the cost-benefit analysis of benefits associated with more intensive, new land uses in the floodplain -- benefits which favor structural flood control measures since nonstructural solutions typically result in economically less valuable open space; and

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3/ This discussion is presented in more detail in the Infrastructure Chapter of the Review.

--failure to require as a condition of Corps assistance that local communities adopt and apply nonstructural measures such as setbacks open space requirements, and construction standards.4/

As a result the Review was able to identify only one coastal project -- the Baytown, Texas, project discussed above -- in which the Corps recommended adoption of a nonstructural solution.

2. Recommendation:

The Water Resources Council has underway a study to determine the problems water resources agencies have experienced in implementing Section 73 of the Water Resources Development Act of 1974. The Water Resources Council should address in its study the impediments identified above and recommend appropriate revisions in the Principles and Standards and in the Corps' regulations to remove them.

4/ Section 73 of the Water Resources Development Act of 1974, quoted above, requires consideration of nonstructural alternatives such as floodplain regulations.

B. Executive Order 11988

On May 24, 1977, the President issued Executive Order 11988, Floodplain Management, which established a national policy "to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." The Order directed Federal agencies to:

> provide leadership and ... take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of Federal lands and facilities; (2) providing Federally undertaken, financed, or assisted construction and improvements; and (3) conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating and licensing activities.

In particular Executive Order 11988 requires Federal agencies to determine before taking an action whether it will occur in a floodplain; to consider alternatives to avoid adverse effects and incompatible development in the floodplain; and, if an agency head finds that the only practicable alternative requires siting in a floodplain, to design or modify its action to minimize potential harm to or within the floodplain, and to circulate a public notice explaining why the action is proposed to be located in the floodplain. Agencies were directed to issue within one year regulations implementing the Order.

If followed, the Executive Order (and the implementing guidelines issued by the Water Resources Council) should minimize unsound Federally supported development in the floodplain and, thereby, the risk to people and property in those areas. Agency compliance with the Executive Order, however, has been uneven in the extreme. Three years after the Order's issuance and notwithstanding Presidential memoranda of July 12, 1978, and December 31, 1979 directing compliance, many agencies have not yet issued final implementing regulations and a number of others have not even issued proposed regulations. In addition, as discussed in more detail in the Infrastructure Chapter of this Review, the quality of those regulations that have been issued ranges widely. Some agencies have established detailed policies and procedures patterned after the Water Resources Council's guidelines; other agencies, however, have relied instead on only general paraphrasing of the Executive Order. Finally, the extent to which agencies have implemented the Order in fact has also varied. Again some agencies have genuinely demonstrated leadership, and, as demonstrated by employees of the Field Office of one agency who indicated they had only just learned of the Order this past summer, other agencies clearly have failed to pursue aggressively their responsibilities under

the Order. In addition, independent agencies do not believe the Executive Order applies. The promise of Executive Order 11988 has thus been substantially greater so far than its performance.

Recommendation:

Executive Order 11988 is a critical element of the national policy to minimize flood loss. In order to assure its implementation, we recommend that legislation be enacted codifying the Order's essential policies. Such legislation would have the beneficial attributes of providing clear congressional sanction to the policies of Executive Order 11988; requiring agency issuance of implementing regulations by a date certain; providing a basis for rigorous lead agency oversight by CEQ, the WRC, or FEMA of agency actions for compliance with the Order's policies and for issuance of binding regulations governing implementation of the Order (much like CEQ's NEPA regulations); and enabling judicial review and invalidation of agency actions not in compliance with the Order. Codification would also remove any doubt that the Order applied to independent agencies.

C. National Flood Insurance Program

1. Background and description of the program

The National Flood Insurance Program, as currently structured, is a relatively new effort. Passed in 1956, the first Federal Flood Insurance Act lacked floodplain regulatory measures and failed for want of appropriations. Publication in 1966 of A Unified National Program for Managing Flood Losses (House Document 465, cited above), however, led to renewed interest in the subject and passage of the National Flood Insurance Act of 1968.

The National Flood Insurance Act of 1968 established a program of subsidized flood insurance for existing properties in identified flood hazard areas, eligibility for which depended upon community adoption of local floodplain management measures. Because completion of the technical studies necessary to identify flood hazard areas -- and, therefore, to trigger eligibility -- proved difficult and costly, the Act was amended in 1969, creating an emergency phase that would permit provision of insurance before completion of the detailed studies and maps. More importantly, by 1973, a major deficiency in the program had become apparent -- its voluntary nature.

The Flood Disaster Protection Act of 1973 eliminated that flaw by requiring communities with identified special flood hazard areas to enter the program by July 1, 1975, or within one year of notification of a special flood hazard determination. Failure to enter or to maintain eligibility in the program was prescribed to result in (1) denial of mortgage loans from Federally insured or regulated lending institutions for property located in the identified flood hazard area and (2) denial of Federal assistance for construction or acquisition of structures in designated flood hazard areas. Although the first of these two sanctions was eliminated by Congress in 1977, the second sanction still provides a powerful incentive for community participation in the Flood Insurance Program -- which no doubt accounts in part for the increase in coastal communities participating in the program from 467 in 1973 to 1465 in 1980. Nearly all coastal communities have flood hazard areas and therefore must participate in the program to receive the Federal assistance described above; of these communities, only about 70 are not participating.

The current program consists of two phases; the emergency phase and the regular phase, each of which has graded floodplain management requirements which depend on the availability of certain technical information concerning hazards and risks in the community at large and on the location of particular properties within the flood hazard area.

a. Emergency phase

The emergency phase covers that period of time between a community's entrance into the program and FIA's completion of the technical studies necessary to make actuarial rate determinations. All insurance issued during the emergency phase, whether for new or existing construction, is provided at subsidized rates (currently about 72 percent).5/ To qualify, a community must apply to FEMA's Federal Insurance Administration (FIA) and adopt minimum floodplain management measures prescribed in FIA's regulations. These measures include:

--requiring permits for all proposed construction or other development in the community, including mobile home placement;

--reviewing proposed developments to assure that all necessary Federal or state permits have been received;

--reviewing permit applications to determine whether proposed building sites will be reasonably safe from flooding and requiring that new construction and substantial improvements, including prefabricated buildings and mobile homes, are anchored to prevent flotation, collapse, or lateral movement, built with flood resistant materials and equipment, and constructed using methods and practices that minimize flood damage; and

--reviewing subdivision and new development proposals to determine whether they will be reasonably safe from flooding and to assure that they are designed to minimize flood damage, locate and construct public utilities and facilities, including gas, electrical, water, and waste disposal systems, so as to minimize or eliminate flood damage, and provide adequate drainage.

Once a Flood Hazard Boundary Map (FHBM) is published which identifies those areas of the community subject to flooding, the commuity must also:

--require that all subdivision proposals and other proposed new developments greater than 50 lots or five acres, whichever is less, include base flood elevation data;

--require that all new construction and substantial improvements of existing structures have the lowest flood elevated to or above the base flood level, as determined using any available base flood elevation data;

--notify adjacent communities, the state, and FIA of alterations of water courses and maintain the carrying capacity of water courses; and

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5/ Source FIA.

--prepare an evacuation plan, including alternative access and escape routes for mobile home parks or subdivisions.

b. Regular phase

The regular phase of the program begins when FIA has completed the detailed hydrological and topographic studies necessary to determine the base flood elevation for the 100-year flood. This information is displayed on a Flood Insurance Rate Map which divides the community into zones of flood risk and indicates the risk premium rates applicable in each zone. The Rate Map is then used to identify the proper actuarial rates for individual structures in the community. The distinguishing characteristics between the regular and emergency phases are that (1) more stringent floodplain management measures are required under the regular phase and (2) actuarial rather than subsidized rates are charged under the regular program for new or substantially improved structures.

When a community enters the regular phase of the program, the floodplain management requirements of the emergency phase must be augmented by:

--requiring new or substantially improved residential structures in special flood hazard areas (Zone A or that area subject to at least a one percent chance of flooding in any year) to have the lowest floor, including basement, elevated to or above the level of the 100-year flood, unless the community is granted an exception;

--requiring new or substantially improved nonresidential structures in zones A1-30 to be similarly elevated to or above the 100-year flood level, or be watertight with substantially impermeable walls and structural components that will resist static and dynamic loads and buoyancy effects;

--providing that where floodproofing is used (a) a professional engineer or architect certify that the floodproofing methods are reasonably adequate to withstand the flood depths, pressures, velocities, impact and uplift forces, and other forces associated with a 100-year flood, and (b) a designated community official maintain records of such certificates indicating the specific elevation to which such structures are floodproofed or, alternatively, submitting to the Administrator of FIA for approval a local floodproofing regulation which satisfies the watertight requirements;

--requiring in new mobile home parks, mobile home subdivisions, and their expansions, that stands or lots are elevated on compacted fill or on pilings at or above the 100-year flood level, provide adequate surface drainage and access for haulers, and provide adequate space for steps, spacing and reinforcement for pilings;

--providing similar requirements for individual mobile homes not in mobile parks, or subdivisions;

--prohibiting new construction or other development within Zones A1-30 unless the new facilities will not increase the water surface elevation of the base flood more than one foot at any point within the community;

--prohibiting encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway that would result in any increase in flood levels within the community during the occurrence of the base flood discharge.

In addition, in coastal high hazard areas (so-called "velocity" zones or "V" zones), FIA requires still further measures be applied. In such areas, communities must:

--require that all new construction be located landward of mean high tide;

--require that all new construction and substantial improvements be elevated on adequately anchored pilings or columns, securely anchored to such pilings or columns so that the lowest portion of the structural members of the lowest floor is elevated above the base flood level, and certified by a registered professional engineer or architect to be sufficiently well anchored to withstand velocity waters and hurricane wave wash;

--require that all new construction and substantial improvements have the space below the lowest floor free of obstructions or constructed with "breakaway walls" intended to collapse under stress without jeopardizing the structural support of the structure so that the impact on the structure by abnormally high tides or wind-driven water is minimized;

--prohibit the use of fill for structural support of buildings;

--prohibit the placement of mobile homes, except in existing mobile home parks and mobile home subdivisions; and

--prohibit artificial alteration of sand dunes and mangrove stands which would increase potential flood damage.

The V zone is defined technically as that area which (because of the astronomical tide, storm surge, topography and other conditions) will support a three foot or higher wave and represents the area where the greatest risk of harm -- from storm surge, wind-driven waves, scouring or erosion, and battering by debris -- exists.

Finally, the Flood Insurance Program includes two relocation provisions, one a creature of policy and the other a creature of statute, which can be used to reduce the risk of flood loss. FIA's "constructive total loss" policy allows a structure to be declared a total loss where community ordinances prohibit rebuilding damaged structures or where the cost of rebuilding is prohibitive if the insured property owner is willing to donate the land for open space purposes. Payment can then be made to the limit of insurance coverage or the value of the structure, whichever is less. Thus far, this policy has received limited use; only one major project, involving 51 houses in Conroe, Texas, some of which had been flooded more than 20 times over the past seven years, has been undertaken. Although the policy has never been used in coastal areas, the Conroe example illustrates its promise and utility where a local community takes the initiative to limit reconstruction. In addition, Section 1362 of the National Flood Insurance Act, as amended, 42 USC §4103, authorizes FIA, on a willing seller basis, to purchase insured property that has been severely or repeatedly flood damaged. Payments may include the value of the land, and title to the insured property must thereafter be transferred to state or local governments or agencies for management in accordance with sound land use principles. Both elements -- the constructive total loss policy and Section 1362 -- offer a significant tool for removing high risk insured property from the development/destruction cycle and a potentially powerful incentive for local governments to preclude building or rebuilding in high hazard areas.

2. Recommendations

Because most coastal communities have special flood hazard areas, the effective functioning of the Flood Insurance Program is central to minimizing the risk to life and property from coastal flooding. Significant policy strides have been made in the past several years, and FIA is responsible for much of that progress. Nevertheless, the Review has identified a number of areas where improvements in the insurance program should be made.

a. Ending subsidies for new development

The essential rationale of the Flood Insurance Program is to shift the costs of siting in the floodplain -- to those who benefit from it. By distributing all of the costs of building in the floodplain across relatively risk-homogenous groups, presumably rational decisions will be made which ensure that inappropriately designed or sited structures will not be built--because the costs will be too high. This theory assumes that actuarial (i.e., true cost) rates are charged for such structures. For two reasons, internalization of flood costs has not yet occurred.

First, one of the major reasons for the creation of the Flood Insurance Program was that flood insurance was generally unavailable through the private insurance market because the risk was too high; that is, much of the existing development was so constructed or sited that actuarial rates would have been

prohibitively expensive. As the quid pro quo for communities to enter the program and adopt sound land use and building standards for new development, the Congress provided insurance at subsidized rates to all existing development. The current subsidy (that is, the extent to which the general public rather than floodplain property owners bear the costs of flood damage) is about 72 percent.6/ In theory, of course, as existing development is destroyed or replaced, the subsidy will be eliminated; thus, eventually the costs of flood damage will be completely internalized. The Federal Insurance Administration currently projects that the flood insurance system will be self-sustaining by the year 2010. With the exception of relocation efforts discussed in (c) below, this Review has found no better solution to the dilemma of existing development and thus makes no recommendation for change with respect to the issue of subsidized rates for existing development.

A second obstacle to internalization, however, is more susceptible to alteration. Although in theory new development in flood hazard areas should receive no subsidy, the application of actuarial rates to such structures has been delayed for two reasons. First, the distinction between new and existing structures is defined as that point in time when a community enters the regular phase of the program; hence, during the emergency phase of the program, new construction is eligible to receive subsidized rates. The distinction drawn is not irrational since entry into the regular phase is the first time at which the detailed technical information required to establish true actuarial rates is available. Nevertheless, it means that in the roughly 800 coastal communities still in the emergency phase, new construction is eligible for subsidized insurance.7/ Second, and more importantly, the Flood Insurance Rate Maps completed for the 740 coastal communities in the regular phase of the program are based on stillwater flood elevations and do not account for storm surge and/or wave height, important determinants of storm-related coastal flood damage. The FIA is in the process of revising its rate maps to account for storm surge/wave height; however, a generally accepted methodology to do this was only developed in 1978. FIA expects to complete the mapping process for the roughly 1100 coastal communities affected by storm surge in 1983 if funds are obtained in the FY 1982 and 1983 budgets. The difference between the new and the old rate maps will generally be an increase in elevation at the shoreline of 3 to 8 feet. Thus, even in those communities in the regular phase, new development is in many cases receiving less than actuarial rates.

6/ Source FIA.

7/ Indeed, new construction in areas eventually identified as "V zones" receives two subsidies -- the reduced rate all property receives in the emergency phase and the reduced cost of construction by not having to meet elevation and other building improvements.

Recommendations:

1. FEMA recently published regulations (44CFR 9.11(e), 45 Fed. Reg. 59520, 59543 (September 9, 1980)) providing that as of February 1, 1981, all flood policies for new or substantially improved construction in V zone areas will be actuarially rated. We recommend that FIA initiate individual rating of policies for all new or substantially improved construction in emergency phase communities to ensure that such policies are actuarially rated. Where insufficient information exists to assess the actuarial risk, flood insurance should not be provided.

2. FIA should adhere to the accelerated schedule of the technical studies and maps necessary to convert coastal communities from the emergency to the regular phase of the program and to incorporate storm surge/wave heights into existing maps in order to eliminate any subsidy for new construction, establish true actuarial rates, and put in place the most stringent land use provisions of the Flood Insurance Program. Appropriations necessary to achieve this goal should be sought by the Administration.

b. Adequacy of FIA-required local flood management measures

Substantial public debate has occurred in recent years over whether the availability of Federal flood insurance has spurred development in flood-prone areas. While the Review has not provided an answer to this question, it is clear that the Flood Insurance Program has not discouraged development in such areas. This point was made by FIA in comments during the Review:

> What is indisputable is that the NFIP has not restricted coastal development to any measurable degree. The elevation standards for new construction and the flood insurance premium increase costs to some degree, which is a minor disincentive. The requirement that Federal and federally related instrumentalities forewarn individuals of the hazard and of the requirement to purchase flood insurance before making financial assistance available for acquisition or construction purposes would serve to dissuade risk-conscious people from locating in these areas. If these factors have dissuaded many people from locating in coastal special flood hazard areas, the net effect has been more than negated by the many buyers with a low perception of the risk and the money to pay the slightly higher building costs.

This fact places a particulary heavy burden on the adequacy of the FIA requirements for local floodplain management to minimize the risk to property in such areas. This Review has concluded that in at least two areas improvements should be made in FIA's regulations.

The V zone is the most critical area of the coastal floodplain in terms of both natural coastal processes and the risks to human development. Yet, the only locational requirement contained in FIA's regulations is that local governments restrict construction landward of the mean high tide. In effect

this permits construction in that area where there are risks and, more importantly, where the potential for disruption of natural flood-protective processes are the greatest. Development in the V zone also frequently increases the risk of damage to landward property owners (by providing material for storm debris, increasing erosion, or interfering with the normal sand exchange in dune areas). For these reasons, development in that area should be avoided except in the case of structures for which access to the water is essential (e.g., docks, bridges), and even in the case of such facilities, siting should to the maximum extent possible take into account long term erosion rates and occur landward of the primary dune system (in coastal areas that have dunes).

In addition, although FEMA's regulations require communities to prepare evacuation plans that include alternative access and escape routes for mobile homes parks and subdivisions, the regulations require no link between such plans and land use decisions nor do they require preparation of evacuation plans for other areas of floodprone communities. The state of the art in hurricane and severe storm prediction currently provides no more than 12 hours warning; yet, in many communities 12 hours is not enough time to evacuate the existing population. Key West and Sanibel Island, Florida, for example, are areas where the present population could not be evacuated in a 12-hour period. (Statement of Neil Frank, supra.) Sound flood hazard mitigation requires that the population not be permitted to grow beyond the ability of a community's evacuation infrastructure.

Recommendations:

1. FIA should revise its regulations to require that local floodplain management ordinances prohibit new or substantially improved construction in the V zone except for water dependent structures or structures that facilitate public recreational access to the shoreline. Structures approved for location in the V zone should be required to the extent possible to be sited landward of the primary dune system and the projected 50 year erosion line.8/

2. FIA should modify its regulations (a) to require that local governments adopt evacuation plans for the entire population at risk and report annually on the adequacy of their evacuation plans and measures taken to overcome identified deficiencies and (b) to require that local floodplain management ordinances prohibit new development which would result in population increases beyond the capability of existing systems to evacuate.

8/ FEMA's recently revised regulations implementing Executive Order 11988 apply this standard to disaster assistance under the Disaster Relief Act by prohibiting such assistance to support new or substantially improved structures in coastal high hazard (V zone) areas except for uses that depend on proximity to the water and structures that facilitate an open space use. 44 CFR 911(d)(1), 45 Fed Reg 59533 (September 9, 1980).

c. Relocation measures

Because of past land use decisions, considerable private holdings exist near the water's edge, on barrier islands, and in other coastal high hazard areas. In some cases, flood losses can be avoided or minimized by elevation, anchoring, and other construction requirements. In other cases, however, lots simply should not be built upon, because the risk of damage is so great that flood-proof structures cannot be built, because construction on the property will disrupt natural storm protective processes, or because development will increase significantly the risk to other property farther inland or downshore. Many barrier islands, for example, are highly unstable and simply should not be built upon. In these cases, setbacks and other locational requirements or use restrictions are the only way to avoid or minimize flood damage. Because of the private equity involved, however, many communities may be reluctant to impose such restraints and, indeed, in some cases may be legally constrained from doing so by state or Federal constitutional limitations. In these cases acquisition is an essential tool.

Section 1362 of the Flood Insurance Act was designed to provide for acquisition of developed areas. Unfortunately, it has scarcely been used due to minimal funding. Only $5.4 million has been appropriated for a pilot effort under Section 1362. These funds were spent for acquisition of 94 properties, 13 of which were in coastal areas, over the past year. Based on historical claims and the number of policies in force, FIA has estimated tentatively that a fully effective acquisition program would require an annual appropriation of $50 million. Because of the funding difficulties, FIA has developed as an administrative measure the "constructive total loss" policy described above. Both Section 1362 and the constructive total loss effort, however, suffer from the defect of being available only for insured property. In addition, current regulations restrict use of Section 1362 funds to structures damaged beyond repair, property damaged at least 25% three times in five years, and property reconstruction which is prohibited or made too expensive by local regulation. These limitations can serve as an impediment to adoption of a comprehensive relocation effort, particularly where undeveloped (and, therefore, uninsured) lots are interspersed in an area.

Recommendations:

1. Section 1362 of the National Flood Insurance Act should be amended to authorize purchase of previously uninsured property that is within the boundary of a relocation project and to prohibit provision of other Federal assistance inconsistent with an FIA relocation plan. The restriction on use of funds for damaged property should similarly be modified to accommodate a comprehensive relocation effort.

2. Although other Federal programs providing acquisition funds could be used more effectively in flood hazard areas (see Section III.D.2. below), a critical mass of funds should be available to FIA to initiate relocation projects. Accordingly, the funding level for Section

1362 should be increased substantially. To determine the program level of funding, FIA should conduct an analysis of and seek the funding necessary for an effective relocation program under Section 1362, as revised accordance with recommendation number 1 above.

3. Section 1362 should be amended to allow comprehensive land use plans prepared pursuant to sections 201 and 406 of the Disaster Relief Act of 1974 or the Coastal Zone Management Act of 1972 to establish the basis for a relocation project.

D. Disaster Relief

1. Description of the program

a. Assistance under the Disaster Relief Act of 1974

The Disaster Relief Act of 1974 was designed to provide Federal assistance to supplement the efforts and resources of state and local governments and voluntary relief organizations. A Presidential declaration of a "major disaster" authorizes assistance under the Disaster Relief Act and triggers other Federal disaster relief programs as well.9/ After Presidential declaration of a major disaster, the Governor(s) of the affected state(s) and FEMA execute a Federal-State Disaster Assistance Agreement which prescribes the manner in which Federal aid under the Disaster Relief Act is to be made available.

Financial assistance under the Disaster Relief Act is available to individuals and state and local governments for a broad range of activities, some of which are directed at emergency disaster relief and others of which are designed for repair and reconstruction. The latter group includes, grants to local or state governments for repair or replacement of roads, streets, bridges, water control facilities (e.g., dikes, drainage facilities, levees, irrigation works), public buildings, and public utilities. Of the $192 million FEMA expended as a result of Hurricane Frederic, $137 million went to remove debris and perform emergency work and $55 million went to support repair and reconstruction efforts in Alabama, Florida, and Mississippi.

b. Other Federal disaster relief assistance

The other Federal disaster relief programs active in coastal areas are those of the Small Business Administration (SBA) and the Farmers Home Administration (FmHA).

The SBA administers a number of disaster loan programs to provide funds to victims of floods, riots, civil disorders, and other catastrophes such as hurricanes and tornadoes, and to rehabilitate or replace damaged or lost physical property. Loan availability is predicated on the declaration of a disaster by the President, the Secretary of Agriculture, or the Administrator of SBA. Where no Federal declaration is made, the Governor of a State may certify to SBA that as a result of a disaster at least five small concerns located in that State have suffered economic injury and are in need of financial assistance

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9/ The Disaster Relief Act also authorizes assistance under a Presidentially declared "emergency." Because assistance under an "emergency" is limited to those actions necessary to save lives, protect property, public health and safety or to lessen the threat of a more severe disaster (and, therefore is unlikely to influence long-term land use decisions), the discussion will focus on "major disaster assistance."

and that such assistance is not otherwise available on reasonable terms. Applicants may include home or property owners, businesses of any size, and nonprofit institutions. Although a precise estimate of SBA's loan obligations in coastal areas was not possible, nationwide funding for the program in FY 1979 was roughly $1.3 billion. Most loans were for noncoastal areas; however, a significant number of loans were in coastal communities.

The FmHA emergency loan program provides financial assistance to cover losses sustained by individuals or other entities engaged in farming as a result of either a major disaster declared by the President pursuant to the Disaster Relief Act of 1974 or a natural disaster declared by the pertinent FmHA State Director. Losses eligible for loans include those to land, improvement, and other appurtenances that are or will be used in the production of crops (including aquaculture) or livestock, and may include farm residences as well. Again, coastal obligations were not possible to identify; however, nationwide, roughly $2.9 billion in loans were made in FY 1979. The Corp of Engineers under the direction of FEMA performs emergency work to repair local flood protection works.

c. Disaster planning

The Disaster Relief Act requires two important kinds of planning. First, Section 201 of the Disaster Relief Act of 1979 authorizes a disaster preparedness program to assist states (1) to prepare for the expeditious provision of disaster relief, (2) to mitigate potential disaster effects on persons and property through warning, evacuation, and emergency protective measures, and (3) to reduce the effects of hazards through effective land use and construction practice, appropriate legislation and enforcement, dissemination of disaster related information, and elimination or lessening of disaster producing events. Each state has received an initial development grant of up to $250,000 for the development of plans, programs, and capabilities for disaster preparedness and prevention, and each state has completed a predisaster plan. Annual improvement grants of up to $25,000 may be awarded provided states (a) maintain a current state emergency plan which takes into account the kinds of disaster to which each state is most vulnerable and the associated requirements for disaster response and mitigation, (b) provide disaster preparedness assistance to local jurisdictions, and (c) incorporate into the emergency plan appropriate environmental policies and procedures.

Second, Section 406 of the Disaster Relief Act provides:

> As a condition of any disaster loan or grant made under the provisions of this chapter, . . . the state or local government shall agree that the natural hazards in the areas in which the proceeds of the grants or loans are to be used shall be evaluated and appropriate action shall be taken to mitigate such hazards, including safe land use and construction practices, in accordance with standards prescribed or approved by the President after consultation with the appropriate elected officials of general purpose local governments. . . .

This section requires preparation of a postdisaster mitigation plan to guide reconstruction; it thus offers an excellent opportunity to reduce the people

and property at risk -- and thereby to avoid a simple return to the preflood status quo.

FEMA's regulations implementing Section 406 require that the Federal/State Agreement prepared following declaration of a major disaster contain a hazard mitigation clause which commits the state (a) to assure enforcement of grant conditions requiring hazard mitigation actions, (b) to prepare and submit to FEMA within 180 days of the declaration hazard mitigation plans for the affected areas, and (c) to review and update disaster mitigation portions of state emergency plans. Procedurally, this requirement is implemented by means of a FEMA/State survey team which surveys the disaster affected area as soon as possible following the disaster declaration for the purpose of identifying and evaluating significant hazards in the area and recommending appropriate hazard mitigation measures, including flood control measures, land use regulations, and construction standards. Concurrent with the efforts of the survey team, a FEMA/State planning team evaluates existing local or state hazard mitigation plans, with particular attention given to the adequacy of plans for warning and evacuation, and recommends revisions to such plans or adoption of specific measures where no plans exist. In response to the recommendations of the survey and planning teams, FEMA may adopt standards for grants and loans and, after consultation with the Governor, require preparation or revision of state and local hazard mitigation plans. In deciding whether to impose a requirement on local government, FEMA's regulations require that consideration be given to "the opportunities presented for effective hazard mitigation, the size and composition of the local government, the local government's authority to regulate land use and to require safe construction practices, and the local government's exercise of such authority." 44 CFR 205.405(a).

2. Recommendations

The postdisaster period is a critical time for flood hazard mitigation for several reasons. First, it is a time in which fundamental land use decisions are made that determine the pattern of development for years to come -- or at least until the next major flood disaster. Second, the Federal investment in disaster relief is substantial -- at least $3.2 billion in FY 1979. Sound decisions, therefore, can avoid the necessity for similar future expenditures. And third, the postdisaster period provides a focus for public attention; sound decisions then can serve an important public education function and establish important precedents for other areas. The postdisaster period is also the area of Federal flood policy where the opportunities for improvement are greatest.

a. Hazard mitigation planning

Section 406 reflects congressional recognition of the important long-term implications of investment decisions in the postdisaster period and, therefore, of the significant opportunity to minimize future losses through sound land use management. The promise of Section 406, however, has not been achieved.

Although FEMA's regulations identify land use regulation as an appropriate measure for inclusion in a hazard mitigation plan, such measures are not required. Indeed, FEMA's regulations provide neither guidance for preparation of such plans nor criteria for approving them once prepared. Instead, considerable discretion is left to the FEMA Regional Director, in consultation with the Governor and local governments, in applying the requirements of Section 406. As a consequence, postdisaster hazard mitigation plans typically have been general in content, particularly with respect to land use practices, and have emphasized warning and evacuation efforts and provision of emergency assistance. Short term recovery has tended to be the focus rather than long term hazard mitigation. More detailed requirements in FEMA's regulations would do much to improve such plans.

A more important reason for Section 406's failure to realize its full promise is that it is possible to develop a timely and meaningful plan for hazard mitigation immediately following a disaster. In submitting Arizona's hazard mitigation plan following flooding in late 1978, for example, Governor Babbitt noted that "the ninety-day time frame precludes serious consideration of many long-term solutions to a major problem." Moreover, although the need is greatest then, all of the political, emotional, and economic factors argue that an emergency period is the wrong time to make hard land use decisions -- and effective flood hazard mitigation requires hard decisions.

The experience in Gulf Shores, Alabama, provides an excellent example. A resort and primarily vacation home community located on a sandy spit at the eastern entrance to Mobile Bay, the town of Gulf Shores was virtually destroyed by Hurricane Frederic. Immediately following the disaster, the State began work on a reconstruction plan. Although a no growth alternative was considered, the State's preferred option permitted a considerable increase in population and property investment over prehurricane levels -- notwithstanding the fact that in some locations the hurricane had eliminated the protective dune system and had scoured the sand so severely that sewer and water systems were unusable and in many areas the surface grade was just above the level of the aquifer. In response, the town submitted applications for Federal assistance to build expanded sewer and water systems. A loan offer from NOAA's Coastal Energy Impact Program would have required water system hookup limitations and zoning changes to impose setback and elevation requirements to minimize the risk of future damage. The town declined the loan offer rather than accept growth-limiting conditions and is now seeking to fund the water system entirely through State funds. In addition, the town is approving septic tank installations that "satisfy" the requirement that septic systems be elevated five feet above the aquifer by placing them above grade on clay pads and in filled sand. Redevelopment of Gulf Shores is thus proceeding without assurance that damages from the next hurricane will not simply repeat those of Frederic.10/

10/ A further illustration is provided by a restaurant which has been rebuilt on pilings below the line of high tide -- even though those structures built behind the primary dunes suffered far less damage from Frederic than those located on the water.

Nor has predisaster preparedness planning under Section 201 filled the void. Although Section 201 lists as one of the purposes of such planning the reduction of the effects of hazards through sound land use and construction practices, state disaster preparedness plans again have typically focused on warning, evacuation, and emergency relief procedures rather than longterm hazard mitigation.

By way of contrast, an ongoing effort in Puerto Rico illustrates the potential of comprehensive predisaster and postdisaster hazard mitigation planning. In 1979 two major hurricanes, David and Frederic, caused considerable damage in Puerto Rico. In both instances, a hazard mitigation plan, beyond civil defense functions, was not in place and could not be developed in time to be used in rehabilitation. Accordingly the FEMA/ Puerto Rico disaster assistance agreement included provisions to require hazard mitigation as a condition of further Federal disaster aid. FEMA established a mitigation section in its Puerto Rico office and, once emergency activities were under control, initiated efforts on hazard mitigation. To conduct hazard mitigation planning, the Commonwealth established a task force of Commonwealth, municipal, and Federal agencies. Significantly, the task force established a work program that called for completion of hazard mitigation plans before the next hurricane season.

An overview of the Commonwealth system and needs has been completed as has an islandwide mitigation plan. The overview study concluded that: (a) the flood hazard in Puerto Rico is severe, (b) there is insufficient awareness of the flood hazard and of what can be done to reduce the hazard and its impacts, (c) a coordinated program of flood hazard management does not currently exist in Puerto Rico, and (d) Puerto Rico needs to develop a coordinated flood hazard management program. The islandwide mitigation plan contains an overall hazard management strategy which emphasizes relocation and elevation of residences as the most effective means of hazard reduction, identifies specific tasks to be undertaken to identify flood hazards and improve public awareness, establishes a lead agency, and most importantly, sets forth the steps to be taken when mitigation opportunities occur following a disaster. As a major part of this effort, site specific hazard mitigation plans are being prepared for the most severely damaged areas. When completed, the plans may be adopted as part of the Commonwealth's approved coastal zone management program. The Commonwealth intends that the plan will meet Section 406 postdisaster plan requirements.

These considerations argue strongly that the difficult decisions required for an effective hazard mitigation plan should be made, at least in broad scope, before a disaster occurs and that postdisaster investments should be made in conformance with that plan. Many state coastal management programs already contain an active coastal hazard element, and recent amendments to the Coastal Zone Mangement Act (CZMA) require that

states devote greater attention to this issue. "The Congress finds and declares that it is the national policy to

> (2) ... provide for
>
> (B) the management of coastal development to minimize the loss of life and property caused by improper development in flood-prone, storm surge, geological hazard and erosion-prone areas and in areas of subsidence and saltwater intrustion, and by the destruction of natural protection features such as beaches, dunes, wetlands, and barrier islands,"11/

FEMA's regulations thus could rely on state planning through the coastal zone management program to satisfy at least part of Section 406; however, funds will need to be made available to assist detailed local planning in addition to statewide efforts under the CZMA. In addition, although Section 406 provides a basis for FEMA to control funding under the Disaster Relief Act, funding by other agencies is unaffected by Section 406. No mechanism exists to assure that other Federal assistance in the postdisaster period is consistent with a Section 406 hazard mitigation plan. The Director of the Office of Management and Budget by memorandum dated July 10, 1980 directed that "all Federal programs that provide construction funds and long-term recovery assistance must use common flood disaster planning and postflood recovery practices". An interagency agreement has been developed and signed by all participating Federal agencies that in part supports the recommendations which follow.

Recommendations:

1. FEMA should amend its regulations to set forth detailed requirements for approval of hazard mitigation plans under Section 406, to encourage that planning to satisfy such requirements take place under Section 201 before a disaster occurs, and to strengthen the long-term mitigation component of planning under Section 201.

2. Section 406 should be amended to require as a condition of all Federal assistance except for emergency relief necessary to save lives and property in the postdisaster period that a comprehensive long term hazard mitigation plan exists which meets detailed criteria established by FEMA and that such assistance is not inconsistent with the mitigation plan.

b. Technical assistance

State and local planning processes utilimately determine the amount and nature of development in coastal hazard areas. Technical and financial assistance (through initial planning grants and annual maintenance grants) has been made available for communities to develop

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11/ CZM Improvement Act of 1980.

emergency preparedness plans under Section 201 of the Disaster Relief Act of 1974 . However, funding and the availability of technical assistance for pre- and postdisaster hazard related land use planning has been limited, intermittent, and not comprehensive.

The principal Federal efforts have been through the Department of Housing and Urban Development's (HUD) 701 program, the Corps of Engineers' flood control planning and floodplain management services program, the National Flood Insurance Program, the Disaster Relief Act, and the CZMA. Each of these efforts, however, falls short of that needed to assist state and local governments to conduct comprehensive hazard mitigation planning:

--As a result of recent policy changes, HUD 701 grants are no longer available for hazards planning.

--Although Section 73 of the Water Resources Development Act encourages consideration of nonstructural alternatives to flood control projects, planning is limited in scope to locate protection project areas.

--FIA recently published interim rules establishing a State Assistance Program designed to assist states to develop floodplain management expertise; coordinate Federal, state, and local aspects of the Flood Insurance Program; and provide technical assistance to local officials. Although a useful and needed initiative, this effort is aimed at developing states' capacities to participate in hazard activities rather than development of actual plans.

--Funds are available under Section 201 to assist local governments to prepare and maintain annually predisaster preparedness plans; however, such plans have stressed emergency procedures and no funds are available to states or local governments to conduct hazard mitigation planning under Section 406.

--The CZMA was amended in 1976 to require states to develop as part of their coastal management programs a shoreline erosion planning process. All approved states have developed such processes, but few comprehensive hazard mitigation plans have resulted. Puerto Rico's efforts, described above, are an exception to this rule. Amendments in 1980 to the CZMA authorize OCZM to require states to address up to 30 percent of their funds to National Interest activities one of which is coastal hazards.

If prepared correctly, a single plan could satisfy the requirements of Sections 201 and 406 of the Disaster Relief Act, provide a basis for relocation efforts under Section 1362 of the Flood Insurance Act, satisfy the land use controls required for flood insurance eligibility, and meet the requirements of the recent amendments to the CZMA. Preparing such a plan, however, will require coordinated technical assistance and funding. The Office of Management and Budget has recently formed an interagency

task force chaired by FEMA which will, among other things, develop procedures to coordinate technical assistance to promote the use of nonstructural measures for flood loss reduction and to encourage preparation of predisaster plans. This initiative is needed and should greatly assist the planning effort described above. However, we believe, as discussed above, that stronger incentives for predisaster planning are needed and that funding for such planning should be provided.

Recommendations

1. The recently established interagency task force should assume as one of its charges the focusing of available financial and technical assistance to predisaster hazard mitigation planning.

2. Section 201 of the Disaster Relief Act should be amended to provide funding assistance to state and local governments specifically for preparation of predisaster flood hazard mitigation plans. Alternatively, increased funding should be made available under Section 406 for preparation of plans that will satisfy the detailed criteria for approval of Section 406 plans recommended above.

c. Coordination of other Federal disaster assistance programs

As indicated above, the SBA and FmHA disaster loan programs are important sources of funds for construction efforts in coastal hazard areas. Two important facts about these programs, however, should be noted. First, although funds under these programs can be used for relocation of structures outside of flood hazard areas, their use for this purpose has been limited. SBA loans, for example, are intended to restore homes or business properties as nearly as possible to predisaster condition. In the past, this statutory purpose was interpreted to require reconstruction on the existing site. SBA has recently amended its regulations to permit use of loan funds for construction of new facilities on a different site and, like FEMA's "constructive total loss" policy, to provide funds for relocation covering the entire value of the property where the property is located in a floodprone area and rebuilding is otherwise prohibited. Absent such a restriction on rebuilding, however, funds are available for construction in floodprone areas. FmHA similarly allows funds to be used for construction in a new location, but requires relocation only where flood insurance has been denied in a special flood area. Since FIA does not believe it has the statutory discretion to deny flood insurance, this provision may be moot.12/

12/ As noted above, FEMA's recent regulations provide that flood insurance will be denied in cases where FEMA has declined based on E.O. 11988 to provide postdisaster assistance under the Disaster Relief Act. By amendment to FEMA's FY 1981 funding authorization bill Congress stayed this provision of the FEMA regulations pending public review and comment. In any case, it applies only if a major disaster has been declared.

Second, funds under both the SBA and FmHA programs can be made available even if a major disaster has not been declared under the Disaster Relief Act -- an SBA declared disaster triggers SBA funds and an FmHA declared disaster makes available both SBA and FmHA funds. In such cases, investments in flood hazard areas are made without benefit of a hazard mitigation plan prepared under the Disaster Relief Act.13/ In those circumstances, only the strictures of E.O. 11988 are applicable to guide Federal decisions; the weakness of agency implementation of E.O. 11988 discussed above suggests strongly that more precise limitations on Federal investments are desirable.

Recommendations

1. The Consolidated Farm and Rural Development Act and the Small Business Act should be amended to require relocation from coastal high hazard areas, and to encourage relocation from other floodprone areas, as a condition of assistance under the Acts.

2. The Consolidated Farm and Rural Development Act and the Small Business Act should be amended to require compliance with a hazard mitigation plan adopted under Sections 201 and 406 of the Disaster Relief Act, as amended in accordance with the recommendations above. Since such plans will (if the recommendations of this Review are adopted) be prepared in advance of flood disasters, this amendment should require compliance with an applicable plan even if a major disaster has not been declared.

3. SBA and FmHA should enter into memoranda of understanding as part of the OMB initiated interagency review noted above which will assure coordination of SBA and FmHA assistance programs with FEMA's disaster efforts and which commits SBA and FmHA to use available funds to the extent possible to implement the provisions of pre- or postdisaster flood hazard mitigation plans, including in particular the relocation provisions of such plans.

13/ The SBA and FmHA are not obliged by law to follow a Section 406 plan, as noted above. Such a plan, however, at least can provide a useful guide for Federal investment decisions.

Chapter II: Federal Support of Infrastructure Development

Chapter II: Federal Support of Infrastructure Development

I. Introduction

The President's August 2, 1979, Environmental Message announced a national coastal protection policy that included as an essential element the protection of significant natural coastal resources such as wetlands, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife. The recent amendments to the Coastal Zone Management Act specified that such protection is a national policy and created greater incentives to operate coastal management programs to assure that protection. The President's message expressed concern as well that despite substantial achievements in improving the protection of these resources, Federal programs were still contributing to their degradation. This portion of the Federal Coastal Programs Review has reviewed key Federal programs that support infrastructure development (i.e., the installation of public facilities, such as roads, bridges, sewers, and water supply systems essential to community development) to determine whether implementation of those programs conflicts with national coastal protection objectives and contributes to environmentally unsound development.

Infrastructure development results in clear and dramatic effects on coastal resources. Infrastructure projects carry with them the potential for a wide array of impacts on natural resources, from the direct effects attributable to construction of the project (e.g., placement of fill in a wetland to accommodate a road bed) to the less visible and often overlooked indirect impacts of population growth and development (e.g., by routing a new road through an undeveloped, previously inaccessible area or by expanding sewage treatment capacity).

Although infrastructure projects are normally initiated by state or local interests, their completion in most cases depends on Federal support -- through direct construction, financial assistance, or permit approval. In this manner, Federal programs are often compelling factors in determining the pattern of development in the coastal zone.

The number of Federal programs involved in infrastructure decisions is large; this review identified at the outset fifteen programs with substantial impact on infrastructure development in coastal areas. The review does not evaluate all of the Federal programs which influence infrastructure investments -- limitations on time and other resources made such an effort impractical. Instead, several key programs were selected for review. These programs include:

- the Environmental Protection Agency's Section 201 Wastewater Treatment Construction Grants Program, which provides grants to local communities for the construction of public wastewater treatment facilities to solve identified water quality problems;

- the Federal Highway Administration's Federal Aid Highway Program, which provides financial assistance to states for the construction of major highway systems and improvements;

- the Economic Development Administration's Economic Development Assistance Programs, which provide financial and technical assistance to states, localities, port authorities, and the private sector in the construction of public facilities and other development projects;

- the National Oceanic and Atmospheric Administration's Coastal Energy Impact Program, which provides financial assistance to states and local communities to mitigate the impacts of coastal energy development by, among other methods, construction of public facilities;

- the Corps of Engineers' Civil Works Program and the Water Resources Council Principles and Standards, through which water management projects authorized by Congress, including measures to improve navigation in channels and harbors, flood control, prevention of beach erosion, hurricane protection, water-based recreation, and water supply, are carried out.

- the Farmers Home Administration's programs, which provide financial assistance for conservation, development, use and control of water, the installation or improvement of drainage or waste disposal facilities, recreational developments and other essential community services;

- the Coast Guard's Bridge Permit Program, which issues permits for the location and construction of bridges in or over navigable waterways; and

- the Corps of Engineers' Section 404 and Section 10 permit programs, which prohibit the placement of dredged or fill material in the waters of the United States (including wetlands) without a permit issued by the Corps in accordance with guidelines developed by EPA and the construction of any structures in or over navigable waters without a Corps permit.

That other programs have been omitted from the review does not indicate a lack of significant effects on coastal resources. The programs chosen for review have the most salient impacts because they provide substantial investments of Federal funds -- over two billion dollars in fiscal year 1979 -- or require key approvals in the coastal infrastructure development process.

The review focuses on the decisionmaking processes of the selected agencies; primarily whether agency policies, procedures, and regulations are structured to ensure that agency decisions are consistent with the national coastal protection policy, as embodied in the National Environmental Policy Act, the President's Executive Orders on Wetlands Protection and Floodplain Management, and the Coastal Zone Management Act. The review was not able to assess conclusively the extent to which Federal agency decisions are resulting in environmentally unsound development for two reasons. First, the President's Floodplains and Wetlands Executive Orders should have a major effect on decisionmaking in coastal areas, and, although the orders are three years old, some agencies are just beginning to implement them. Second, a complete assessment of the "on the ground" effects of these programs would require a commitment of time and resources beyond those available for this broad scope review of Federal programs.

The review emphasizes improvements needed to guarantee that coastal resource values are fully considered in Federal decisions. This approach, however, does not do full justice to the positive achievements that Federal agencies have made toward environmentally sound decisionmaking. The past ten years have seen enormous strides in this regard. This review has found that the existence of Federal environmental protection policies embodied in the National Environmental Policy Act, the Floodplains and Wetlands Executive Orders, and the Coastal Zone Management Act has often discouraged the development of projects that would result in egregious environmental damage. In that perspective, the recommendations in this review are for refinements in an already much improved system. The analysis that follows identifies and recommends changes in Federal infrastructure programs to improve further the protection of significant natural coastal resources.

II. General Conclusions and Recommendations

Over the past several years Federal agencies have made significant progress towards assuring that protection of significant coastal resources 1/ is fully considered in agency decisionmaking. Implementation of the Executive Orders on Floodplain Management and Wetlands Protection, the consistency provisions of the Coastal Zone Management Act, and revised procedures to implement the procedural provisions of the National Environmental Policy Act should further strengthen the Federal commitment to protect valuable and irreplaceable coastal resources. Nevertheless, this review has identified lingering inadequacies.

A. Information concerning Federal infrastructure decisions in coastal areas and the impacts of such decisions is diffuse, difficult to obtain, and not easily available to decisionmakers.

One of the immediate problems this review encountered in trying to assess Federal infrastructure programs is the difficulty in assembling information with respect to agency decisions in coastal areas. For example, records of individual permit decisions are not kept in a central location by the Corps of Engineers, but are retained in each of the district offices. As a consequence, determining the number of acres of coastal wetlands authorized by the Corps to be filled in a given year requires the inspection of individual permits at each of the 18 district offices with jurisdiction over coastal areas. The assessment of the cumulative impacts on coastal resources of the Corps' regulatory decisions is thus difficult and, more importantly, a task not routinely performed by the Corps in making permit decisions. Similar problems arise at other agencies, such as EPA, FHWA, EDA, and FmHA, whose programs are administered regionally. Exceptions to this general rule are NOAA's Coastal Energy Impact Program and the Coast Guard's Bridge Administration Program, which have central repositories of project information. Even these programs do not have information systems that permit the easy retrieval of coastal environmental impact information.

Even at the regional or district level, Federal programs do not generally keep separate records of the environmental impacts on coastal resources of their project decisions, and a mechanism for sharing that information among agencies in particular regions does not exist. Because of the lack of information regarding project decisions made by other agencies, an agency cannot accurately assess the cumulative impacts of multiple Federal decisions in a particular region. For example, NOAA was recently requested to fund the expansion and relocation of water lines in Gulf Shores, Alabama, to accommodate a highway improvement. The impact of the proposed action was determined

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1/ As used throughout this report the term "significant coastal resources" refers to those natural resources that were expressly enumerated in the President's August 1979 Environmental Message -- i.e., wetlands, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife.

by NOAA not to be significant. After Hurricane Frederic damaged much of the town, NOAA learned that the proposed CEIP project was a small part of a larger water redevelopment proposal that had been submitted to the Department of Housing and Urban Development. While this fact was discovered before final action was taken, the discovery was not the result of deliberate information sharing. The lack of information exchange among Federal agencies may permit some degree of "shopping" by project applicants for funding or permit approvals. Because a particular project may be eligible for funding by several agencies, an applicant has some freedom in seeking funding, and one agency may not know that funding for a given project has been denied by another agency for environmental reasons.

Although the impacts of an individual project may not be significant, the cumulative effects of a number of "not significant" decisions may result in serious environmental degradation. The Council on Environmental Quality's 1979 Annual Report, for example, reported that seemingly unrelated human activities ranging from airport construction to resort development destroyed over 30 percent of the Nation's estuarine habitat in the 20-year period from 1950-1969. Although this example is taken from a period before many of the existing environmental safeguards were enacted, it illustrates that without timely information exchange among and within agencies effective protection of coastal resources cannot be assured.

Recommendations:

1. The Council on Environmental Quality should be directed to convene an interagency task force to design and recommend a system for sharing information on the environmental impacts on significant coastal resources of proposed, ongoing, and completed projects. CEQ should be directed to report back to the President within one year with recommendations for improving the exchange of environmental impact information among Federal agencies.

2. On the basis of CEQ recommendations Federal agencies conducting infrastructure programs should be directed to implement systems for collecting, summarizing and evaluating information on the impacts of their programs on significant coastal resources.

B. Federal coastal protection policies would be more effective if brought into the decisionmaking process at an earlier stage.

Although infrastructure projects proposed for Federal funding are usually initiated by state or local interests, these projects must be developed and selected in accordance with federally approved planning or prioritization processes. For example, wastewater treatment facilities must be selected

through an EPA-approved state priority listing process; eligibility for Federal highway funds is determined in accordance with an FHWA-approved state action plan; and CEIP funds are made available pursuant to a NOAA-approved intrastate allocation process.

These federally approved project selection mechanisms, however, do not contain specific policy guidance regarding national coastal protection goals. For example, although Federal Highway Administration approved state action plans (SAP) are the basic framework used by states to determine the configuration of their federally funded highway systems, the SAPs typically contain only very general guidance with respect to national environmental protection goals. In addition, Federal approval of these state plans is generally considered by the Federal agencies as an action not subject to the National Environmental Policy Act or the Executive Orders on Floodplain Management and Wetlands Protection. As a result the national coastal protection concerns are frequently not fully embodied in the processes that determine which projects are proposed for Federal approval.

Federal coastal protection goals are brought to bear once a site specific project has been presented to the Federal decisionmaker. However, once a project is proposed for funding sufficient political and special interest pressure for approval may have developed to make difficult rejection or substantial modification of the proposal. The Federal decisionmaker is therefore hampered in preventing environmental damage by avoiding projects that are incompatible with national coastal resource protection goals.

Recommendation:

Federal agencies should amend their regulations to meet their responsibilities under NEPA and the Executive Orders to require states to incorporate fully in Federally approved project selection or planning processes the national resource protection policies set forth in NEPA and the Executive Orders. State project selection processes already approved should be amended where necessary to incorporate these policies.

C. The secondary and cumulative effects of infrastructure development projects are often not adequately considered during project review.

Although the Floodplain and Wetlands Executive Orders and NEPA are not so limited, Federal agency policies and procedures for protecting significant natural resources tend to concentrate on mitigating or avoiding the direct or cumulative impacts of infrastructure projects. A recent permit decision on the Florida Keys illustrates the point. In May 1980, the COE approved Section 10 and 404 permits to install approximately 10 miles of pipe for carrying potable water to the Florida Keys. This project is part of a $53

million water supply system financed by the Farmers Home Administration that will connect a pumping station on the mainland with Key West. The COE environmental assessment contains a thorough analysis of and concern for the direct impacts of construction. The permit contains special conditions that hold the contractor liable for any crocodiles (protected under the Endangered Species Act) killed during construction and requires the replacement of any mangroves permanently lost due to project construction with an equivalent acreage of replanted mangroves. The assessment, however, presents no discussion of the potential for induced development on the Florida Keys and its potential adverse consequences -- e.g., increased damage to coastal resources; increased risk of property loss from hurricanes; increased Federal expenditures for hurricane protection and shoreline stabilization.

In part, the lack of attention to induced and cumulative impacts can be traced to the difficulty of identifying these impacts with certainty. Nevertheless, secondary impacts such as induced population growth and the cumulative effects of several seemingly unrelated projects in an area are often far more damaging to coastal resources than the direct impacts of project construction. An unintended effect of such induced development is often the further expenditure of Federal funds to "correct" situations that have developed as a result of an initial Federal investment or approval. For example, the Monmouth County Planning Board (New Jersey) reports that the Northeast Monmouth County Regional Wastewater Treatment Facility has made possible the development of high density housing (townhouse, apartments, highrise condominiums) in coastal towns previously served by small treatment plants. According to the Board, this secondary development has destroyed wetlands, increased traffic congestion, local demands for better highways, and air pollution and exposed more people and property to the hazards of coastal storms and flooding (increasing the demand for flood protection).

Recommendations:

1. Federal agencies should be directed to develop programs to improve procedures and methodologies specific to their programs for evaluating the secondary and cumulative impacts of project decisions. Federal agencies should be directed to report to CEQ on the status of their efforts on a yearly basis.

2. Federal agencies should adopt a policy of giving equal weight to primary, secondary and cumulative impacts that are identified with reasonable certainty during the project development and review process when evaluating alternatives to an action -- i.e., secondary or cumulative impacts should not be given less weight only because of their nature.

D. While adherence to the Executive Orders on Floodplain Management and Wetlands Protection should substantially reduce Federal decisions in favor of environmentally unsound development, agency implementation of the Orders has been uneven.

The Executive Orders on Floodplain Management and Wetlands Protection establish as an element of Federal coastal protection policy the avoidance of actions which adversely affect the natural functions of floodplains and wetlands unless no practicable alternative exists. The President's Water Resources Council has issued detailed guidelines for implementing the Floodplain Executive Order. However, the unevenness of the agency responses to the Orders and guidelines may undercut their promise.

The range of agency interpretations has been broad. Some agencies have established detailed procedures and policies for actions affecting floodplains and wetlands patterned after the WRC's guidelines. For example, EDA has developed excellent detailed floodplain policies and procedures. Some agencies such as DOT and FHWA have taken a more narrow view of their responsibilities, relying merely on general paraphrasing of the executive orders. Other agencies such as the Coast Guard have chosen not to issue program-specific floodplain and wetlands procedures and have chosen instead to adopt procedures established by their parent agencies. Still other agencies, such as the Farmer's Home Administration have yet to issue final procedures even though the Executive Orders were promulgated nearly three years ago.

In part, the diversity of agency responses may reflect ambiguities in the two executive orders that render them susceptible to varying interpretations. Both executive orders call on agencies to provide "leadership" and to "take action" to minimize the degradation of the natural and beneficial values of floodplains and wetlands. E.O. 11988 directs Federal agencies to "avoid direct or indirect support of floodplain development;" and E.O. 11990 directs Federal agencies to "avoid direct or indirect support of new construction in wetlands". Despite the apparent policy to avoid secondary impacts on floodplains or wetlands, specific requirements in the executive orders to seek alternatives and mitigate environmental losses are imposed only if a proposed action is located in a floodplain or wetland. In response to specific direction in the Floodplains Executive Order, the Water Resources Council has issued guidelines to assist the agencies in developing procedures to implement the executive order. The guidelines interpret the executive order to apply to activities in or affecting the floodplain; however, these guidelines are only advisory, and no comparable guidelines have been prepared for the Wetlands Executive Order.

Further obscuring the specific contours of Federal coastal protection policy is the exemption in the Wetlands Executive Order of the issuance by Federal agencies of "permits, licenses or allocations to private parties for activities involving wetlands on non-Federal property"; E.O. 11988 contains no similar exemption. This exemption has contributed to the illusion that Federal permitting actions in wetlands are not subject to the vigorous review required under the WRC's guidelines implementing the Floodplains Executive

Order. In reality, however, this exemption has significance only in terms of wetlands located outside of floodplains. Since wetlands functions constitute floodplain values, when the wetland is located within a floodplain -- as is the case for over 90 percent of the Nation's wetlands -- Federal permits in such areas are subject to the provisions of E.O. 11988. As a result, agencies issuing permits to private parties in non-Federal wetlands are not exempt from the review mandated by the Floodplains Executive Order. Therefore, the practical effect of this exemption should be very limited.

The resulting imprecision in the Federal approach to protecting natural floodplain and wetland values poses a potential threat to coastal resource protection since Federal decisionmakers are continually asked to support questionable development in coastal floodplain and wetlands areas. For example FHWA recently approved a $37 million grant to rebuild a causeway to Dauphine Island that was destroyed by Hurricane Frederic. EPA is considering funding a sewage treatment plant on this same barrier island that would provide capacity for an additional 2,000 residences. Similarly, the Coast Guard recently approved a permit for a bridge to an undeveloped island off South Carolina whose sole purpose was to provide vehicular access for a future housing development. The COE is deciding whether to issue permits for a housing development near Marco Island, Florida, that could destroy over 4,000 acres of valuable coastal wetlands. FmHA is funding a $53 million water supply line that would significantly increase the amount of available water to and therefore increase the probability of growth on the Florida Keys -- a coastal area extremely vulnerable to hurricane damage.

In short, although it is too early to assess fully the "on the ground" impacts of the Executive Orders, it is fair to say that Federal agencies have not uniformly demonstrated the leadership called for in each of the Executive Orders to minimize the loss or degradation of wetlands values, and to restore and preserve the natural and beneficial values served by floodplains. As a result Federal actions continue to threaten significant coastal resources.

Recommendations:

1. The Water Resources Council (WRC) is required to "periodically" evaluate agency implementation of the Floodplain Executive Order. To facilitate such oversight, Federal agencies should be directed to develop, in consulation with the WRC, mechanisms for regularly reporting on and evaluating implementation of the Order and to cooperate fully in any evaluation conducted by WRC of agency implementation of the Order.

2. To assure that the Floodplains Executive Order is vigorously and evenly implemented, legislation should be enacted codifying the Order's essential policies. Such legislation would have the beneficial attributes of: providing clear congressional sanction to the policies of the Order; requiring agency issuance of implementing regulations by a certain date; providing a basis for vigorous lead agency oversight by CEQ or WRC for

compliance with the Order's policies and for issuance of binding regulations governing implementation of the Order (much like CEQ's NEPA regulations); and enabling judicial review and invalidation of agency actions not in compliance with the Order.

If legislation is not passed, the WRC should be directed to issue expanded guidelines implementing the Floodplains Executive Order which explicitly recognizes the vulnerability of and public benefits derived from significant coastal resources in floodplains. These WRC guidelines should be binding on the Federal agencies just as the Council on Environmental Quality's regulations implementing NEPA are binding on Federal agencies.

3. The Wetlands Order should be amended to eliminate the exemption for the issuance of Federal permits, licenses, or allocations to private parties for activities involving wetlands on non-Federal lands. The policies set forth in that Order should apply fully to all Federal programs.

4. A new coastal resource protection executive order should be issued which embodies the following principles:

- that actions adversely affecting significant coastal resources are contrary to the national interest

- that actions which adversely affect significant coastal resources should not be performed unless the proponent of the action can clearly demonstrate that:

  (a) there is a public need for the action;

  (b) the public need outweighs the detriment to the coastal resource; and

  (c) there are no less environmentally damaging practicable alternatives;

- that actions performed despite losses of coastal resources be accompanied by requirements for fully mitigating such losses unless the proponent of the action can clearly demonstrate that full mitigation is not practicable.

The CEQ should be directed to develop detailed guidelines for implementing the coastal resources executive order.

E. <u>Agency policies with respect to protection of significant coastal resources are frequently too vague to assure consistent and predictable implementation</u>.

Federal agencies generally have good broad statements of Federal environmental protection policy. For example, it is the policy of the Department of Transportation to:

(1) avoid or minimize adverse effects wherever possible;

(2) restore or enhance environmental quality to the fullest extent practicable;

(3) preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites;

(4) preserve, restore, and improve wetlands;

(5) improve the urban physical, social and economic environment;

(6) increase access to opportunities for disadvantaged persons, and

(7) utilize a systematic, interdisciplinary approach in planning and decisionmaking which may have an impact on the environment.

However, agencies do not generally have specific policies for protecting coastal resources per se. In some cases, wetlands, beaches, barrier islands, wildlife habitat, fish and shellfish are singled out as worthy of special consideration, but little guidance is provided as to how the agency will respond when a proposed activity adversely impacts those resources. Environmental reviews tend to be procedural with few restrictions or prohibitions on the type of projects that can be approved.

The absence of clear, substantive environmental protection guides reflects that decisionmaking with respect to infrastructure projects is fundamentally a balancing exercise -- an exercise in which the agency's principal statutory mission (whether it be providing safe, efficient road transportation systems in the case of the Federal Highway Administration or restoring the economic health of areas burdened with high unemployment and low income in the case of the Economic Development Administration) has primacy and typically in which measurable economic benefits are weighed against difficult-to-quantify environmental values. In such a calculus, decisions in favor of projects are often the rule, and the issue in most cases is the extent of environmental harm that will accompany the project.

Admittedly, the Executive Orders have taken a significant step toward establishing substantive decisionmaking criteria with respect to wetlands and floodplains. However, the Orders direct agencies not to take actions only when "practicable" alternatives exist. The determination of practicability, which in the case of most agencies includes economic, technological, and logistical factors, is itself fundamentally a balancing exercise without clear boundaries for decision.2/

As a consequence, decisions affecting coastal resources are left to the discretion of the action agency and its interpretation of certain key words such as "practicable," "significant," "major," "notable," and "substantial" -- terms that are defined only vaguely or not at all by the agencies. For example, even the WRC guidelines define "practicable" as "capable of being done within existing constraints" and indicate that the "test of what is practicable depends upon the situation and includes consideration of the pertinent factors, such as environment, cost or technology." DOT's regulations implementing the wetlands executive order neither define practicable nor refer to the WRC definition. FHWA's floodplain procedures, on the other hand, define "practicable" as "capable of being done within reasonable natural, social, or economic constraints."

The problem of imprecision is compounded by the fact that in most cases decisions on infrastructure projects are made by regional or district offices without significant environmental review by headquarters. As noted in a Government Accounting Office study -- Improvements Needed in the Corps of Engineers Regulatory Program for Protecting the Nation Waters -- issued on December 23, 1977, the lack of "clear guidance for evaluating permit applications" contributes to the lack of "uniform protection" afforded wetlands. With EDA, COE, FmHA and FHWA all highly decentralized, the potential for nonuniform and ineffective protection of coastal resources is significant.

In particular, agencies lack clear policies in the following important areas:

1. Growth impacts --Relatively few agencies have adopted by regulation or otherwise an explicit policy to minimize growth impacts that adversely affect significant coastal resources. An exception is EPA's policy not to

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2/ Although it is impossible to establish generic definitions for certain key terms such as "practicable" or "significant" that will provide precise guidance under all circumstances, it is possible for Federal agencies to substantially improve the delineation of these concepts by means of specific examples within the context of each Federal program and based on operational experience.

award a grant for a new sewer system unless "the system would not afford capacity to new habitations or other establishments to be located in environmentally sensitive lands" such as wetlands, floodplains or prime agriculture lands (40 CFR 35.925-13). Yet, as noted above, growth induced by Federal infrastructure investments can be more damaging than the direct impacts of project construction.

While legitimate question may be raised about the propriety of the Federal Government's prohibiting growth altogether, it cannot be doubted that the resources at risk in coastal areas are of national significance and contribute substantially to the Nation's economic well-being. At the least, therefore, the Federal Government should not encourage growth that adversely affects these resources -- rather, its role should be limited to remedying existing problems (whether water quality, unsafe road conditions, or others) in such areas.

2. Unacceptable environmental damage -- As noted above, most project decisions represent a balancing or tradeoff of environmental and other concerns, with the tradeoff being made on an essentially ad hoc basis. There are very few policies or criteria to guide those tradeoffs--policies or criteria which indicate when an environmental loss is unacceptable. In the course of such tradeoffs, the higher the economic or social gain perceived to result from a proposed action, the greater the environmental destruction that will be tolerated.

A notable exception is the EPA/COE Section 404 Guidelines used to review permits for discharging dredged or fill material into coastal waters and wetlands. The Guidelines prohibit any discharges that would have an unacceptable environmental impact -- i.e., "no discharge of dredged or fill material will occur at a proposed disposal site in a navigable water if the Administrator of EPA determines ... that such discharge will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreation areas." (40 CFR 230.1(a)(2))

The consequences of the general absence of clear agency guidance to decisionmakers as to when environmental damage is unacceptable is that, while tradeoffs in individual cases may seem reasonable, no assurance exists that the total of all such tradeoffs in a region or along the entire coast is acceptable. Moreover, individual project decisions become in effect negotiations whose bottom lines become the starting points for the next round of negotiations. When it is considered that over 30 percent of the nation's wetlands have been destroyed, that over 60 percent of the Nation's barrier islands are developed, and that over 80 percent of the population is expected to reside in the Nation's coastal areas by 2000, the necessity for establishing limits on the acceptance of damage to coastal resources becomes clear.

3. Mitigation -- Although most agencies, and the executive orders, require adoption of measures to mitigate environmental damage as part of project approvals, few agencies provide clear guidance as to the precise circumstances under which mitigation is required and what measures constitute adequate mitigation. For example, FHWA procedures implementing the Floodplains Order require only that adverse impacts on the floodplain

be minimized -- "minimize" is defined as "to reduce to the smallest practicable amount or degree." No further guidance is provided on this issue. Mitigation measures which could be prescribed in the highway context include engineering design standards (e.g., elevation requirements for highways in wetlands areas or measures to control road surface runoff), restrictions on development along the right-of-way, or the creation of an equivalent amount of land for that destroyed during construction. Establishment of such standards in advance would provide some assurance that adequate mitigation would be applied in all cases and would minimize current regional disparity in decisionmaking.

Recommendations:

1. Federal agencies supporting infrastructure projects should be directed to adopt and implement clear and precise policies and criteria for minimizing adverse growth impacts on significant coastal resources. These policies and criteria should, at a minimum, provide that Federal support or approval shall not be provided to projects that permit or encourage new development that adversely affects such resources unless an overriding public benefit can clearly be demonstrated.

2. Federal agencies supporting infrastructure projects should be directed to amend their regulations to prescribe clear policies and criteria for determining when losses of significant coastal resources will be considered unacceptable and require project denial. Equal weight should be accorded to reasonably identified primary, secondary, and cumulative impacts when making this determination.

3. Federal agencies should be directed to develop and adopt program-specific policies and guidelines for mitigating adverse impacts on coastal resources. Such guidelines should establish clearly when mitigation will be required and what measures are appropriate and sufficient. Such guidelines should include design standards for construction projects and requirements for the creation of an equivalent amount of resource for that destroyed.

F. Postconstruction project monitoring by Federal agencies is minimal.

Federal approvals for infrastructure projects generally rest on conclusions about the unavoidable environmental harm from the project and the measures necessary to mitigate or avoid adverse environmental impacts. The validity of these conclusions, however, is seldom tested since post-construction monitoring of infrastructure projects is minimal. For example, both EDA and the Coast Guard report that they have insufficient resources to routinely monitor grant or permit conditions.

Without monitoring, Federal agencies are seldom able to test their predictions of environmental harm or the efficacy of particular mitigating

measures both to improve assessments for future projects and to decide whether additional protective measures are needed for particular projects. More importantly, enforcement of mitigation measures or other grant conditions is thereby impeded. As a result, Federal support of infrastructure projects may produce unanticipated environmental damage if public facilities are used in a manner not intended by the approving agency or if conditions imposed on project approval are disregarded by the applicant.

Resource limitations obviously preclude monitoring the effects of every project. Nevertheless, Federal agencies currently emphasize delivery of service (financial assistance, permits) to the virtual exclusion of monitoring. Efforts should be made to redress that imbalance.

Recommendation:

Agencies should be directed to develop and implement procedures for monitoring the impacts on coastal resources of infrastructure projects and for enforcing compliance with any mitigation requirements adopted as part of project approval. Agencies should report annually to CEQ on their monitoring and enforcement efforts.

G. Agency statements of coastal resource protection policy are not readily available to the public.

A final general finding of this review was the difficulty in many cases of locating all agency statements of policy and procedures for protecting coastal resources. Such information is often found both in published regulations and in various unpublished internal directives, memoranda, letters, and other documents not readily available to those outside the agency. For example, an important COE policy statement concerning mitigation measures appears in a letter from the Chief of Engineers to COE field offices. Understanding of agency policies -- both within and outside the agency -- would be greatly improved by consolidating such policies in a single, publicly available document, such as the Digest of Water Resources Policies and Authorities prepared by the Corps for its Civil Works Program.

Recommendation:

Agencies should be directed to consolidate their policies and procedures for protecting coastal resources in an appropriate document. This document should be updated as needed and made readily available to the public, applicants, and other interested persons.

III. Detailed Program Review

This section presents analyses of each of the Federal infrastructure programs chosen for review. Specific conclusions and recommendations follow each of the program discussions.

A. Wastewater Treatment Construction Grants Program Environmental Protection Agency

1. Program Description

The Environmental Protection Agency (EPA) provides financial assistance to municipalities pursuant to Section 201 of the Clean Water Act for the planning, design, and construction of publicly-owned wastewater treatment facilities. The wastewater treatment construction grants program is administered through ten regional offices that have primary authority to approve, condition or deny grants for wastewater treatment facilities. In fiscal years 1976-1979, EPA obligated a total of about $17.6 billion for construction of wastewater treatment facilities, of which roughly $7.3 billion went for projects in coastal counties.

Projects eligible for Section 201 construction funding include sewage treatment facilities (new, expanded, or upgraded); interceptor sewers (new or rehabilitated); sewage collection systems, including pumping stations (new, expanded or rehabilitated); and combined sewer overflow control systems for reducing, storing, treating, separating, or disposing of wastewater from combined storm and sanitary sewer systems. EPA provides up to 75 percent of the allowable project costs. The Federal match may be increased by an additional 10% for projects involving innovative and alternative technologies.

EPA establishes a yearly grant allotment for each state based on a Congressionally established formula. Grants from these funds for facility planning, design, and construction are provided directly to municipalities based on a state priority list which "must be designed to achieve optimum water quality management consistent with requirements of the Act". In establishing the priority list, states must consider the severity of the pollution problem, the existing population affected, the need for preservation of high quality waters, and any additional factors considered pertinent by the state. The priority list is prepared for projects for which localities plan to receive Federal assistance during the 5 year period starting at the beginning of the next fiscal year.

Following placement of a project on a state's priority list, the state delineates a preliminary planning and service area boundary for the preparation of a facility plan. The facility planning areas and the state priority list are then submitted to the EPA administrator for approval. Thereafter, the state may submit project-specific applications, consistent with the approved state priority list for financial assistance. Financial assistance follows a three-step sequence.

a. Step 1--Facility Planning Grant

Step 1 grants are awarded to localities to produce facility plans and studies that include:

- o a description of the waste treatment works for which plans and specifications will be prepared;
- o a cost-effectiveness analysis of alternatives for the treatment works;
- o an identification and examination of alternative waste treatment facilities;
- o an assessment of expected environmental impacts and alternatives; and
- o documentation of potential opportunities for recreation access and open space.

The local agency is required to prepare an environmental information document (EID) as part of the facility plan. Following certification by the state for conformance with the requirements of the Clean Water Act and any applicable water quality plans, the facility plan must be submitted for approval to the EPA regional office, which may require modification or issue conditions on subsequent grants. At this point the regional office prepares an environmental assessment based upon the EID and makes a determination if the project requires preparation of an environmental impact statement. EPA's regulations provide that an EIS must be prepared when the proposed project may directly or through induced development have a significant adverse effect upon surface or groundwater quality or quantity, on fish, wildlife and their natural habitats.

Approval of the facilities plan is also subject to the Floodplains and Wetlands Executive Orders. EPA's implementing regulations require avoidance of actions that adversely affect wetlands or floodplains or, if no practicable alternatives are found, adoption of measures to mitigate the adverse effects. In addition, if EPA determines that a proposed project will significantly affect the coastal zone of a state with a federally approved Coastal Zone Management Program (CZMP), that action will be made consistent, to the maximum extent possible, with the approved program. The primary environmental review is conducted during the step 1 facilities plan approval. After approval further environmental review is conducted only if the project is substantially modified.

c. Step 2 -- Engineering Design Grant

The step 2 grant award provides for the preparation of detailed engineering plans, specifications, and cost estimates suitable for bidding

and construction purposes. Final step 2 plans are reviewed by the state and the EPA regional office before a step 3 construction grant is awarded.

d. Step 3 -- Construction Grant

Step 3 grant awards are made to fund actual construction of wastewater treatment projects pursuant to designs and plans developed during steps 1 and 2. EPA conducts an on-site inspection during construction to ensure that grant conditions are being met. After completion of the treatment facility, a financial audit is conducted which may take up to one year to complete.

EPA has implemented the Floodplains and Wetlands Executive Orders through adoption of an agency statement of procedures (40 CFR Part 6 Appendix A, Section 3), which states EPA's policy to "avoid wherever possible the long- and short-term impacts associated with the destruction of wetlands and the occupancy and modification of floodplains and wetlands and avoid direct and indirect support of floodplain and wetlands development wherever there is a practicable alternative", and to mitigate adverse impacts. EPA has applied this general policy to its construction grants program by recognizing that interceptors will influence growth and prohibiting the extension of interceptors into environmentally sensitive areas unless necessary to correct an existing water quality problem and by encouraging grant conditions to protect such areas from new development (40 CFR Part 35, Appendix A, Section 8(f)).

2. Conclusions and Recommendations

a. Federal coastal protection policies should be fully incorporated in the state planning process.

As noted above, priorities for use of Federal funds under Section 201 of the Clean Water Act are established by the states pursuant to state priority systems approved by EPA. These systems are designed to produce lists of the relatively most important projects based on the severity of pollution, existing population affected, and the need for preservation of high quality waters. Applications are then submitted for projects on the list and must demonstrate the cost effectiveness of the project, assess the environmental impact of alternative sites, and show consistency with applicable water quality management plans approved under Sections 208 and 303 of the Clean Water Act.

EPA must review and approve both the state priority system and the state priority list. Federal environmental review, however, does not begin until specific project applications are submitted to EPA -- approval of the state priority list is subject neither to NEPA nor to the Floodplains and Wetlands Executive Orders. In addition, the list is not subjected to review by the pertinent state coastal management agency for consistency with its approved state coastal zone management program, whether or not

projects on the list will require a later consistency determination. As a consequence, hard decisions may be deferred until a stage in the process when substantial political or special interest pressure for approval can develop. At that point, the bias in the system is toward mitigation rather than avoidance of environmental damage. That bias is exacerbated by the fact that EPA prepares environmental impact statements for very few wastewater treatment facilities despite a policy to prepare such documents when the direct or indirect effects of projects have a significant adverse effect on fish and wildlife habitat. In fiscal year 1979, for example, EPA prepared EIS's for only 2 percent of its projects.

To assure the maximum protection of significant coastal resources, explicit coastal protection requirements should be built into the decision process at as early a stage as possible -- when the greatest leeway for responding to environmental protection concerns exists -- so that resource protection goals are reflected in the list of projects sent forward for Federal approval.

Recommendations:

(i) EPA should amend its regulations to provide that projects on the priority list indicate the relationship of the proposed service area to significant coastal resources and the possible impacts on these resources by development in the service area.

(ii) EPA should amend its regulations to provide that approval of the state priority list is subject to the Floodplain and Wetlands Executive Orders and to ensure that states apply the policies embodied in those orders in their priority processes.

(iii) EPA should amend its regulations or issue interpretive guidelines indicating that state priority list decisions are subject to the Federal consistency provisions of the Coastal Zone Management Act.

b. The EPA should strengthen its policies for minimizing adverse impacts on significant coastal resources of wastewater treatment facilities.

EPA's construction grants program presents something of an anomaly in that its primary purpose is to remedy existing or anticipated water quality problems, yet, in doing so, it may harm coastal resources through construction losses, soil runoff, and fill activities, for example, the South Monmouth County, New Jersey, Regional Sewage Treatment Facility, completed in 1979, was located on filled land within the wetlands and floodplains of Polypod Brook. Similarly, the original proposal for the North Central Ocean Basin Regional wastewater treatment facility in West Ocean City, Maryland, called for construction of a secondary treatment sewage facility with an ocean outfall crossing Assateague Island, a

sensitive barrier island. Recently EPA Region III has indicated that it will not fund a sewer outfall across Assateague Island.

As noted above, EPA's regulations and internal guidance regarding impacts on significant coastal resources indicate that growth is to be directed away from such areas. For example, EPA Program Requirement Memorandum 75-26 (June 6, 1975) requires that environmental assessments and impact statements analyze secondary as well as primary environmental effects. 40 CFR 35.925-13, in turn, provides that no new sewer system award may be made unless "the system would not afford capacity to new habitations or other establishments to be located in environmentally sensitive lands." Similarly, Section 8(f)(1) of Appendix A to 40 CFR Part 35 prohibits funding for interceptors in environmentally sensitive areas unless they are necessary to eliminate existing point source discharges and accommodate flows from existing habitations. Both regulations indicate that grant restrictions (e.g., restricting sewer hookups) should be used to protect environmentally sensitive areas from new development. Finally, EPA's regulations implementing the Floodplains and Wetlands Executive Orders require that where "there is no practicable alternative to locating in or affecting the floodplain or wetlands the agency shall act to minimize potential harm to the floodplain or wetlands."

Nevertheless, our review indicates that the reality may be less than the ideal. A case in point is the proposed upgrading of a sewage treatment facility on Dauphin Island -- a developed barrier island off the coast of Alabama. In addition to solving an existing and serious water quality problem, the proposed project (planning for which began over 15 years ago) would provide service to 2000 subdivided but as yet undeveloped lots. In 1978 a step 3 construction grant of $2.6 million was awarded to construct the facility. This construction grant was awarded before promulgation of the 1978 Construction Grants Regulations that require impact assessments. This step 3 award included no conditions on hookups nor on the placement of interceptors. Before the start of construction, Hurricane Frederic devastated the island, washing away or damaging nearly the entire existing sewage treatment system. Dauphin Island subsequently requested that the funding for the new system be delayed pending reconstruction of the causeway connecting the island to the mainland. The Alabama Water Improvement Commission has stated that once the bridge is rebuilt, the Dauphin Island sewage treatment proposal will receive top priority because of high pollution levels due to overflowing septic systems. Therefore, although this project may solve a serious water pollution problem, it will accommodate at least 2000 additional dwellings in a hazardous and overstressed environment increasing the likelihood for further pollution and Federal expenditures.

Several factors may contribute to this less than ideal state. First, EPA's regulations require that step 1 facilities plans accommodate growth anticipated in the service area over a 20-year period. The growth projections which accompany such plans, however, are seldom sufficiently detailed

to indicate where growth is expected to occur and, thus, whether significant coastal resources are likely to be affected. In addition, capacity design studies and cost-effectiveness analysis during the step 1 facility planning phase may overshadow environmental factors because non-monetary factors such as social and environmental impacts need only be presented descriptively in order to determine their significance. More broadly, EPA has not developed specific criteria for evaluating growth projections. Evaluations of growth projections are handled by the regional office on a case-by-case basis with little national guidance.

Second, facility plans are not ordinarily accompanied by detailed plat maps of the service and adjacent areas which indicate the location of environmentally sensitive coastal areas and distinguish developed from undeveloped areas. Absent such information, precise decisions about appropriate mitigating measures (e.g., sewer hookup restrictions, infill limitations) cannot be made.

Recent wastewater treatment grant decisions, however, indicate that EPA is moving toward a national policy of maximizing the protection afforded significant coastal resources. One example is EPA's handling of a proposed treatment facility in Cape May, New Jersey. In June 1978 the Cape May County Municipal Utility Authority (CMCMUA) completed the step 1 facility planning process for the design and construction of a 3.2 million gallon per day wastewater treatment facility. After review by the regional EPA office, a finding of no significant impact (FONSI) was released on the proposed facility in January 1979. The FONSI reduced the size of the facility from 3.2 mgd to 3.0 mgd but failed to examine the environmental impacts on significant coastal resources and the associated secondary growth impacts of the proposed project. Environmental organizations opposed the original plan because they felt that the treatment facility would allow development in critical wildlife habitats, floodplains, and sensitive coastal coastal areas, which they claimed had not been adequately analyzed during the step 1 facility planning process. They were also concerned that the growth projections used to justify the plant's capacity were not accurate and provided excess capacity that could stimulate development in sensitive coastal areas. After extensive review and discussion with environmental organizations and state agencies, EPA Region II, in June 1979, directed the CMCMUA to amend its step 1 facility plan to include a thorough analysis of environmentally sensitive areas which will and will not be served by the treatment facility. EPA is currently establishing a series of grant conditions which will prohibit sewer hookups for 50 years in identified sensitive areas. The Cape May county case should set the precedent for future analysis of sensitive coastal areas. Another example involves EPA's decision to prepare a generic EIS for the outer banks of the Carolinas to collect information on the effects of growth and sewering for the entire coastal area. This areawide EIS and public involvement will enable EPA to better focus on issues of concern to each community on the coast and incorporate these issues in site specific proposals.

Recommendations:

(i) EPA should amend its regulations and program guidance to require all step 1 facility plans to identify by detailed maps or otherwise all significant coastal resources and the projected population growth within the proposed service area.

(ii) EPA should amend its regulations and program guidance to require that step 2 and 3 grants be conditioned to prohibit sewer hookups for new development that adversely affects significant coastal resources and establish an effective enforcement policy for projects that fail to comply with these grant conditions including funding termination, prohibiting future grants to violators, and when appropriate seeking injunctive relief to prevent new hook-ups.

(iii) EPA should provide detailed program guidance with respect to appropriate grant conditions and other measures for mitigating the adverse impacts, both direct and indirect, of projects on significant coastal resources. Guidance could take the form of model grant conditions, restrictions on municipal zoning, and/or plot restrictions.

(iv) EPA should establish policies and critiera for determining when direct losses of significant coastal resources will be considered unacceptable and a choice of the no action or other alternatives required. Such policies and critiera should be incorporated into EPA's program and environmental review regulations and communicated to regional and state decision-makers by way of detailed program guidance.

c. Postconstruction monitoring of compliance with grant conditions should be strengthened to ensure protection of significant coastal resources.

Once a wastewater treatment facility is completed, EPA does not routinely monitor the project to ensure that mitigation conditions are being met. The only postconstruction review undertaken by EPA is that performed during a financial audit within one year after completion. Although NPDES permits can be conditioned to restrict hook-ups, there is no EPA-wide requirement to do so or to use NPDES permits as a means of monitoring the effects of treatment facilities on coastal resources. In the absence of effective monitoring, there is little to prevent a community from allowing additional hookups or collectors even if the initial grant conditions prohibited such action.

Recommendation:

EPA should establish specific policies and procedures for monitoring and enforcement of compliance with grant conditions, particularly with respect to adverse impacts on significant coastal resources. Such procedures could include:

- incorporation of grant conditions into NPDES permits;

- delegation of monitoring responsibilities to states with approved NPDES programs;

- direct EPA monitoring of all facilities affecting significant coastal resources; or

- cooperative arrangements with state coastal management agencies to monitor sewer hookups and placement of interceptors.

B. The Federal-Aid Highway Program
Federal Highway Administration
Department of Transportation

1. Program Description

The Federal-Aid Highway Program provides financial assistance through grants to states, and to municipalities through the states, to assist in the construction and improvement of roads and major highway systems. Although FHWA was unable to identify the amounts that were spent on coastal projects, apportionments for the coastal states (i.e., appropriated funds set aside for use in these states) in FY 1979 exceeded $2.5 billion.

The states, acting through their respective state highway or transportation agencies, submit annually to the Secretary of Transportation (Secretary) for his approval a program of proposed projects to be funded by the state's apportionment. Projects proposed for Federal funding are developed by the state in accordance with a federally approved State Action Plan (SAP) -- a document that sets forth the process the state follows to assure that possible social, economic, and environmental effects of proposed highway projects are fully considered and that final decisions on highway projects are made in the overall public interest. A SAP must conform to Federal requirements set forth in Process Guidelines issued by FHWA and is approved by the Regional Federal Highway Administrator. FHWA gives funding preference to projects that: (1) will expedite the completion of an adequate and connected system of highways which are interstate in character; (2) are important to the national defense; and (3) incorporate improved safety standards and features with safety benefits. The states are encouraged to submit projects providing direct and convenient public access to public airports and to public ports. Other types of projects are honored by the Secretary as submitted by the states.

FHWA environmental review generally does not begin until the state has identified a site specific proposal. FHWA's primary mechanism for addressing Federal-Aid Highway project effects on coastal resources is the environmental review process mandated by NEPA. The NEPA process is used as a vehicle for complying with all other relevant Federal environmental requirements, including the Executive Orders on Floodplains Management and Wetlands Protection and the consistency requirements of the Coastal Zone Management Act. In addition, FHWA has issued procedures for implementing the Floodplains Executive Order. FHWA relies on the DOT wetlands directive to comply with the Wetlands Executive Order. Project proposals are also subject to A-95 review. The task of preparing relevant NEPA documents has been delegated to the states. FHWA, however, retains the responsibility for complying with Federal requirements.

FHWA must also comply with Section 4(f) of the Department of Transportation Act, which prohibits the use of land from a significant publicly owned park, recreation area, or wildlife refuge unless a determination is made that there is no feasible and prudent alternative to the use of the land and all harm to the area is minimized.

2. Conclusions and Recommendations

a. Federal coastal protection policies are not sufficiently incorporated into the state highway planning process to assure full protection of significant coastal resources.

The State Action Plan (SAP) "describes the organization to be utilized and the process to be followed" in the development of highway projects. As such, it serves an important screening and shaping function in which national highway policies are brought to bear. With respect to natural resource protection, however, the guidelines for developing the SAP's policy statements indicate only that "it is FHWA's policy that full consideration be given to social, economic, and environmental effects throughout the planning of highway projects." The guidelines offer no further direction with respect to this issue. Moreover, FHWA does not consider approval of the SAP to be subject to the Executive Orders on Floodplains Management and Wetlands Protection or to NEPA. As a result national coastal protection policies are not fully incorporated into the guidelines. The absence of specific coastal protection policies to guide the planning process may allow projects to be submitted for Federal approval that adversely affect coastal resources. Once projects are submitted, sufficient special interest or political pressure may have developed to make rejection or substantial modification of the proposal difficult or impossible. Early consideration of these policies is the surest way to minimize projects inconsistent with them.

Recommendations:

(i) FHWA should amend the guidelines for developing State Action Plans to require states to consider fully national coastal protection policies during highway project planning. In particular, national floodplain management and wetlands protection policies should be specifically stated in the guidelines. The concept of the "public interest" presented in the guidelines should also be expanded to indicate the public benefits derived from coastal resources such as flood control, pollution control, food and fiber protection, wildlife habitat, and recreation. Finally, the guidelines should be amended to require explicit coordination with state coastal management agencies early in the planning process.

(ii) FHWA should require states to amend their SAP's to bring them into conformance with the revised guidelines.

b. FHWA's policies and precedures for implementing the Floodplains and Wetlands Executive Orders should be strengthened to avoid development in floodplains and wetlands.

The Floodplains and Wetlands Executive Orders were promulgated on May 24, 1977. A final DOT floodplain order was published on April 26, 1979, and a DOT wetlands order was published on August 8, 1978. FHWA issued its floodplain procedures on November 15, 1979. FHWA does not have specific procedures to implement the Wetlands Executive Order; FHWA projects are subject to the DOT order.

While DOT and FHWA regulations state a policy to "encourage a broad and unified effort to prevent uneconomic, hazardous, or incompatible use and development of the Nation's floodplains," the "action" components of the regulations fall short of the promise of the Executive Order and the WRC implementing guidelines. Under DOT's regulations alternatives to a proposed action must be considered and mitigating measures must be implemented only if the proposed action is located in the floodplain and has a "notable adverse impact on natural and beneficial floodplain values and functions." No clear guidance is provided as to what is required when a proposed action is located outside the floodplain but will support development in the floodplain. Moreover, what constitutes a "notable " impact is not defined.

Similarly, FHWA's regulations provide that proposed actions located outside the floodplain that would support development in the floodplain must be evaluated in terms of the probable impacts on natural and beneficial floodplain values. However, the regulations prescribe no further requirements with respect to such actions. Only those proposed actions that are located in the floodplain and have (among other things) a significant adverse impact on floodplain values will require a finding that there are no practicable alternatives less damaging to the floodplain. Furthermore, FHWA's regulations do not require mitigating measures for actions located outside the floodplain even if there are adverse effects inside the floodplain.

The DOT wetlands order states a policy to assure the protection, preservation, and enhancement of the Nation's wetlands to the fullest extent practicable during the planning, construction, and operation of transportation facilities and projects. It is also DOT policy to provide leadership to minimize the destruction, loss or degradation of wetlands in carrying out the agency's responsibilities. New construction in wetlands is to be "avoided unless there is no practicable alternative to the construction and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such construction." When making a finding of "no practicable alternative," economic, environmental and other factors may be taken into account. The DOT order further provides that when the use of wetlands is proposed, it must be "demonstrated that there is no practicable alternative to the use of wetlands

and that all practicable measures to minimize harm to wetlands have been included." In addition for any "major action which entails new construction located in wetlands," a specific finding should be made by the affected operating administration that (1) there is no practicable alternative to construction in the wetland, and (2) that all practicable measures to minimize harm have been included.

These statements of DOT policy, however, are too general to assure that wetlands protection policies will be uniformly implemented by FHWA from region to region because they hinge on the interpretation of vaguely defined terms such as "practicable." In addition, the DOT order primarily focuses on minimizing damage from projects located in wetlands; guidance is not provided for minimizing adverse impacts on wetlands caused by projects located near wetlands or other significant coastal resources.

Recommendations:

(i) DOT and FHWA should amend their floodplain management policies and procedures to comply fully with the intent of the Executive Order, as interpreted by the WRC Guidelines.

(ii) FHWA should develop program specific procedures for implementing the Wetlands Executive Order. These procedures should be sufficiently specific to provide uniform guidance to FHWA field offices concerning wetlands protection.

c. FHWA should develop highway design and construction policies to minimize direct adverse impacts of highway construction.

Many adverse impacts of highway construction can be avoided through careful engineering design and construction techniques. For example, highways over wetlands can be constructed on pilings as opposed to filled land; runoff from road surfaces can be prevented from entering waterways; access to the right-of-way can be controlled to minimize secondary development.

FHWA does not have specific national guidelines for mitigating damage to significant coastal resources. Design standards for highway construction set forth in FHWA floodplain procedures are concerned primarily with minimizing damage to the highway and preventing the highway from impeding flood waters. For example, Section 9.a.(2) requires that "Free board shall be provided, where practicable, to protect bridge structures from debris and scour-related failure." Similarly, Section 9.a.(4) requires that: "the effect of existing flood control channels, levees and reservoirs shall be considered in estimating the peak discharge and stage for all floods considered in the design." With respect to protecting natural and beneficial floodplain values, however, the regulations indicate only that the design selected "shall be supported by analyses

of design alternatives with consideration given to ... environmental concerns." No further guidance is given on this issue.

A notable exception to the lack of mitigation policies has been established by FHWA Region 3 which independently promulgated a wetlands mitigation policy because the Region "did not expect to receive any national guidance in the near future." According to this policy, Region 3 will approve broad mitigation measures. For example, when wetlands are impacted by highways, Region 3 will approve acquiring privately owned wetlands, not contiguous to the highway right-of-way, for the purpose of placing them in public ownership and assuring their conservation. Such measures are particularly encouraged when existing wetlands are threatened by private drainage or development pressures. Noncontiguous wetland acquisition is important because highway construction may vastly inflate the development potential of coastal wetlands making preservation of these areas difficult. In addition, Region 3 is preparing a manual ("Highways and Wetlands") to be used as a design guide for implementing authorized mitigating measures.

Recommendations:

(i) DOT should promulgate standards and criteria with respect to highway design and construction techniques, control of surface runoff, control of access to rights-of-way and other appropriate mitigation measures in sensitive coastal areas. These standards and criteria should be mandatory and part of the eligible project costs.

(ii) FHWA should adopt a uniform policy of encouraging the purchase of noncontiguous wetlands as an eligible project cost. Identification, mapping, and evaluation of noncontiguous wetlands for possible acquisition should be a specific NEPA requirement for coastal highways.

d. FHWA should strengthen its polices for minimizing the adverse growth impacts of highways on significant coastal resources.

That highway projects are stimulators of secondary development cannot be disputed. Commerce, industry and residential development tends to locate along transportation routes. That such induced development often results in greater environmental damage than the direct impacts of highway construction is also clear. However, neither DOT nor FHWA have developed specific policies with respect to minimizing secondary growth that may adversely affect significant coastal resources.

For example, proposed FHWA NEPA procedures provide no guidance concerning the importance of considering secondary impacts of highway projects. DOT's NEPA directive (Order 5610.1C) states only that the EIS should contain "the effect of the proposed project on land use, development patterns, and urban growth." As noted above, FHWA and DOT procedures for implementing the floodplains and wetlands Executive Orders

require neither the consideration of alternatives nor imposition of mitigating measures to minimize adverse effects of induced growth on significant coastal resources.

Recommendations:

(i) FHWA should adopt a policy to minimize growth that adversely affects significant coastal resources. This policy should include denial of projects in or providing access to coastal areas such as barrier islands unless the project is clearly in the national interest, no alternatives exist, and appropriate mitigating measures, such as access restrictions, have been imposed.

(ii) FHWA should adopt a policy of giving secondary and cumulative impacts equal consideration with direct impacts in determining the significance of a proposed project -- i.e. secondary or cumulative impacts should not be given less weight only because they are not immediately and dramatically apparent.

C. Economic Development Assistance Programs
Economic Development Administration
U.S. Department of Commerce

1. Program Description

The Economic Development Administration (EDA) of the U.S. Department of Commerce provides financial and technical assistance to states, cities, counties, multi-county areas, the private sector, and Indian tribes to restore the economic health of areas burdened with high unemployment and low family income. Under the Public Works and Economic Development Act of 1965, as amended, EDA administers programs of grants and loans for public works and development facilities, business development assistance, special economic development and adjustment assistance, and planning grants to develop a capability for economic development planning. In 1976 and 1977, it administered a two round local public works program to provide immediate stimulus to the economy and increase job opportunities.

Areas submitting project proposals under EDA programs must qualify and be designated as distressed areas on the basis of high unemployment, low median income, or other measures of economic distress. Two types of areas are designated--Redevelopment Areas and Economic Development Districts (EDDs). Redevelopment Areas are counties, labor areas, or cities where employment or income figures reveal conditions of economic distress. EDDs are multi-county areas containing at least one Redevelopment Area, which must be of sufficient size and economic interdependence to plan and undertake overall economic development programs that are beyond the capacity of individual Redevelopment Areas. Redevelopment Areas and EDDs must also prepare and submit an Overall Economic Development Plan (OEDP) for approval by EDA in order to be eligible to submit project applications. Projects must be consistent with the OEDP and respond to the Area's or EDD's economic and employment needs.

EDA programs encompass a wide range of investments intended to stimulate economic growth and employment. EDA projects can be small or large (several thousand to several million dollars) and range from investments with little or no environmental impact (e.g., working capital loans to existing businesses) to investments with substantial potential impacts (e.g., roads, water and sewer systems, industrial parks, port facilities, convention centers, and industrial facilities). When located in coastal areas, these projects can have impacts due to their size, design and siting, and their capacity to stimulate growth in sensitive areas. From October 1, 1976 through March 31, 1980, EDA spent $3.286 billion in coastal counties, of which $2.688 billion came from the local public works program and $598 million from EDA's continuing economic development programs.

EDA programs most likely to affect coastal areas include:

a. Public Works and Development Finance Program

EDA's public works program provides grants and loans to acquire and develop land and to acquire, construct, rehabilitate, alter, expand, or improve facilities including related machinery and equipment needed to attract new industry and encourage business expansion. Eligible projects in designated areas may receive grants of up to 50% of total eligible project costs for such public facilities as water and sewer systems; industrial parks, including related utilities, streets and access roads; port facilities; regional airports; public tourism facilities; skill centers; flood control projects; and other facilities to stimulate economic development. Eligible projects in severely depressed areas may received additional assistance in the form of supplementary grants to augment basic grants from EDA or from other Federal agencies when applicants are unable to supply the required local share. The combined Federal grant may not exceed the maximum grant rate that EDA has established for the area in which the project is located.

b. Business Development Assistance Program

This program provides loans, loan guarantees and interest subsidies to encourage business expansion and thereby increase employment, increase incomes, and diversify local economies. Assistance may be used to enable applicants to purchase, develop or lease commercial or industrial land and facilities, and to provide working capital.

c. Special Economic Development and Adjustment Assistance Program (Title IX).

Title IX, a 1974 amendment to the Public Works and Economic Development Act, created a special program to assist areas experiencing Sudden and Severe Economic Dislocation (SSED) or Long-Term Economic Deterioration (LTED). The SSED program is designed to assist areas that have experienced, or are about to experience, a special economic development need. This need may arise from actual or threatened severe unemployment caused by economic dislocation, including unemployment caused by actions of the Federal government or by compliance with Federal regulations, or from economic adjustment problems resulting from severe changes in economic conditions, such as the closing of a major source of work. The LTED program is designed to assist areas that have demonstrated long-term economic deterioration in their local economic base which contributes to the out-mitigation of economic activity and results in a decrease in employment opportunities.

To qualify for assistance under these programs eligible recipients must prepare an economic adjustment plan, either on their own or with a planning grant from EDA. When the adjustment plan has been approved, EDA may make an adjustment grant to implement the plan. The grant may be used for "public facilities, business development, planning, research, technical assistance, public services, rent supplements, mortgage payment assistance, relocation of business or individuals, training or other assistance which demonstrably furthers the economic adjustment objectives of this part."

d. Planning Programs

EDA's planning programs are designed to develop state and local capability for economic development planning. There are two basic programs. The State and Urban Planning Program provides grants to strengthen the economic development planning capacity of states, cities, and other eligible substate entities. The Economic Development District (EDD)/ Redevelopment Area Planning Program funds preparation and revision of Overall Economic Development Plans (OEDPS), which are required as a condition of designation and eligibility for EDA public and private sector investment funding.

Professional Services and Incentives grants supplement EDD planning programs. Professional Services grants provide funds to allow EDDs to provide assistance to their their local governments in such areas as export development, city management, basic engineering, and energy conservation. Incentive grants provide funds to allow EDDs to address special planning needs, such as developing economic diversification and industrial development strategies.

EDA is sponsoring a demonstration effort to develop Comprehensive Economic Development Strategies (CEDS). A CEDS is based on the OEDP, but provides greater detail and specificity. It is intended to describe an area's multiyear economic investment strategy. The purpose of CEDS is to provide a better link between an area's Overall Economic Development Plan and specific project investments. In addition, and partly based on the CEDS experience, EDA is revising the entire OEDP documentation system to make the OEDP more useful in investment decisionmaking.

In addition to its ongoing programs, in 1976 and 1977 EDA administered a two-round Local Public Works program directed at providing an immediate stimulus to the economy, increased job opportunities, and needed public facilities. The program originated in July, 1976, with the enactment of legislation authorizing a $2 billion countercyclical public works program. The Local Public Works Capital Development and Investment Act of 1976, which provided 100 percent Federal grants for state and local public

works projects, was implemented by EDA during the first two quarters of FY 1977.

In accordance with its countercyclical objective, the legislation authorizing the program required a decision on each project application within 60 days of its submission and further mandated that projects were to be under construction within 90 days of their approval.

In early May 1977 Congress passed and the President signed the Public Works Employment Act of 1977 which authorized a $4 billion second phase LPW program (LPW II), and the Economic Stimulus Appropriations Act, which appropriated $4 billion to carry out the program. Eligible projects included the construction of public facilities, including water and sewer lines, streets and roads, recreational facilities, convention centers, civic centers, and other public facilities, and the transportation and provision of water to drought-stricken areas. By September 30, 1977, EDA had approved 8,555 LPW II projects,3/ of which 3,718 projects, totalling $2.688 billion, were in coastal counties.

A third round LPW program was proposed in the House version of EDA's new legislation, the National Public Works and Economic Development Act of 1979, which was referred back to committee after a House/Senate conference committee could not reach agreement. In its place, the House and Senate passed a bill in late November extending EDA's existing legislation through FY 1982. This bill was signed into law by the President. Possible future action on the National Public Works and Economic Development Act, and the proposed third round LPW program, is unknown at this time.

EDA administers its programs through six regional offices and an Economic Development Representative (EDR) in each state. The EDR works with community representatives to develop an OEDP. Once an area is designated as a Redevelopment Area or Economic Development District, the EDR works with the area on a continuing basis to develop programs and projects consistent with the goals and objectives of the OEDP. Project proposals are processed in the Regional Offices. Funding decisions are made by the Regional Director on the basis of recommendations by the EDR and the Regional Office Project Review Committee.

EDA's environmental policies and procedures are contained in its new NEPA directive, issued September 24, 1980 in the Federal Register, and an August 2, 1979 directive implementing the Floodplains and Wetlands Executive Orders. The policy contained in the NEPA directive is procedural and general, stating that "it is the policy of EDA to assure, through the procedures set forth in this directive, that proper environmental review of program activities takes place, that there is a proper balance between the goals of economic development and environmental enhancement and that adverse environmental impacts are mitigated or avoided to the extent possible." In contrast, EDA's directive implementing the Executive Orders states that it is EDA's policy to:

3/ Local Public Works Program Status Report, U.S. Department of Commerce, Economic Development Administration, January 1978, page 30.

"avoid, to the extent practicable, the long and short term impacts associated with the modification and occupancy of floodplains and wetlands; avoid, to the extent practicable, direct and indirect impacts on floodplain and wetland values and functions; promote the use of nonstructural flood protection methods to reduce the risk of flood loss; minimize the impact of floods on human health, safety and welfare; restore and preserve the natural and beneficial values and functions of floodplains and wetlands; and incorporate the Unified National Program for Floodplain Management into its decisionmaking process."

In carrying out these policies, the directive states that EDA "shall not participate, either partially or wholly, in any action that would impact a floodplain or wetland unless the Agency determines that no practicable alternative exists to the action." The directive also states that EDA "... shall give primary emphasis to locating actions outside the floodplain or wetland, ... shall explicitly consider the no action alternative, ... shall insure that the proposed action is the practicable alternative which minimizes impacts on the natural values and functions of floodplains and wetlands and that all practicable mitigation measures are incorporated into the action, and,... shall continuously monitor the action to ensure that the action and its mitigation measures are carried out in accordance with the Agency's findings and recommendations."

Environmental assessments of projects are made by the Regional Environmental Officer. All projects are reviewed in accordance with the procedures in EDA's NEPA directive. The floodplains/wetlands directive applies to projects in or affecting floodplains or wetlands, except "when the Regional Environmental Officer determines that the locational impact is minor to the extent that floodplain values and functions ... are not affected." Based on the environmental assessment, the Regional Environmental Officer makes a recommendation to the Regional Director as to whether the project has potential for significantly affecting the quality of the human environment and, hence, requires an environmental impact statement. The Regional Director makes the environmental impact determination.

2. Conclusions and Recommendations

Opportunities to integrate the President's national coastal protection policies must be assessed within the context of EDA's overall environmental program, which has changed substantially in the past one and one-half years. For example, EDA has increased its environmental staff in the Regions from six to eleven. An excellent set of procedures were developed to implement the Executive Orders on floodplain management and wetlands protection. Recently, EDA issued final procedures implementing NEPA and CEQ's regulations. However, there are several remaining concerns that affect EDA's ability to achieve the President's coastal protection goals in all of its program areas.

a. Although EDA's environmental staff has increased from 6 to 11 in the regions, minimal environmental staffing and resources are still the most basic impediments to achieving the President's coastal protection goals.

The present environmental staff consists of a Special Assistant for the Environment, with a staff of three professional positions (one of which is vacant), and eleven regional environmental staff members. The eleven regional staff members are divided among six regions -- two in Seattle, two in Atlanta, one in Denver, one in Chicago, three in Austin and two in Philadelphia. For example, the environmental staff of the Philadelphia Regional Office, which added its second staff person this Fall, is responsible for environmental reviews of all EDA projects in 13 states, Puerto Rico and the U.S. Virgin Islands. The Regional Environmental Officer estimated that his workload included 47 public works projects in 1979, totalling $53 million, and $56 million in public works projects in the first two quarters of this year. He estimated that the number of business development assistance, Title IX and planning and technical assistance grants reviewed is three to four times the number of public works projects. The Special Assistant's staff is similarly limited. While it has commendable plans for instituting a program of monitoring and audit of the the environmental review process, these measures cannot be implemented without additional staff.

Funds for travel and preparation of environmental impact statements (EISs) are also greatly restricted. Site visits are seldom approved unless a controversy already exists. Very limited funding is available for EISs. As a result, of the more than 12,000 non-LPW projects funded since 1965, EDA has prepared only 42 EISs.4/

Thus, even though EDA now has strong policies and procedures for evaluating projects located in or affecting floodplains or wetlands, it does not have the resources to assure their implementation. Although some of the regional environmental staffs appear to be quite effective in relation to their small size and available resources, overall regional environmental staffing and resources are inadequate to carry out an effective environmental review of EDA's programs.

Recommendations:

(i) The Assistant Secretary for Economic Development should be directed to evaluate EDA's environmental staffing pattern in the headquarters and regional offices and report promptly to the Secretary of Commerce on the minimum numbers and types of additional environmental personnel needed to

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4/ EDA is currently participating in the preparation of 14 additional EISs as lead or cooperating agency.

carry out adequately the environmental functions of existing programs. The Assistant Secretary's report should describe as well how EDA proposes to implement its recommendations.

(ii) EDA should be directed to budget for funds adequate to support its environmental program, including regional travel budgets for visits to project sites, and funds for preparation of EISs.

b. EDA's NEPA procedures should be strengthened to fully reflect the President's coastal protection goals.

EDA recently published its revised NEPA procedures, as required by CEQ's July 30, 1979 regulations. However, the statement of policy contained in the directive is virtually unchanged from that contained in EDA's earlier NEPA directive, and includes no expression of substantive agency policy to guide review and decisionmaking on environmental issues in general or protection of significant coastal resources in particular. In the absence of substantive policies, there have been mixed results concerning funding of projects with significant adverse environmental impacts. For example, in early 1980, EDA decided not to allow construction of a convention center on Bogue Banks, a North Carolina barrier island, because of the proposed project's direct environmental impacts and its capacity to stimulate growth in this sensitive and hazardous area. However, in late 1978, EDA funded a $4.5 million project to construct a 237-berth marina on Woodley Island in Humboldt Bay, California. This decision followed a supplemental EIS which examined the project's environmental impacts, including the destruction of wetlands, and concluded that "the Humboldt Bay Harbor, Recreation and Conservation District's proposed Woodley Island marina would convert approximately 25 percent of Woodley Island from open space/wildlife habitat to a public marina in support of the region's commercial fishing industry. The proposed change in land use requires the immediate destruction of several environmentally sensitive habitats in support of a facility whose merits have been questioned by several parties on both ecological and economic grounds. HBHRCD and the San Francisco District (of the Corps of Engineers) rejected several alternative sites which appear to provide similar or greater economic benefit without the adverse ecological impacts associated with the Woodley Island marina." Thus, while EDA's Bogue Banks decision indicates sensitivity to environmental concerns, as well as the economically sound judgement to avoid stimulating further development in a high hazard area, its NEPA policy is not sufficiently precise to assure consistent results.

The statement of policy also requires EDA "to assure ... that adverse environmental impacts are mitigated or avoided to the extent possible." However, insufficient criteria are established to guide the environmental assessment of practicable mitigation measures and to make the determination of when mitigation will be required. EDA staff report that more specific guidance on this and other matters will be contained in its pending environmental review handbook. However, the handbook was not developed sufficiently for evaluation during this review.

Recommendations:

(i) EDA should amend its NEPA procedures to:

(a) provide substantive policies for protecting coastal resources,

(b) establish criteria for determining when mitigation of unavoidable adverse impacts will be required.

(ii) EDA should accelerate the development of an environmental review handbook containing detailed guidance on the natural resource values to be addressed in the impact identification process, the assessment of secondary and cumulative impacts, the identification and evaluation of alternatives, and the measures that may be used to mitigate unavoidable adverse impacts. The handbook should also identify sources and processes for obtaining data necessary to perform the impact assessment.

c. EDA's postconstruction monitoring should be strengthened to assure compliance with required mitigation measures.

As noted, EDA's directive implementing the Floodplains and Wetlands Executive Orders requires continuous monitoring of projects that impact floodplains and wetlands values and functions to ensure that mitigation measures are carried out effectively. However, no guidance has been provided on how this should be done. If the mitigation measures can be implemented prior to the final disbursement of grant funds, they can be monitored by EDA's construction management staff. However, if implementation is of longer duration or involves a continuing commitment (such as restricting hookups to water and sewer systems from floodplains or wetlands), EDA has no mechanism for assuring that the mitigation is achieved.

An illustration of this problem is the Tampa Port Authority Shrimp Fleet Relocation Project. This $3 million project involved relocating shrimp fleet suppliers and processors to a site separated only by a causeway from an undeveloped bay with good quality wetlands. EDA has attempted to prevent the Port Authority from encroaching on this area by conditioning its approval of the grant on passage of a resolution by the Authority indicating its intent to preserve the area in an undeveloped state. Such a resolution was passed; however, EDA has no procedures or mechanism for monitoring compliance with its terms or taking action if the terms are violated.

Recommendation:

EDA should be directed to establish a specific procedure for monitoring and enforcement of compliance with grant conditions designed to protect significant coastal resources. This procedure could involve a cooperative arrangement with state coastal zone management agencies for monitoring long-term or continuing mitigation measures.

d. Coastal resource protection policies should be incorporated in EDA's planning guidance.

As noted above, EDA's planning programs are designed to be the key to individual project selection. EDA's regulations governing these programs, however, provide no guidance on how to incorporate consideration of natural resource impacts into local plans.

The regulations for the State and Urban Planning Program require that state planning shall "support sound land use" and "enhance and protect the environment." However, these requirements have not been carried over into agency guidelines and review criteria, and urban planning is not required to consider these factors. Similarly, EDA's guidelines for the preparation of Redevelopment Area and EDD Overall Economic Development Plans (OEDPs) contain one paragraph on environmental considerations which states only that" ... environmental considerations will be incorporated into the grantee work programs consistent with the provisions of the National Environmental Policy Act of 1969." Although the EDD OEDP Guide suggests consultation between EDDs in the coastal zone and the state coastal zone management program, no procedure is specified as to how the Coastal Zone Management Act's consistency requirement is to be incorporated into planning and project development.

EDA's floodplains and wetlands directive encourages "each grantee receiving assistance under these programs to initiate a process to identify floodplains and wetlands within its planning jurisdiction or study area," and states that "the program office shall condition (planning) grants to require all grantees to identify the location and extent of floodplains and wetlands within the planning area based on published data in order to initiate a data base and to consider the impacts of the plan on floodplain and wetland values and functions." However, these requirements have not been incorporated into the planning guidelines, and apparently the condition has not yet been applied to new planning grants.

Review and approval of State/Urban Annual Reports, OEDPs, and revised OEDPs are functions of the regional offices. Regional office reviews are conducted in accordance with extremely general guidance. Specific review criteria, including criteria for evaluating the consideration of coastal resource impacts, are absent. Actions to approve economic development plans are not considered subject to NEPA, and actions to approve planning grants are categorically excluded under EDA's new NEPA regulations.

Economic development plans are critical determinants of subsequent investment decisions. Good environmental guidance and review at the plan approval stage would result in early identification and resolution of problems by the planning agency, would reduce the potential for project-specific problems and conflicts, and would maximize achievement of Federal coastal protection goals. EDA's revision of its OEDP documentation system provides a timely opportunity to integrate the goal of protecting coastal resources into both the guidance and review criteria.

Recommendation:

EDA should integrate the goal of protecting coastal resources into its OEDP and state/urban planning documentation systems by:

(a) preparing substantive standards and guidance on the decision-making process through which protection of coastal resources can be achieved, including substantive policies regarding new development in sensitive coastal areas, and guidance on impact identification, consideration of alternatives, consideration of secondary and cumulative impacts, mitigation measures, and public involvement;

(b) developing EDA review criteria that incorporate the above factors, including a review and projection by the Regional Environmental Officer of the overall environmental impacts of the plans;

(c) requiring that plans in coastal areas be coordinated with the state coastal zone management programs; and

(d) informing applicants that Professional Services and Incentives Grants may be used to assist them in obtaining the expertise to inventory coastal resources and evaluate the impacts of their plans on sensitive coastal areas.

e. As currently conceived, enactment of a third round local public works program would carry the potential for significant harm to coastal resources.

The third round LPW program proposed in the House version of the National Public Works and Economic Development Act (which, as stated earlier, has been referred back to Committee), contained the same 60-day processing time limits as LPW I and LPW II. Many LPW I and II projects could not be reviewed adequately within 60 days because of the large number of applications and the substantial environmental consequences of some of the projects. For example, one project approved during LPW II was a $1.25 million grant to the Port of Camas-Washougal, Washington, for expansion of its industrial park. The proposed site consisted of 140 acres next to the existing industrial park and bounded by lowlands and wetlands associated with Gribbons Creek and the former Steigerwald Lake. Port Authority plans indicated that the project was a first step in the overall development of the area, all of which, including the floodplain and wetlands, was zoned industrial. Because of local controversy that arose after the grant was approved, the project was halted while EDA prepared an EIS. The final EIS, issued March 11, 1980, concluded that "full development of the project area would seriously compromise its ecological integrity." Because EDA was unable to assure that the proposed project would not lead to

unnecessary development within the adjacent floodplain and wetlands, it funded an alternative project.

Although EDA deserves commendation for its ultimate handling of the Camus-Washougal project, only the alert action of local citizens caused this project to receive a full environmental evaluation. Most LPW projects did not receive such review. For example, EDA approved a project for a $3 million municipal marina on Biscayne Bay near Miami Beach, occupying 1.6 million square feet of shoreline and creating 432 boat slips. In Titusville, Florida, EDA approved a $1.7 million project for public improvements involving construction of water and sewer facilities, storm drainage facilities, and sidewalks in a neighborhood along Indian River on the Florida east coast.

In both cases, the environmental review consisted of a short applicant's assessment and a one page checklist on which the EDA reviewer checked off the project's compliance with NEPA, the Clean Air and Water Acts, the National Historic Preservation Act, the Historic and Archaeological Data Preservation Act, the Wild and Scenic Rivers Act, Endangered Species Act, and Section 106(a) of the Local Public Works Capital Development and Investment Act, which prohibited projects whose principal purpose was the channelization, damming, diversion or dredging of natural waterways.

Because of the 60 day processing time constraint and the number of applications, this type of environmental assessment was the standard practice. Except in unusual circumstances, if a project appeared to have the potential for significantly affecting the quality of the environment, the only recourse was to deny it. Experience with LPW I and LPW II indicates that officials were reluctant to take this severe action. (While 10,616 projects were approved during LPW I and II, only a handful were denied for environmental reasons.) Thus, clear policies that identify in advance the kinds of projects that can be considered -- or more importantly those that cannot -- are essential environmental protection tools for this type of program.

Recommendation:

(i) If another LPW or similar program is enacted, EDA's implementation plans should include developing internal policies to encourage environmentally sound proposals. These could include:

- encouraging smaller scale systems and facilities to accommodate existing residents;

- encouraging projects that rehabilitate, renovate, and adaptively reuse existing structures and systems;

- encouraging the siting of proposed facilities so that they can be served by existing infrastructure;

- discouraging projects which involve environmentally destructive activities such as stream channelization and dredging;

- discouraging projects which affect critical habitat for endangered or threatened species, designated historic and cultural sites, and land and water resources designated as important by state and local agencies, including the state coastal zone management program, and

- not funding growth-inducing infrastructure in sensitive coastal areas.

(ii) In addition, a procedure should be developed for complying with Section 307 of the Coastal Zone Management Act in the processing of LPW type proposals. The procedure should require clearance from the appropriate state agency administering an approved state coastal zone management program of all proposals for projects to be located in the state's coastal zone. This clearance should be a prerequisite for filing an application.

D. Coastal Energy Impact Program
National Oceanic and Atmospheric Administration
Department of Commerce

1. Program Description

The Coastal Energy Impact Program (CEIP) was established in 1976 under Section 308 of the Coastal Zone Management Act (CZMA) to mitigate or prevent adverse environmental, social, and economic impacts in the coastal zone caused by coastal and offshore energy development. To accomplish this purpose the CEIP provides financial assistance in the form of grants and loans to states and local governments for planning, public facility construction, and environmental protection projects.

Funds appropriated to the CEIP are allotted to eligible coastal states in accordance with formulas specified in CEIP regulations. Only those states developing coastal management programs that are found by NOAA to be consistent with the policies of the CZMA are eligible for CEIP assistance. In the period from FY 1977 through FY 1979 NOAA obligated over $135 million for infrastructure projects in coastal areas.

CEIP funds allotted to a state must be allocated among units of local government "to the maximum extent practicable" on the basis of "need" (Section 308 (g)(2)). CEIP regulations require states to accomplish this allocation by a NOAA approved intrastate allocation process. The intrastate allocation process is also used to determine the priority of funding projects. Project specific applications are submitted to NOAA after undergoing review through state A-95 clearinghouses. No funds are awarded unless the designated state coastal management agency certifies that the project is consistent with the state's developing or approved coastal management plan. Upon receipt of the project application, NOAA reviews the proposed project for eligibility according to criteria established by Section 308 and CEIP regulations. In general, a project to construct a public facility is eligible if a causal connection can be established between the need for the proposed project and an impact generated by some form of coastal energy activity.

The award of CEIP funds is subject to NEPA, the Floodplain and Wetlands Executive Orders, and all other applicable Federal environmental requirements. NOAA Directive 02-12 implementing the Executive Orders prohibits locating a public facility in a floodplain or wetland unless there is no practicable alternative that is less damaging to the floodplain or wetland environment. The NOAA Directive also requires that all practicable mitigation measures that minimize adverse impacts to natural floodplain and wetland values and functions be incorporated into any proposed project.

Environmental assessment information for each proposed project is prepared by an applicant in accordance with CEIP Environmental Guidelines. These guidelines describe the type of information that an applicant must submit to assist NOAA in determining the environmental impacts of a proposed project. Where the proposed project involves another agency as the lead (e.g., a project which requires a COE permit), NOAA generally relies on the environmental findings prepared by the lead agency. However, NOAA reviews the lead agency's decision to determine whether it is reasonable. Environmental documents are prepared by the CEIP office and reviewed by the NOAA Office of Environment and Ecology before a final decision is made.

2. Conclusions and Recommendations

a. The consideration of national coastal protection policies should be improved during the state project selection process.

As noted above, the state must distribute allotted funds among eligible applicants in accordance with its federally approved intrastate allocation process. CEIP regulations state that the objective of the intrastate allocation process is to distribute CEIP assistance "in amounts which are proportional to need and in a manner which is equitable and expeditious" (15 CFR 931.111). The form of the allocation process that a state must use depends on the amount of assistance allotted to the state. States that receive in a fiscal year an allotment of $1 million or more in grants must develop a so-called "A" process for that fiscal year's allotment (including any allotted loan funds). States that receive an allotment of less than $1 million in grants must comply with the so-called "B" process for that fiscal year's allotment. U.S. Territories are exempt from the requirement to develop an intrastate allocation process.

The "A" process requires states to evaluate and select projects based on criteria which include "protection of the environment" (15 CFR 931.112(a)(3)). CEIP regulations, however, present no further guidance with respect to the environmental protection policies that should be reflected in the intrastate allocation process. The "B" process requires states to submit along with applications for CEIP assistance a process which describes the "methods used to evaluate and select projects and to allocate financial assistance." As of June 1980, 14 states have approved "A" process, and 15 states have approved "B" processes.

The degree to which environmental concerns have been integrated into state prioritization processes has varied. For example, Louisiana, an "A" state, prioritizes public facility projects according to the following scheme: immediacy of energy related impacts (20 points); effect on

population (20 points); fiscal capacity of the locality (10 points); consistency with CZM program (10 points); consistency with regional and local plans (10 points); and environmental impacts (20 points). With respect to environmental impacts, the Louisiana process provides:

> Protection of the environment is an important consideration under CEIP. This factor is an indication of the potential impact of the public facility/ service on the community and regional environment. The highest points would be assigned for projects that have minimal effect, themselves, on the community as determined by the environmental impact assessment or that had beneficial effects on existing conditions (e.g., a sewage treatment plant that improves water quality). A major impact on the environment would receive no points and will be returned to the applicant for reconsideration of the project.

Maryland, a "B" state, prioritizes projects based on the urgency or immediacy of the need; potential severity of the economic and environmental impact; and the area of impact. With respect to environmental impacts, the Maryland process provides:

> Environmental and safety impact will be considered as severe, moderate, or low, based on existing studies of the impact of similar facilities, and available data on the site.

Although both states require that environmental factors are considered during the project prioritization process, the guidance provided is too general to assure the full protection of coastal resources.

NOAA is, however, instituting a policy of requiring state CEIP agencies to establish a close working relationship with state coastal management agencies. This will assure that in states with approved coastal management programs the full range of a state's coastal protection policies will be brought to bear early in the project selection process.

Recommmendation:

CEIP should incorporate specific policies for protecting significant coastal resources in the intrastate allocation process and loan project selection so that projects with adverse effects on significant coastal resources receive lower priority than projects with no adverse coastal effects.

b. CEIP legislation may impede achievement of national coastal protection goals.

Section 308(b)(5)(B) prohibits NOAA from disapproving "any project or program for highways and secondary roads, docks, navigation aids, fire and police protection, water supply, waste collection and treatment (including drainage), schools and education, and hospitals and health care" -- projects frequently associated with substantial secondary impacts. In addition, Section 308 (i) prohibits NOAA from interceding "in any land use or water use decision of any coastal state with respect to siting of any energy facility or public facility by making siting in a particular location a prerequisite to, or a condition of CEIP financial assistance."

The impact of these provisions on coastal resource protection is not clear. A flat prohibition against denying projects that cause unwarranted environmental damage or subject a Federal investment to unwarranted risk of flood loss would be clearly contrary to national coastal resource protection goals. However, it is unclear to what extent these provisions prevent NOAA from applying the policies of the Floodplains and Wetlands Executive Orders in particular cases. Indeed, this very ambiguity may hamper the CEIP in exercising its responsibility to protect coastal resources.

Recommendations:

The Administration should seek to amend Section 308 of the CZMA to clarify that NOAA has authority to condition financial assistance to site public facilities out of sensitive coastal areas, to modify substantially such projects when necessary, to impose appropriate mitigating measures, and to deny funding for projects that are not compatible with coastal resource protection goals.

c. CEIP policies should be strengthened for assuring full protection of coastal resources.

CEIP regulations identify the following explicit goals of the CEIP:

- to preserve and enhance the Nation's valuable coastal recreational and environmental resources; and

- to advance the National objective of obtaining a greater degree of energy self-sufficiency by encouraging the rational and timely development of domestic coastal energy resources and energy resource transportation systems. (15 CFR 931.2(a))

Conflicts between these goals, when they arise, are resolved by balancing:

> CEIP will be administered in a manner that will strike a balance between the major national goals of obtaining a greater degree of energy self-sufficiency, and protecting the coastal environment. (15 CFR 931.2(b))

However, little written policy guidance has been provided as to how the balancing will be carried out. Although a major purpose of the CEIP is to prevent or reduce environmental damage, CEIP regulations provide no criteria for deciding when an application for a project that could damage the environment while accomplishing some social or economic goal will be denied. As a result, projects may be approved that seriously degrade coastal resources in order to further some other social goal without evidence of careful balancing. For example, CEIP recently approved a $1.4 million grant to fund the transportation of dredge spoil in connection with a flood control project. The proposed project involved the dredging of a drainage ditch and the destruction of "11 acres of highly productive tidal marsh, 11 acres of shallow benthic habitat and a 1.5 acre oyster reef." According to the environmental analysis, the proposed project was approved because the no action alternative would "increase the risk of flooding upstream." The assessment, however, provides little evidence of "balancing" competing values.

Environmental review procedures embodied in CEIP regulations are very general and provide little policy guidance for either the applicant or the decisionmaker. The regulations provide that NOAA "will consider the environmental consequence of each proposed use of CEIP funds "before awarding financial assistance" but set forth no further guidance for protecting significant coastal resources. NOAA Directive 02-10 implementing the National Environmental Policy Act (NEPA) is entirely concerned with procedure -- it provides no substantive guidance for protecting coastal resources. CEIP guidelines for preparing environmental assessments contain general policies for protecting wetlands and floodplains but lack the specificity needed to assure that coastal resources will be fully protected. NOAA has issued a directive implementing the Floodplains and Wetlands Executive Orders which require NOAA to avoid floodplains and wetlands when practicable and to implement practicable measures to mitigate adverse environmental impacts. However, the NOAA directive has just recently been implemented and its impact on CEIP procedures cannot yet be fully evaluated. In addition, the NOAA procedures were criticized by the WRC as suffering from lack of specificity that characterizes other agency executive order procedures discussed in this report. For example the natural and beneficial values of floodplains and wetlands are discussed very briefly and generally.

Neither CEIP regulations nor CEIP environmental review guidelines contain any specific policies for conditioning financial assistance to mitigate adverse impacts on coastal resources. As a result, for example,

the flood control project noted above involved dredging approximately 320,000 cubic yards of clay and sand adjacent to property used by the Dow Chemical Corporation to dispose of waste materials, including chlorinated hydrocarbons, asbestos, magnesium cell sludge, plant trash, and miscellaneous barrel wastes. The environmental assessment indicated a concern over resuspending toxic wastes during the dredging and recommended awarding the grant for the project as proposed contingent on the applicant's supplying the CEIP office with a chemcial analysis of dredge spoil. It is not clear whether the recommended condition as stated could have been used to protect coastal resources if the chemical analysis revealed the presence of toxic substances. In any case, the issue is moot because the special condition was not attached to the grant award.

As a general rule NOAA has not attached grant conditions that would minimize growth that adversely affects significant coastal resources. A notable exception involved the Gulf Shores Waterline project. The award for that project was subject to conditions that would minimize growth in an environmentally fragile area that was recently devastated by Hurricane Frederic. As of this report it appears the project will be abandoned because of the unwillingness of the applicant to accept the grant conditions.

In addition, NOAA does not have specific policies or procedures for monitoring the postconstruction impacts on coastal resources of CEIP funded projects. As indicated elsewhere in this report, absent such monitoring, compliance with mitigating measures cannot be assured and the effectiveness of such measures cannot be assessed.

RECOMMENDATION:

(i) NOAA should adopt specific policies to prevent or minimize direct and indirect impacts to significant coastal resources that may result from CEIP public facility projects. Included should be policies to require conditioning of financial assistance to mitigate adverse impacts on significant coastal resources and policies against funding projects which support development that adversely affect significant coastal resources. For example, grants to construct water supply projects should be conditioned to prohibit new hook-ups in floodplains, wetlands, and other ecologically vulnerable coastal areas.

(ii) NOAA should update and reissue the CEIP Environmental Guidelines. In addition to providing guidance on the preparation of environmental assessment information, these Guidelines should present potential applicants with a clear statement of CEIP coastal protection policy.

(iii) CEIP should adopt a policy and procedures for monitoring the postconstruction effects of infrastructure projects and adherence to imposed mitigating conditions.

E. Water Resources Development
U.S. Army Corps of Engineers Civil Works Program
U.S. Water Resources Council Principles and Standards

1. Program Description

The Department of the Army and the Corps of Engineers are charged by Congress with the major Federal program of water resources development. The Corps responsibility began with an Act of Congress in 1824 for the improvement of rivers and harbors for navigation. Subsequent legislation has expanded the basis for Corps participation in water management to encompass flood control, beach erosion control, hurricane protection, stream bank erosion control, hydroelectric power, recreation, water supply and quality management, fish and wildlife conservation, wetlands conservation, and aquatic plant control.

House Public Works and Transportation Committee and Senate Environment and Public Works Committee resolutions and specific legislation provide basic authorization for feasibility studies by the Corps. Generally, water resource development projects recommended to the Congress in response to study authorizations may not be implemented without specific authorization in law. The majority of the Corps water resource projects fall into this category. In addition, Congress has delegated continuing authority to the Secretary of the Army for construction of certain small projects for navigation, flood control, beach erosion control, and stream bank protection that meet specified criteria.

The Corps data base is not organized to allow a break out of obligations by coastal county. However, it does contain data by major project type. In FY 1979, the Corps spent $1.392 billion5/ in coastal states for channel and harbor navigation, flood control, and beach erosion control projects -- the major types of Civil Works projects in coastal areas.

Decentralization through delegation of authority is a basic tenet of the Corps organization and structure. U.S. Army Engineer Districts are the principal planning and project implementation offices, with responsibility for conducting planning investigations, postauthorization studies, and engineering designs; constructing civil works facilities; and operating and maintaining projects that have been legislatively determined to be Federal responsibilities.

All Corps of Engineers pre- and postauthorization planning is carried out in accordance with the Water Resources Council's Principles and Standards for Planning Water and Related Land Resources. The Principles and Standards (P&S) are used by all water resources agencies --

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5/ Expenditure data supplied by the Corps of Engineers. Total amount includes expenditures of $37 million for general investigations, $886 million for construction, and $470 million for operations and maintenance.

including the Corps, the Department of Agriculture's Soil Conservation Service, and the Department of Interior's Water and Power Resources Service -- to plan water resource projects. This process involves identification of objectives, determination of technical feasibility, identification of alternative plans (including one which maximizes national econom ic development (NED) objectives and one which maximizes environmental quality (EQ) objectives), analysis of the tradeoffs among the alternatives, and recommendation of the preferred alternative.

A System of Accounts is used to display "the significant beneficial and adverse impacts of alternative plans for the purpose of tradeoff analysis and decisionmaking." Four accounts are used -- NED, EQ, Regional Economic Development (RD), and Social Well-Being (SWB).6/ The contents of RD and SWB are "benefits traditionally termed intangible under existing practice."7/ Alternatives are evaluated by establishing their contributions to the planning objectives and the four accounts.

Recommendation of the preferred alternative is made by the District Engineer, who will "select the plan in the best public interest. This selection will be based upon the public response to the detailed plans carried through the final stage." The Corps regulations go on to say that "there are two basic criteria for plan recommendation: the net benefits rule and Corps authority to implement." The net benefits rule requires that a recommended plan be justified on the basis that combined beneficial NED and EQ effects outweigh combined adverse NED and EQ effects. Water Resources Council revisions to the Principles and Standards, published in the Federal Register December 14, 1979, state that "a plan lacking net NED benefits may be recommended when EQ benefits are sufficiently large, even though the latter are not stated in dollar terms."

Study reports are prepared at the District level and are reviewed by the Division Engineer and, in the case of Congressionally authorized projects, by the Board of Engineers for Rivers and Harbors or the Mississippi River Commission prior to transmittal to the Chief of Engineers. For projects under continuing authorities, approval by the Chief of Engineers constitutes project authorization. For Congressionally authorized projects, the report is transmitted to the Secretary of the Army, then to OMB, and then to the Congress, which must authorize construction and appropriate funds.

6/ In proposed revisions to the Principles and Standards, published in the Federal Register on April 14, 1980, the Regional Development and Social Well-Being accounts were renamed Regional Economic Development (RED) and Other Social Effects (OSE), respectively. These were name changes only; the composition of the two accounts remains the same.

7/ Engineering Regulation 1105-2-921, pages 15-16.

Provisions for public involvement and interagency coordination in the planning process are many. When a study is initiated, public notice is sent to persons known to be interested and one or more public meetings are held as means of fostering public involvement. Once the study reaches the Headquarters level, the Chief of Engineers sends the proposed report, with an environmental impact statement, to the affected states and Federal departments for their review and comments. Letters expressing the views of Federal, state and local agencies are included in the study report and transmitted to the Congress along with the report of the Chief of Engineers.

The principal environmental review and consultation requirements applicable to all Corps civil works projects are listed in its NEPA procedures. (Federal Register, 8/25/80). Procedures for coordinating its planning with state coastal zone management programs and complying with the Section 307 consistency requirement are contained in these NEPA regulations.

Expressions of Corps water resources policy are contained in its proposed NEPA procedures, its final procedures implementing the Floodplains Executive Order (44 FR 95, 5/15/79), its proposed regulations implementing the Wetlands Executive Order (45 FR 113, 6/10/80), its regulations (40 FR 217, 11/10/75, updated in 44 FR 104, 5/29/79) and internal guidelines implementing the Principles and Standards, and a variety of other regulations, manuals, technical letters and memoranda. All but the most recent policies are set forth in the Digest of Water Resources Policies and Authorities, which summarizes Corps policies as follows:

> It is the policy of the Corps of Engineers to develop, control, maintain, and conserve the Nation's 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 development 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 President's June 6, 1978 Water Policy Message to Congress proposed a comprehensive set of water policy reforms based on a review of Federal water resources development programs, including those of the Corps of Engineers, the Bureau of Reclamation (now the Water and Power Resources Service), the Soil Conservation Service, and the Tennessee Valley Authority. It found, among other things, that ... "projects often are planned without a uniform, standard basis for estimating benefits and costs," and that "some water projects are unsafe or environmentally unwise and have caused losses of natural streams and rivers, fish and wildlife habitat and recreational opportunities." Several of the reforms affect the Corps of Engineers' Civil Works Program. These reforms, and the status of their implementation, will be noted wherever applicable in the following discussion.

2. Conclusions and Recommendations

a. Corps regulations implementing the Floodplains and Wetlands Executive Orders should be strengthened to incorporate fully the policies and objectives of the Orders in the planning of civil works projects.

Like the Corps Regulatory Program's public interest review, the Principles and Standards (P&S) employ a process of balancing economic development and environmental quality objectives, rather than establishing substantive policies to guide planning and decisionmaking. Even though the Floodplains and Wetlands Executive Orders have imposed substantive coastal protection policies, they appear to have been interpreted by the Corps to require balancing rather than positive action.

The Floodplains Executive Order, for example, states that it is each agency's responsibility "to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development whenever there is a practicable alternative." The Corps implementing regulations state the Corps policy "to avoid or minimize adverse impacts associated with use of the base floodplain and avoid inducing development in the base floodplain unless there is no practicable alternative." The Corps regulations provide that "the decision on whether a practicable alternative exists will be based on weighing the advantages and disadvantages of floodplain sites and nonfloodplain sites." Even if a "practicable alternative" to taking action in a floodplain is identified, the regulations contain no requirement that it be adopted.

Similarly the Wetlands Executive Order established each agency's responsibility "to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." Again, the Corps' proposed implementing regulations state the Corps policy:

> "to avoid undertaking actions in wetlands ... unless the District Engineer concludes that no practicable alternative to undertaking the action in wetlands exists ... The decision on whether to undertake an action in wetlands and the conditions under which it will be allowed to occur are ... determined by the outcome of the general balancing process. That decision should reflect the national concern for both protection and utilization of important resources."

The regulations state that "the test of what is practicable depends upon the situation and includes consideration of pertinent factors such as economic, environmental, social or technology." Like the regulations implementing the Floodplains Executive Order, these regulations contain no requirement that practicable alternatives be adopted.

The Corps states that determining practicability requires balancing competing demands for a limited resource and that in order to solve an existing flood damage problem, it may be necessary to accept some induced

development. However, as noted in the Regulatory Program discussion which follows, without standards for determining when resource losses will be considered unacceptable, balancing alone may be inadequate to protect significant coastal resources because the larger the economic benefits to be derived, the larger the environmental costs that can be justified.

Recommendations:

(i) The Corps should develop criteria and standards for its practicability assessment, which identify when coastal resource losses from proposed civil works projects will be considered unacceptable.

(ii) The Corps should amend its floodplain management and wetlands protection procedures to include substantive standards for identifying "practicable alternatives" and require that practicable alternatives to actions in or adversely affecting floodplains or wetlands be adopted.

b. Although the Water Resources Council Principles and Standards have improved the planning of water resources projects substantially, modifications are needed to assure complete evaluation of environmental losses.

The President's Water Policy Message stated that "benefit-cost analyses have not been uniformly applied by Federal agencies, and in some cases benefits have been improperly recognized, 'double-counted' or included when inconsistent with Federal policy or sound economic rationale." He directed the Water Resources Council to "prepare ... a manual which ensures that benefits and costs are calculated using the best techniques and provides for consistent application of the Principles and Standards and other requirements." In response to this directive, two manuals have been prepared; one containing procedures for evaluating the economic development impacts of water resource projects (the NED Manual, issued on December 14, 1979 and amended on September 29, 1980) and one containing procedures for evaluating their environmental quality impacts (the EQ Manual, proposed on April 14, 1980). However, although the evaluation processes prescribed in these manuals contain many improvements over the existing processes, several problems remain.

First, the guidance for evaluating environmental effects needs to be made more specific. In contrast to the highly detailed procedures for evaluating economic effects, this guidance is presently too general to assure consistent implementation. For example, in the EQ Manual the guidance on important resources to be analyzed in the evaluation process consists of a table of broad resource categories. However, there is no statement that these resources will always be considered to be significant and, hence, to require analysis, nor are key indicators identified for use in the impact assessments.

In addition, the EQ Manual indicates that "the state of the art for analysis of EQ effects has not matured to the point where acceptable, specific, quantitative measurement and evaluation techniques could be adopted as requirements." At the same time, other sources have concluded that "sufficient knowledge of ecological processes does exist for

reasonable predictions to be made in most cases." In fact, many methods are available; the problem is 8/ rather to select the right method in the right situation. The Corps is cooperating with the Water Resources Council and other water resources agencies in the preparation of a 3-year work plan to develop EQ measurement procedures. The work plan was approved at the Council's July 30 meeting.

Second, the guidance for determining the geographic scope of project planning is too general to assure full evaluation of environmental impacts. Typically, the planning area within which project effects are evaluated is defined as the area immediately adjacent to a project, usually within one to two miles. The full potential of a project to cause shoreline damage often cannot be evaluated within this limited area, resulting in follow-up projects to ameliorate the unanticipated damages. For example, one quarter of the benefits justifying a Corps project to extend the jetties at the mouth of the Chetco River in Oregon were reductions in the annual maintenance dredging costs caused by extensive shoaling between the existing jetties. Although the environmental impact statement noted that extension of the jetties beyond the surf zone, as recommended, "could potentially affect erosion of the beach to the south" and could affect the productivity of the Chetco River estuary, these effects were not evaluated. The proposed Water Resources Development Act of 1979 contains at least 30 projects, totalling more than $57 million, which correct problems caused by already constructed Corps projects. 9/

Third, the discount rate used, and the method of applying it, understates the true cost of water resources projects. In accordance with the provisions of Section 80(a) of the Water Resources Development Act of 1974, the Water Resources Council annually establishes the discount rate to be used for all water resource project planning. However, the law allows the rate to be increased by only one-quarter percent per year. Thus, the rate presently used by water resource agencies is 7 3/8 percent, a rate below the present cost of money. As a consequence of using unrealistically low discount rates, more projects are approved, larger projects are approved, and projects approved tend to be those with high initial costs and long term, high risk benefits.

Recommendations:

(i) The Water Resources Council should develop more specific guidance for evaluating environmental effects. The guidance should identify environmental resources that will always be considered significant and, hence, require analysis. For each such resource, it should specify key indicators that must be investigated.

8/ National Research Council of the National Academy of Sciences, Ecological Effects of Highway Fills on Wetlands.

9/ House Public Works Committee Report on H.R. 4788, the Water Resources Development Act of 1979, Sections 115, 306, 319, 327, 330, 336, 337, 338, 339, 340, 341, 342, 343, 350, 355, 358, 367, 371, 416, 427.

(ii) Pending completion of its three-year study, the Water Resources Council should develop and publish interim guidance on available techniques for forecasting and measuring environmental effects, including guidance on how and when they can be effectively applied.

(iii) The Water Resources Council should amend the Principles and Standards to require that the geographic scope of analysis include an area sufficient to evaluate the environmental and economic costs of altering the natural profile of the shoreline, in terms of environmental degradation and exacerbated effects of natural hazards, including erosion.

(iv) The Congress should reconsider the discount rate provisions of the Water Resources Development Act of 1974 and consider giving the Water Resources Council more discretion to set annual rates closer to the present cost of money.

c. The Corps procedures for assessing the secondary and cumulative impacts of its projects on sensitive coastal areas should be made more precise to assure effective implementation.

Procedures to consider cumulative and secondary impacts of civil works projects are extremely general. The Corps procedures on feasibility studies provide that "the aggregate or systems interaction of combined economic, social, and environmental effects should be considered along with evaluation of individual effects. In addition, the possibility of individual effects being part of a larger cumulative process should be investigated." The Corps regulations implementing these procedures, however, neither restate this requirement nor provide guidance on the manner in which these impacts will be addressed.

As discussed in the section on the Corps Regulatory Program, the Corps has no system for retrieving environmental information on the projects it has undertaken in an area short of examining every project report. It has no system for determining the effects of activities undertaken by other public and private entities under Corps permits. As a consequence, assessment of cumulative impacts is difficult at best.

The Corps' floodplains management regulations state that impact identification and assessment will apply to "any induced development likely to occur in the base floodplain with the proposed action," and that "whenever there is no practicable alternative to undertaking an action in the floodplain, steps should be taken to minimize the impact of floods on human safety, ... and any induced development likely to occur as a result of the action." However, no specific guidance has been issued on how to account for such induced development in sensitive coastal areas.

As a consequence, project report discussions of possible secondary or cumulative impacts tend to be muted at best. For example, the total discussion of secondary effects in the Chetco River project report was only that the jetties would "facilitate increased use of the (Chetco River) estuary;" the nature of the increased uses and their effects were neither described nor evaluated.

In addition, there appears to be some reluctance to assume responsibility for secondary effects. For example, in recommending a Santa Ana (California) main stream flood control project, the District Engineer recommended acquisition and preservation of an 84 acre area which the Fish and Wildlife Service indicated might be designated a critical habitat for the endangered California Least Tern. The Board of Engineers for Rivers and Harbors rejected this recommendation, noting the regulatory authority of other Federal, state and local agencies to protect the area and stating it was "not convinced that the alleged indirect effects of the project, which may result from induced residential and commercial development following improved flood protection, are a Corps of Engineers project responsibility."

The definition of "effect" used in the Principles and Standards and the Corps implementing directives may also impair consideration of environmental impacts. While CEQ regulations define "effect" as any event caused by a Federal action, the P&S and Corps directives define effect as "the difference between the specific without plan and with-plan condition of an EQ resource." This can encourage forecasts of intensive resource exploitation in the "without" plan condition so that the difference between the "without plan" and "with-plan" condition is minimized when structural plans are proposed. For instance, if development of wetlands and floodplains were forecasted to be reasonably likely to occur, this definition could lead to the conclusion that a particular proposal would have no effect since the area would likely be developed under either the with or without plan scenario. As a result mitigation of project impacts would be minimized even though the adverse environmental impacts of the project could be substantial.

Recommendations:

(i) The Corps should develop detailed and specific procedures for identifying and assessing the secondary and cumulative impacts of its projects, including relating the effects of separate projects within the same shoreline system.

(ii) The Corps should develop a data system that collects and disseminates environmental information on proposed, ongoing and completed projects by geographic areas that are important in Corps planning, such as drainage basins. This information should be shared with the Corps Regulatory Program so that each program will have knowledge of the other activities in planning for a geographic area.

(iii) The Corps should develop specific program guidance on measures to avoid induced development in environmentally sensitive coastal areas, including wetlands, floodplains, barrier islands, and important habitat for fish and wildlife, and on measures for mitigating adverse impacts where they cannot be avoided.

(iv) The Water Resources Council should amend the P&S to redefine "effect" to be consistent with CEQ's NEPA definition.

d. Corps policies and procedures need to be strengthened to assure full consideration of nonstructural alternatives.

As the natural processes of the shoreline have become better understood, the application of structural solutions to problems of navigation, flood control, and beach erosion control has become a source of mounting controversy. Many scientists point out that the rate of shoreline erosion along the Nation's Atlantic, Pacific and Gulf coasts is controlled by sea level, and that sea level is generally on the rise. In addition, the shoreline is not a static environment amenable to the maintenance of fixed points and property lines. Rather, it is a dynamic environment which is contantly being molded and remolded by natural processes. Wind and wave action moves sand onshore, offshore and along the shore. This sand movement causes alternate erosion and accretion of the shoreline depending on the weather conditions, the seasons, and the direction and violence of the wave attacks on the shore. In the natural state, these scientists point out, this movement seldom produce a significant loss or gain in the overall area of beaches, but it does produce changes in the shape of the beaches -- hence the problem in trying to hold a fixed point.

People have introduced changes both onshore and offshore that have seriously interrupted the natural shoreline processes. Changes such as the construction of dams and roads and the urbanization of large land areas have reduced the supply of sand needed to nourish and maintain the shores. In addition, recent years have seen a rapid encroachment of development and population along the Nation's shoreline. Unwise development too close to the shore has created a demand to "stabilize" inherently unstable areas. Unfortunately, in many cases such stabilization efforts may actually accelerate erosion in nearby areas.

On December 14, 1979, in response to the President's water policy initiatives, the Water Resources Council published revisions to the Principles and Standards which require the preparation of "a primarily nonstructural plan as one alternative whenever structural project or program alternatives are considered." Prior to the revised rule, the Corps procedures implementing the P&S recognized that "nonstructural measures should be formulated if they are economically and/or environmentally sound" ... and required that "if a nonstructural plan is not developed, the report of the District Engineer will fully describe how nonstructural measures were considered throughout the planning process and the role they played in the development and selection of the recommended plan." The revised rule will mean that in the future a "primarily nonstructural" alternative must be developed and carried to the plan selection stage.

However, a number of impediments still exist to full consideration of nonstructural alternatives. Some of these are outside the Corps' control, especially strenuous local opposition to evacuation and relocation, but some are the result of policies, procedures and practices that do not reflect the national interest in promoting nonstructural alternatives.

First, the most serious impediment to full consideration of nonstructural alternatives appears to be the lack of clarity within the Corps regulations about what a nonstructural alternative is and under what circumstances it can be effectively applied. The Corps' proposed procedures on use of nonstructural measures define these measures as all other (than structural) actions, including floodproofing designed to reduce or avoid flood damages, or to enhance the value of the floodplain. They also include bridge modifications, relocations or removals that do not fall within the definition of "structural measures" as defined above. As a result, aside from levees, channels and reservoirs, which are clearly structural, it is unclear where to draw the line between structural and nonstructural alternatives or how to evaluate nonstructural measures once the line is drawn. In addition, the concept of instituting a range of nonstructural measures to deal with different aspects of a problem seems absent from the procedures.

Second, the P&S allow benefits from more intensive use of the floodplain within the same land use category and from the addition of new uses to the floodplain (known as intensification and location benefits) to be counted only by structural flood control alternatives. These categories seem inconsistent with the national policy expressed in Executive Order 11988 to "avoid direct or indirect support of floodplain development wherever there is a practicable alternative.

Third, although some project reports note that useful nonstructural measures are being applied by local communities, the Corps has not made its assistance contingent on the institution of such measures where they were not already present.

Fourth, although a requirement to consider nonstructural alternatives has been a part of the P&S and Corps procedures since 1973, the team was able to identify only one coastal project that recommended a nonstructural alternative. That project, in Baytown, Texas, recommended evacuation and relocation of residents of a subsiding area which is now being flooded at high tides. However, it has not been implemented because local residents oppose paying the local contribution requirement.

The New England River Basin Commission, under contract to the Water Resources Council, is sponsoring a study to determine the problems water resources agencies are experiencing in implementing the provisions of Section 73 of the Water Resources Development Act of 1974 on consideration of nonstructural alternatives. A draft report of this study has been submitted to the Council.

Recommendations:

(i) The Corps procedures should be revised to provide a more detailed definition of nonstructural measures and alternatives and better guidance on how they can be applied. The Economic Development Administration's

regulations on this point provide a useful model. The regulations specify that nonstructural measures are those that (a) eliminate or reduce the need for structural alteration of waterbodies and their associated floodplains and wetlands, (b) are intended to preserve, restore or imitate natural hydrological conditions, and (c) may be either physical or managerial in character. EDA's regulations also state that a nonstructural alternative may be composed of a range of nonstructural measures which:

a. control the uses and occupancy of floodplains and wetlands, e.g., floodplain zoning, subdivision regulations;

b. preserve floodplain and wetland values and functions through public ownership, e.g., fee title, easements, development rights;

c. restore the natural values and functions of floodplains and wetlands, e.g., move existing structures out of the floodplains;

d. delay or reduce the amount of runoff from paved surfaces and roofed structures discharged into a floodway, e.g., construction of retention basins, use of flow restricting barriers on roofs;

e. maintain natural rates of infiltration in developed or developing areas, e.g., construction of seepage or recharge basins, minimization of paved areas;

f. protect streambanks and shorelines with vegetative and other natural cover, e.g.,use of aquatic and water loving woody plants;

g. restore and preserve floodplain and wetland values and functions and protect life and property through regulations, e.g., floodproofing building codes which require all structures and installations to be elevated on stilts above the level of the base flood; and

h. control soil erosion and sedimentation, e.g., construction of sediment basins, stabilization of exposed soils with sod, minimization of exposed soil.

(ii) The Water Resources Council should amend the EQ Manual to reflect the noneconomic characteristics and benefits of nonstructural flood control measures. The Council should also reconsider whether intensification and location benefits should be used in the benefit cost analysis.

(iii) The Corps should amend its procedures to require that its flood control assistance be conditioned on instituting, by the benefiting community, all practicable nonstructural measures to reduce the future risk of flood loss and degradation of the natural and beneficial values of floodplains. At a minimum, this should include an acceptable floodplain zoning ordinance.

e. Substantial benefits would result from expanding the Corps' coastal engineering research program to address important questions concerning the geological effects of "stabilized" shorelines.

Substantial and growing controversy exists among experts about the effects of "stabilized" shorelines and whether, in the long run, shorelines can be stablized. An inlet stabilization and channel deepening project at Oregon Inlet, North Carolina, illustrates this point. The proposed project provides for stabilizing Oregon Inlet with a dual rubble-mount jetty system projecting about 3,000 feet beyond the adjusted shoreline. To prevent accelerated erosion around the jetties, the Corps has proposed a sand bypass system involving a pipeline dredge which would operate initially on an annual basis during summer months and later at 2-3 year intervals. The Corps' proposal follows several years' work. The Corps states:

> The design of the Corps project was developed over several years by the Wilmington District office, and the Waterways Experiment Station. Studies have included physical model testing and numerical simulation modeling. Studies have demonstrated that an efficient sand bypassing system can be developed.

In August, 1979, the National Park Service, which operates the Cape Hatteras National Seashore to the south of Oregon Inlet, retained the services of four coastal scientists to review and assess the proposed jetty system. Their unanimous opinion, in direct conflict with the opinion of the Corps experts, was that the sand bypass system was "woefully inadequate" and that "the proposed jetties will produce accelerated and severe erosion far exceeding normal rates."10/ This conclusion is supported by the independent review of other coastal scientists.11/

As a principal supplier of Federal funds for shoreline projects, the Corps has a substantial interest in providing sound answers to such issues. Nevertheless, they are not currently addressed in the Corps' coastal engineering research program. This program is carried out by the Coastal Engineering Research Center, a small organization of about 160 employees. The CERC research program is divided into three major research areas: coastal hydraulics, coastal sediments, and coastal structures. Although CERC has done work on beach profiles (collecting

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10/ Report of Drs. Robert A. Dalrymple, Robert Dolan, Douglas L. Inman, and John C. Kraft to the U.S. Fish and Wildlife Service, contained in a Memorandum dated October 17, 1979, from Area Manager, Asheville Area Office to Branch Chief, Branch of Federal Projects, Washington, D.C.

11/ Letter from Dr. Orrin H. Pilkey of Duke University to Mr. Robert Herbst, Assistant Secretary of Interior for Fish, Wildlife and Parks, dated 6/25/80.

and analyzing data on specific beaches over several years) and has begun to develop a mathematical model to predict sediment erosion and deposition patterns on nourished beaches, significant questions remain to be addressed. These include longrange, long distance and seasonal effects of sand trapping on the long-shore sand transport system; effects of shoreline "stabilization" on offshore changes in topography, wave refraction, and current patterns; and comparative erosion rates on natural, nourished, and structurally stabilized shorelines. Basic data gathering is also needed to establish a data base on erosion rates and sea level rise in order to provide the basis for comparative erosion rate studies and to determine the effect of sea level rise on erosion patterns. CERC has begun this process with a contract to the NOAA Natural Hazards Group to compile data on nationwide erosion rates and trends for a 100-year period.

Recommendations:

(i) The Corps of Engineers should develop and begin a program of geological investigations of the shoreline equilibrium on stabilized shorelines. These investigations should embrace the entire shoreline system, including the long-shore transport system and the effects on the continental shelf.

(ii) The Coastal Engineering Research Center should undertake long-term field studies of processes and erosion rates of nourished beaches and adjacent inlets and lagoons and compare these to the processes and erosion rates of natural beaches.

f. Although Corps policies and procedures are in accord with the Fish and Wildlife Coordination Act, greater precision is desirable to assure uniform application of adequate mitigation measures.

The basic mechanism for addressing adverse environmental impacts from Corps projects is the Fish and Wildlife Coordination Act. The Act requires a construction agency to include in its report for authorization "... such justifiable means and measures for wildlife purposes as the agency finds should be adopted to obtain maximum overall project benefits." In an article prepared for the September, 1978 edition of Fish and Wildlife News, Major General Charles I. McGinnis, Director of Civil Works for the Corps of Engineers, interpreted this requirement as follows: "Congress was aware that it would not be justifiable to mitigate for all damage and that some damage would have to be accepted to gain the economic benefits of water resource projects." Current Corps mitigation policy states that:

> "The Coordination Act authorized the inclusion in water resource development plans of justifiable measures to offset damages to fish and wildlife. Thus, when the cost of measures for this purpose are justified by the monetary or nonmonetary effects attributable thereto, they will be included in the project responsible for the damages.

All such measures will be considered a part of the water project for purposes of economic evaluation and appropriate cost sharing."

No criteria for when mitigation will be required, independent of the cost/benefit analysis, have been provided.

Mitigation is a term used in at least two different ways. It can mean taking action to reduce harmful impacts or providing compensation in light of unavoidable impacts. The Corps attempts to reduce harmful impacts by successive refinements of its planning alternatives to eliminate harmful features. However, the application of this practice appears to be uneven. A review of 23 recently completed Corps projects revealed that in some reports specific mitigation features were enumerated, in others mitigation was not addressed, and in still others, like the Los Angeles-Long Beach navigation project, "no mitigation measures were identified as being required."

Another issue which has resulted in uneven application of mitigation measures is the question of who should be responsible for operation and maintenance of wildlife areas developed for mitigation purposes and how the costs of operation and maintenance should be borne. The Corps maintains that the Fish and Wildlife Service, National Marine Fisheries Service or state fish and game agencies are better equipped than the Corps to manage areas for wildlife purposes. The resource agencies feel that the current practice, under which the Corps is responsible for implementing mitigation measures associated with its projects and for funding related operation and maintenance costs, is correct.

The procedures on the Fish and Wildlife Coordination Act, which address these issues, are in the process of revision. Although President Carter directed the Department of Interior to promulgate the procedures by March 1, 1979, serious controversy resulted in a decision to prepare an EIS and final rules have still not been issued.

Recommendation:

The Corps should amend its mitigation policy to require that all practicable mitigation measures be incorporated into its proposed projects and to provide detailed guidance on what types of mitigation measures may be appropriate to various types of impacts.

g. More postconstruction monitoring of Corps projects is needed.

Depending on the type of project, operation and maintenance may be a Federal (Corps) or non-Federal responsibility. However, in either case, except in unusual circumstances, there is no postconstruction follow-up and monitoring of projects is seldom conducted to determine (1) if mitigation measures are being implemented as intended and if they are efficacious, and (2) if projected benefits have actually materialized.

The economic justifications of water projects are based on projections of increased employment, increased traffic on a waterway, lower transportation costs, increased recreational use, etc., -- far into the future. Many of these projections are extremely difficult to make and involve substantial degrees of uncertainty. In such cases, it is particularly important to follow up on the projects after completion to determine if the projections were accurate. Unfortunately, as noted in a report on Water Resources Priorities for the Northeast, issued in September, 1979 by the Consortium of Northeast Organizations, an organization providing staff support to the Northeast Congressional delegation: benefit calculations used to "sell" many dubious water resource investments have rarely been reviewed after the fact -- to see if the promises of increased employment, navigation, recreation and others were actually delivered.

Recommendations:

(i) The Corps should establish a procedure for postconstruction monitoring of its projects (a) to determine if mitigation measures are continuing to be implemented and if they are efficacious, and (b) to validate projections of benefits and costs to provide feedback for future planning of similar projects.

(ii) The Corps should report to the Council on Environmental Quality in three years on the results of its monitoring, including (a) the problems it has identified and how they are being solved, and (b) the conclusions it has drawn respecting both mitigation and cost/benefit analysis and how they will be integrated into future planning.

F. Agricultural and Rural Development Assistance
Farmers Home Administration

1. Program Description

The Farmer's Home Administration (FmHA) provides agricultural and development assistance to rural communities through a combination of loans, loan guarantees, and grants to individuals, local governments, non-profit organizations, and private business enterprises. During FY 1980, FmHA's allocation of funds to coastal states and territories totalled $5.402 billion. FmHA programs affecting coastal areas include:

a. Community facilities -- Under the Consolidated Farm and Rural Development Act of 1965 and the Rural Development Act of 1972, FmHA provides loans and grants for rural water and waste disposal systems and other community facilities, such as fire stations, community halls, hospitals, nursing homes, medical clinics, libraries, schools, and recreation centers. Projects lacking other means of financing can receive FmHA loans for up to 40 years at a statutory maximum interest rate of 5 percent. Grants can be added where necessary to prevent a system's debt repayment from imposing excessive service rates on patrons of the system. Since 1965, FmHA has financed some 10,500 water and sewer systems nationwide, ranging in coverage from small local communities to intercommunity or multi-county areas.

FmHA also finances the local costs of projects developed under the Soil Conservation Service's Small Watershed and Resource Conservation and Development Programs. Eligible projects include irrigation and drainage systems, projects for soil conservation, flood prevention, solid waste management, and agriculture-related pollution control, and water storage facilities.

b. Housing -- Under Title V of the Housing Act of 1949, FmHA administers a large program of loans and loan guarantees for individual home ownership and a program of loans to build or purchase and rehabilitate multi-family rental housing units for low and moderate income persons in rural areas and towns with populations of not more than 10,000 persons.

c. Business and Industry -- Under the Consolidated Farm and Rural Development Act, FmHA provides loan guarantees to businesses in towns and cities with populations of up to 50,000 persons to stimulate business and industrial growth. These loan guarantees can be used for expenses such as the purchase of land, buildings, and equipment and for working capital. In addition, industrial development grants are available to public bodies to buy land, install utilities, and make other improvements on rural industrial sites.

d. Farm Programs -- Under its farm assistance programs, FmHA provides loans to family farmers to buy, improve or enlarge farms and to provide operating capital. Program elements with special potential to affect coastal areas include emergency loans to cover farming losses inflicted by natural disasters and loans for water resources projects, such as irrigation and drainage systems.

FmHA administers its programs through more than 1800 field offices at the county, district (multi-county), and state levels. Under a recent reorganization, most assistance to individuals is made through county offices, while district offices process "group" projects -- those assisting farmers associations, non-profit organizations, and public bodies. Except for single family housing, most projects are reviewed by the state offices to verify eligibility, authorize an application, and approve the loan or grant. Only the largest or most controversial projects are reviewed by the national office.

FmHA's environmental policies are contained in its 4-year-old NEPA instruction (FmHA 1901-G) and in Secretarial Memorandum No. 1827, Statement of Land Use Policy, dated October 30, 1978. The policies contained in the NEPA instruction state that FmHA will ... "assess the environmental impact of any proposed FmHA actions that the State Director determines may significantly affect the environment," ..."act to avoid or minimize adverse environmental effects, including secondary effects, and restore or enhance environmental quality," comply with the requirements of this instruction "at the earliest possible time before any agency decision is made," ... and provide "training and guidance ... as needed as an integral part of program administration." The statement of environmental policy contained in the Secretarial Memorandum provides that the Department will "advocate the retention of Important Farmlands and Forestlands, Prime Rangeland, Wetlands, or other lands designated by state or local governments,"... "advocate actions that reduce the risk of flood loss, minimize impacts of flood on human safety, health, and welfare, and restore and preserve the natural and beneficial functions and values of floodplains," "...advocate the protection of threatened and endangered animal and plant species and their habitats, designated archaeological, historic, and cultural sites, and designated ecosystems" ..."advocate the conservation of natural and man-made scenic resources."

Field loan officers are responsible for the complete processing of applications, including environmental review. Environmental assessments usually consist of an applicant's assessment and a fifteen question checklist filled out by the FmHA loan officer. If the FmHA official who receives an application believes it might have a significant impact on the environment, he/she refers the application to the state office. In such cases, the state director is responsible for determining whether or not an environmental impact statement is needed.

2. Conclusions and Recommendations

a. FmHA has made substantial strides in recent months, but is still far behind other agencies in developing an environmental program.

As noted above, the principal vehicle for considering coastal resources protection is FmHA's NEPA directive. That directive, however, does not contain a procedure to ensure the identification and assessment of adverse impacts including primary or secondary effects of the project on floodplains, wetlands, barrier islands, or other sensitive areas.

The environmental assessment checklist prepared by field loan officers asks for little information on substantive environmental issues. Only three of the questions address environmental matters (effects on air quality, effects on water supply, and effects on waste disposal), and these require only "yes" or "no" responses. State directors determine the need for an EIS, but only if a project has been referred to them by a lower level. As a consequence, EIS's are seldom prepared. Only three EISs have been completed by FmHA as lead agency since 1970. Only one of these, a 1977 project to construct a water line from Buxton to Avon on the Outer Banks of North Carolina, was in a coastal area, and it was prepared after the loan was approved. Finally, FmHA's NEPA directive does not contain any specific policies or procedures for coordinating with state coastal zone management programs or complying with the Federal consistency requirement of the Coastal Zone Management Act.

These procedures are inadequate for evaluating the many complex resource protection issues that arise in FmHA funded projects. For example, FmHA has funded water and sewer projects all along North Carolina's coast. Many of these projects raise the full range of primary and secondary impacts on floodplains, wetlands, barrier islands, and prime habitat for fish and wildlife. Several projects have involved interconnections to regional watersystems that involve construction of water mains on highway rights-of-way that cross or are immediately adjacent to floodplains and wetlands. For example, a project approved in February 1980 involves expansion of the Brunswick County regional water system, including the construction of several high service water mains to link Ocean Isle Beach and Sunset Beach to the system. The preliminary engineering report on the project stated that "portions of the proposed water mains will cross Shallotte Inlet, the Intracoastal Waterway, and the Calabash River." It concluded that "these areas are relatively low in value relative to wildlife and marine resource production. Construction of the water mains in these areas is not expected to cause significant adverse impacts; however, every effort will be made to return disturbed areas to their original condition." No evidence was provided to support this conclusory statement, and no description of the mitigation effort that would be required was presented. The applicant and FmHA environmental assessments did not cover the water main element of the project or its impact.

In the absence of strong in-house procedures, great reliance is placed on project controversy and state reviews through the A-95 process to bring up environmental issues. However, with the exception of the Avon project mentioned above, the North Carolina Community Facilities Program staff could recall no instance of real controversy and no instance where the A-95 review had raised an environmental issue.

The environmental staff is aware of these deficiencies and is trying to institute needed changes, including substantial revision of the NEPA instruction. The revised draft now undergoing review within FmHA is a vast improvement over the current instruction. It contains substantive policies which incorporate and extend the policies of the Secretary's Land Use Memorandum, and specific and detailed criteria and procedures for determining the level of environmental assessment required, conducting the assessment, and determining what constitutes a significant environmental impact requiring an EIS. it also contains procedures for complying with the consistency requirement

of the Coastal Zone Management Act. This draft is expected to be published as a proposed rule in the immediate future.

As noted earlier, FmHA has not yet issued final procedures implementing the Floodplain and Wetlands Executive Orders. FmHA issued proposed procedures in the Federal Register on September 14, 1978. These proposed procedures provided no guidance for evaluating projects or their impacts and contained no substantive statements of FmHA policy. They were considered unacceptably vague by the Department of Agriculture and the Water Resources Council. FmHA expects to complete revisions to these procedures in the second quarter of FY 1981.

Recommendation

FmHA should be directed to accelerate the preparation of final procedures implementing the Executive Orders in close consultation with the Water Resources Council. The procedures should require the agency to consider secondary impacts and avoid funding projects in or affecting floodplains and wetlands whenever there is a practicable alternative.

b. FmHA's environmental staff needs to be augmented to carry out its environmental program.

FmHA's environmental staff currently consists of three people, all in the national office and all recent additions. At present FmHA has no environmental staff in any of its field offices, where almost all environmental reviews are performed, although three vacancy announcements have been issued for regional environmental positions.

Important policies for protecting coastal resources are contained in FmHA's proposed NEPA rule and in the Secretarial Memorandum on Land Use Policy, but with current staff, the agency does not have the capability to assure their implementation. The agency is considering the creation of a staff of six regional environmental specialists to provide advisory services and training to FmHA's field offices in carrying out their environmental review responsibilities. Three of these positions have been authorized. Another proposal contained in the proposed NEPA regulations would involve appointing existing staff in the state offices to serve as state environmentalists to review projects the state director approves. The appointees would usually be the state architects or engineers, whose regular duties are already extensive. For example, the North Carolina State Office has one engineer who annually reviews about 120-125 projects, worth $80-100 million, each of which involves reviewing preliminary engineering reports, prices, and plans and specifications; attending preconstruction conferences; inspecting projects during construction; and conducting the final inspection. Thus, while this proposal is not without merit, it must be considered in terms of existing resources and constraints within each state and should not be considered as a substitute for adequate environmental staffing.

Recommendation:

FmHA should be directed to conduct a review to determine the minimum numbers and types of additional environmental resources needed to carry out its statutorily mandated environmental responsibilities. It should report the results of its review within one year to the Secretary of Agriculture along with a description of how it proposes to implement the recommendations.

c. FmHA's field staffs need better guidance for carrying out their environmental responsibilities.

FmHA's decentralized structure results in little national control over local FmHA environmental decisions. As noted above, loan officers in FmHA's more than 1800 field offices are responsible for environmental reviews. Few of these personnel have any specific training or experience in environmental issues and problems. While the national office environmental staff has initated a program to train field personnel in environmental review requirements, not a single environmental specialist is available outside the national office to provide day-to-day advice and guidance in carrying out FmHA's environmental responsibilities. The problems this creates were illustrated during this Review on June 19, 1980 -- three years after the executive orders were issued -- when District Directors and members of the FmHA North Carolina State Office staff indicated that they had only just learned of the existence of the Floodplains Executive Order at a briefing the day before.

Recommendation:

FmHA should develop detailed guidance for field staffs on how to conduct an environmental review, what factors must be evaluated, what information is needed, and how to obtain it.

d. FmHA needs a mechanism or guidelines for mitigating adverse environmental impacts.

Consideration of project alternatives in the FmHA review process appears to be almost non-existent. As discussed above, EISs are seldom prepared and the environmental checklist does not ask for an identification of alternatives or mitigation measures. FmHA has the authority to attach mitigation conditions to its loans and grants, but so far these have addressed only financial matters and state requirements such as erosion and sedimentation plans. There appears to be minimal use of mitigation conditions to produce more environmentally sound proposals.

Recommendations:

(i) FmHA should be directed to develop specific criteria for determining when mitigation will be required and the manner in which it will be achieved.

(ii) FmHA should be directed to develop and include in its revised floodplains and wetlands procedures specific guidance on the identification and analysis of alternatives for projects affecting significant coastal resources, including wetlands, floodplains, barrier islands, areas of substantial habitat value for fish and wildlife, groundwater recharge areas, and prime coastal agricultural land. The guidance should require preparation of a detailed environmental assessment, including an analysis of alternatives, for any project having potential for adverse environmental effects or for supporting expanded development in these areas.

e. FmHA needs to improve its policies for minimizing the secondary impacts of infrastructure projects in sensitive coastal areas.

FmHA supports basic infrastructure projects in relatively undeveloped areas. These projects may have greater potential for growth effects than if they were in already developed areas. The need for careful review of its projects is therefore especially great. While some FmHA programs try informally to encourage projects providing for the needs of existing residents and to discourage projects based on projections of need far into the future, this is not a stated agency-wide policy, and agency practice is uneven. For example, FmHA has approved and is reviewing the final plans and specifications for a project which will provide a $53 million, 5 percent loan to the Florida Keys Aquaduct Authority for the construction of a new water line through the Florida Keys with more than double the capacity of the old line. The line will allow new development throughout the Keys, an area whose vulnerability to hurricane damage has been repeatedly demonstrated.

Recommendation:

FmHA should amend its regulations to adopt, as formal agency policy, the avoidance of growth in sensitive coastal areas whenever there is a practicable alternative.

f. FmHA needs a mechanism and adequate data for assessing the cumulative impact of its programs.

Many FmHA projects are small in size and potential impact when taken individually, but have potential for substantial cumulative effects. This is especially true of the housing programs -- with FY 1980 authorizations of nearly $3 billion in coastal states. FmHA's current and proposed NEPA procedures recognize the concept of cumulative impact, but provide no guidance on how to assess it. FmHA has started a data base to keep track of its projects, but no environmental data are tracked, and so far only two programs are included.

Recommendations:

(i) FmHA should design a system to track basic environmental data on all FmHA proposed and approved projects by county (e.g., key natural resources affected by the projects and, if possible, the magnitude of the effect, such as floodplain acres affected by project, wetland acres affected by project, important agricultural lands converted, and acres preserved or restored). It should develop a retrieval system to allow loan officers at all levels easy and rapid access to the data base. Loan officers should be required to use this data, along with any other available data on related Federal actions in the area, to evaluate the cumulative effect of agency actions when considering new requests for assistance.

(ii) FmHA should be directed to conduct a retrospective study in several geographically representative counties to determine the cumulative impacts of past assistance. The results of this study should be used to develop procedures for assessing cumualtive impacts in the future and should be reported to the Council on Environmental Quality for use in developing government-wide guidance on this issue.

G. Bridge Administration Program
Coast Guard
U.S. Department of Transportation

1. Program Description

The primary mission of the Coast Guard Bridge Administration Program is to insure safe and unencumbered passage of marine traffic on the Nation's waterways by approving the location and clearance of bridges and causeways in or over navigable waters of the United States. The Coast Guard determines whether a proposed bridge or causeway will provide for reasonably safe and unobstructed navigation on the waterway, while also accommodating land modes of transportation that will use the bridge. Authority for the permitting process is found in 33 USC §§ 401, 491, 525-533, the International Bridge Act of 1972, and various Acts of Congress.

Permits issued for bridges under the Coast Guard's Bridge Administration Program are often for projects where the lead Federal agency is not the Coast Guard. This is especially true when the bridge is part of a highway, railroad or pipeline project. In these instances, the lead Federal agency retains the primary environmental responsibility, while the Coast Guard ensures that the environmental documentation addresses the bridge-related impacts of the project. If the bridge-related impacts are not adequately addressed, the Coast Guard may require revision of the lead agency document or issue a document of its own which describes the environmental impacts associated with the bridge construction.

Permit applications are reviewed in accordance with Coast Guard Regulations and the Bridge Administration Manual by the Coast Guard District Commander with jurisdiction over the area where the bridge is to constructed. Although permit issuance or denial is to be based primarily on navigational and environmental considerations, Coast Guard regulations 12/ only list technical factors for evaluating bridge construction permits, e.g., the height of the bridge above highwater, the direction of the current.

The Bridge Administration Manual, now being revised, consolidates all Coast Guard instructions, notices, and management policies applicable to the processing of permit applications, including NEPA, Section 4(f) of the Department of Transportation Act, and the Executive Orders. Proposed Chapter 2 of the Manual states that it is Coast Guard policy that decisions also be based on a "consideration of social, economic, and environmental goals." Although the issuance of bridge permits is subject to the Floodplains and Wetlands Executive Orders, the Coast Guard has not adopted

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12/ Coast Guard reports that during 1980 all permit denials were based on environmental grounds.

specific procedures to implement the Orders and relies instead on DOT's implementing regulations.

The review process also includes state and local review of the project through state A-95 clearinghouses and public involvement through the public notice and public hearing process. The review procedure takes approximately three to nine months, except for projects requiring preparation of an EIS which may take longer. In general, environmental documents are prepared by the district staff for the area in which the bridge is to be constructed. Final review of the case file and the proposed decision is performed by the staff of the Headquarters Bridge Permits Branch in Washington, D.C.

2. Conclusions and Recommendations

a. The Coast Guard should adopt strong policies to assure protection of significant coastal resources.

Although the Coast Guard is committed to complying with all applicable Federal environmental requirements, a serious impediment to achieving this objective is the general lack of specific policies and procedures for protecting significant coastal and other environmental resources. Coast Guard regulations, for example, contain no statements of environmental policy. Although the Bridge Administration Manual purports to set forth "detailed guidance" for complying with Federal environmental requirements, it contains only very general statements of environmental policy. For example, the section on wetlands essentially reiterates that it is Coast Guard policy to comply with the DOT order implementing the Wetland's Executive Order. The Coast Guard does not appear to have any specific policies for minimizing the secondary impacts of bridge construction on significant coastal resources. Although Coast Guard reports that it conditions permits to protect coastal resources in appropriate cases, the Coast Guard does not have specific policies to guide the decisionmaker as to when and what type of conditions are appropriate.

The Coast Guard also has chosen not to develop program specific procedures implementing the Wetlands and Floodplains Executive Orders. Instead, the Coast Guard relies on DOT Order 5650.2, Floodplain Management and Protection, to comply with E.O. 11988, and on DOT Order 5650.1A, Preservation of Wetlands, to comply with E.O. 11990. As noted previously, the DOT Floodplains Order is not fully consistent with the WRC's interpretation of E.O. 11988 that Federal agencies should take a strong stand against supporting development in floodplains.

Coast Guard reports that monitoring of permit conditions when they are imposed is difficult to perform because of staffing limitations. As a result Coast Guard relies on other Federal agencies and Coast Guard reservists to monitor compliance with permit requirements.

The lack of specific coastal resource protection policies has produced mixed results in practice. For example, despite the lack of program

specific wetlands policies, a permit to replace a bridge across Shinnecock Bay, Suffolk County, New York, was denied because the proposed alignment would destroy 3.5 acres of wetlands designated as prime wildlife habitat by the State of New York. The permit was denied on the authority of the Wetlands Executive Order because a practicable alternative alignment could have been used that would not damage the wetlands.

On the other hand, the Coast Guard approved a permit to construct a bridge to an undeveloped island off the South Carolina Coast in order to provide automobile access for a proposed housing development. Although Waterway Island is an artificial island located near the highly developed Isle of Palms, 66 acres of the 100-plus acre island are wetlands and the island provides habitat for numerous species of plants and wildlife. As a mitigating measure, the Coast Guard obtained an agreement that the applicant would not build any units in the wetlands and would reduce the number of dwelling units from 160 to 125. The Coast Guard was aware that approval of the permit would lead to development that would substantially change the character of the island and further stress the natural environment. However, approval was granted because denial would "deny the right to develop" and "was not justifiable due to the minor environmental effects of the proposed project." Apparently, the Coast Guard focused on the primary impacts of the actual bridge construction when deciding to grant the permit. There is little evidence in the environmental assessment that the Coast Guard fully considered the secondary impacts that upland development would have on the wetlands or the cumulative impacts of increased development in an already heavily developed area.

The Coast Guard also approved in November, 1979 a permit to rebuild a bridge to Dauphin Island, a barrier Island off the Coast of Alabama. The bridge had been totally destroyed by Hurricane Frederic on September 12, 1979. Although the construction involved over $37,000,000 in Federal funds, was located in a floodplain, and involved potential wetlands impacts, the Coast Guard decided, in accordance with its existing procedures, to treat the issuance of the permit as a categorical exclusion under NEPA -- i.e., as not requiring a detailed environmental assessment. While the Coast Guard's decision was upheld in a subsequent lawsuit filed by environmental groups, its action does not reflect an aggressive approach to implementing the Executive Orders. Recently, the Coast Guard appears to have precluded such a decision from occurring in the future by excluding the reconstruction of existing bridges "providing access to barrier islands" from its list of categorical exclusions established by the newly published NEPA procedures. (45 FR 32816, May 19, 1980)

Recommendations:

(i) The Coast Guard should develop and adopt policies and procedures specific to the Bridge Administration Program for implementing NEPA and the Executive Orders.

(ii) The Coast Guard should amend their regulations to include Coast Guard environmental policy.

(iii) The Coast Guard should develop and adopt specific policies for determining when permits for causeways and bridges that adversely affect coastal resources will not be approved. For example, the Coast Guard should consider denying permits for projects that provide access to undeveloped barrier islands when the primary purpose of such access is to accommodate nonwater-dependent development unless such development is clearly in the national interest.

(iv) The Coast Guard should develop and adopt specific policies for conditioning permit approvals to protect significant coastal resources including policies with respect to:

(a) mitigation of coastal resources destroyed by bridge or causeway construction;

(b) growth minimizing controls in the vicinity of Coast Guard permitted bridges such as access limitations on highways, or buffer zones;

(v) The Coast Guard should develop an effective program for monitoring permit conditions imposed to protect significant coastal resources. Such a program may include memoranda of understanding with the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the Corps of Engineers, defining ways in which these agencies can assist the Coast Guard in meeting its monitoring responsibilities. In addition, the Coast Guard should require periodic postconstruction reports from permittees describing compliance with imposed conditions.

(vi) The Coast Guard, in consultation with FHWA, should adopt mandatory standards for the design and construction of bridges and causeways in sensitive coastal areas. These standards should be aimed at preventing and minimizing damage to significant coastal resources.

H. The Section 10 and Section 404 Regulatory Programs U.S. Army Corps of Engineers, Department of Defense U.S. Environmental Protection Agency

1. Program Description

The Corps of Engineers (COE) administers permit programs under Section 10 of the Rivers and Harbors Act of 1899 and (in conjunction with EPA) Section 404 of the Clean Water Act. Section 10 prohibits construction activity in navigable waters or the excavation of material in such waters without the prior authorization of the COE. Section 10 permits are required for such activities as the construction of piers, placement of pipelines, erection of structures for oil development, and dredging of barge canals. Section 404 authorizes the COE to issue permits for the discharge of dredged or fill material into the waters of the United States, including coastal and inland waters, lakes, rivers, streams, and adjacent wetlands. Section 404 permits are required for placement of material in coastal waters and wetlands regardless of the activity associated with the placement. Each year the COE issues thousands of permits for activities in coastal areas ranging from the construction of private boat docks to offshore terminals for supertankers.

The principal consideration in COE permit decisions is whether issuance of the proposed permit is in the public interest. In determining the public interest, the COE balances the benefits that reasonably may be expected to accrue from the proposal against its reasonably foreseeable detrimental effects, weighing general environmental concerns, fish and wildlife values, flood damage prevention, land use, water supply, water quality, and food production. The following general criteria are considered during the evaluation of every permit application:

(a) the relative extent of the public and private need for the proposed project;

(b) the desirability of using appropriate alternative locations;

(c) the extent and permanence of the beneficial and detrimental effects the proposed project may have on the public and private uses to which the area is suited; and

(d) the probable impact of each proposal in relation to the cumulative effect created by other existing and anticipated projects in the area.

Proposed regulations implementing NEPA provide that environmental values are to be given equal consideration with economic, social and technical factors in determining the public interest.

The COE public interest review is illustrated by its denial in February 1977 of a permit for work in navigable waters of Chincoteaque Bay at the Captain's Cove Development in Accomack County, Virginia. The requested permit would have authorized work, some of which had already been completed, involving the dredging of canals through wetlands for private boat access to the bay and the filling of wetlands to create waterfront housing. In weighing the application, the COE determined that "achievement of water oriented recreational benefits" for the community "did not require each property owner to have direct access to Chincoteague Bay." The COE found that "such benefits can be derived through the construction of group use facilities" such as a marina. In addition, the COE found that dead end canals degrade water. Consequently, the COE denied the permit for the proposed (and existing) canals and directed the applicant to plug the existing canals.

The COE also found unacceptable the proposal to fill additional wetlands in order to create waterfront property. According to the COE, such "activity would benefit a limited number of individuals while resulting in environmental damage adversely affecting the general public" because "destruction of wetlands degrades the aquatic environment and thus reduces the public benefits derived from this important resource." However, with regard to wetlands that had previously been destroyed in violation of Section 10 and 404 the COE found that "restoration of these areas is not warranted." In reaching this decision the COE was "mindful of the fact that most of the lots fronting on the existing and proposed canals have been sold and that these purchases were made by individuals anticipating direct access to Chincoteaque Bay." The COE also recognized and appreciated public demand for second home communities offering water-oriented recreational facilities in coastal waters. For these reasons restoration of the disturbed wetlands was found not to be in the public interest.

In addition to the general policies outlined above, Section 404 permits must be evaluated against guidelines developed by the Environmental Protection Agency (EPA) in conjunction with the COE. The guidelines were issued on September 5, 1975, and proposed revisions were published on September 18, 1979. (44 FR 54222)

In any case when application of the guidelines would prohibit the discharge of dredged or fill material, the COE is required to consider as well the economic impact on navigation and anchorage of denying the permit. Nevertheless, EPA retains the final authority to disapprove the issuance of a permit if the discharge would have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas, or wildlife or recreation areas.

The COE has not published specific procedures implementing the Wetlands Executive Order. However, COE regulations set forth the policy that "the unnecessary alteration or destruction" of wetlands should be "discouraged as contrary to the public interest." No Section 10 permit will be granted for work in wetlands that perform important public functions unless "the benefits of the proposed alteration outweigh the damage to the wetlands resource and the proposed alteration is necessary to realize those benefits."

Final procedures implementing the Floodplain Executive Order were published in the Federal Register on May 15, 1979. These procedures, however, do not apply to the COE regulatory program since, in the COE's view, its public interest balancing process fulfills the requirements of the Executive Order.

The COE has broad authority to condition permits to protect the public interest in the waters of the United States. COE policies with respect to conditioning permits as a means of mitigating adverse effects on fish and wildlife values are briefly discussed in 33 CFR 320.4(c). The COE's policy is to condition permits "in appropriate cases" to protect fish and wildlife values.

On September 19, 1980, the COE published in the Federal Register proposed rules amending the Section 10 and 404 regulatory programs. These proposed rules, with some exceptions, essentially restate the COE policies discussed above.

2. Conclusions and Recommendations

a. <u>COE coastal protection policies should be more specific if they are to assure full protection of coastal resources.</u>

COE has established a policy framework that should assure general environmental concerns are adequately addressed. However, with respect to protecting significant coastal resources, this policy framework is very general. Only wetlands are currently considered in detail. COE's regulatory policies lack explicit recognition of the importance and vulnerability of beaches, sand dunes, barrier islands, coral reefs and estuaries.

It is COE policy not to issue a permit unless the potential benefits of a proposed project outweigh the potential detriments. However, the inherent danger, from a resource protection viewpoint, in balancing economic benefits and environmental costs, is that the higher the perceived economic benefit the greater the environmental cost that is acceptable. This situation is exacerbated by the difficulty of quantifying the benefits of coastal resources. Therefore, without clear guidance as to when environmental losses are unacceptable regardless of the short-term economic benefits, degradation of coastal resources is likely to continue unchecked.

The problem of relying on balancing alone to protect coastal resources is illustrated by the issuance of a Section 404 permit for dredge disposal in connection with the development of the Portsmouth refinery complex in Hampton Roads, Virginia. The site selected for the refinery met with serious opposition from EPA, FWS and NMFS as environmentally one of the least desirable sites on the East Coast. In addition, these agencies concluded that the refinery at Portsmouth would measurably increase an existing risk of long-term damage to the environmental resources of the area. Nevertheless, the Secretary of the Army approved the permit because:

The potential national economic development benefits to the Nation are substantial and far outweigh the costs (potential resource losses) of oil spills which would be anticipated during the expected life of the refinery.

The COE has broad authority to condition the approval of permits. According to 33 CFR 325.8 (b), District Engineers are authorized to issue permits "subject to such special conditions as are necessary to protect the public interest in the waters of the United States." (33 CFR 525.8(b)) Similarly a Section 404 permit may be subject to "appropriate discharge conditions to minimize unacceptable effects on the aquatic environment." (40 CFR 230.3 (d)(1)) COE policy with respect to conditioning permits to protect fish and wildlife values is to consult with appropriate fish and wildlife agencies "with a view to conservation of wildlife resources by prevention of direct and indirect loss and damage due to the activity proposed in a permit application." (33 CFR 320.4(c)) COE regulations further provide that "the applicant will be urged to modify his proposal to eliminate or mitigate any damage to such resources, and in appropriate cases" to condition the permit to "accomplish this purpose."

The proposed revisions expand substantially the guidance on conditioning of permits (§325.4, 45 FR 62757). Of special significance is the explicit recognition by the COE that permits should be conditioned to respond to the effects of secondary impacts that can be identified with reasonable certainty. However, the proposed mitigation policy (§325.4(c) 45 FR 62758) avoiding the direct impacts of construction are too passive and narrow to be in agreement with the fundamental policy aticulated in Section 101(b) of NEPA "to use all practicable means" to "preserve" the "natural aspects of our environment."

Recommendations:

(i) The COE should develop and adopt specific policies for protecting significant coastal resources. Such policies should provide standards and criteria for determining when permits for actions that adversely affect coastal resources will be denied.

(ii) The COE should adopt a strong policy of requiring applicants to use all practicable means, including habitat creation to mitigate adverse impacts on significant coastal resources as a condition of obtaining permit approval. In this regard, COE should require the conditioning of permits to protect against all secondary impacts that are reasonably foreseeable. The COE should specifiy the type of mitigation that is required in special permit conditions.

(iii) The COE should adopt a policy that establishes a presumption that any destruction of significant coastal resources must be replaced with an equivalent amount. For example, an acre of wetlands destroyed should be replaced with an acre of wetlands by creating a new wetland of equivalent productivity unless the proponent of the permitted project can demonstrate

clearly that there is no practicable method of accomplishing such an exchange. Created wetlnds should be peridically monitored to assure their viability.

b. The COE regulations implementing the Floodplain Executive Order need to be strengthened if they are to implement fully the intent of the Order.

COE regulations (33 CFR 239.1) state that only Section 2(c) of the Floodplain Executive Order pertains to the issuance of permits or licenses and that Section 2(c) requires agencies to: (a) consider and evaluate flood hazards for actions in the floodplain; (b) provide early public review of plans or proposals in floodplains for which the impact would not require an Environmental Impact Assessment (EIA); and (c) provide guidance to applicants to enable them to evaluate the effects of their proposal on the floodplain. The COE regulations conclude further that existing COE policies and procedures satisfy Section 2(c) of the Executive Order.

The intent of the Executive Order, as interpreted by the Water Resources Council, was to weight decisionmaking against providing Federal support for floodplain development -- i.e., actions that support floodplain development or harm natural and beneficial floodplain values are to be avoided unless no practicable alternative can be found. This anti-floodplain development bias is not fully reflected in the COE balancing approach. COE regulations state that "available alternatives to avoid adverse effects from any incompatible development in floodplains shall be considered." However, so long as the reasonably foreseeable benefits that may accrue from a proposal outweigh its reasonably foreseeable detriments the COE regulations impose no requirement to adopt less damaging alternatives or initiate mitigating measures. In this respect, the present COE regulations fall short of the requirements of the Executive Order.

Although the floodplain protection policies in the proposed revisions to the COE regulations. (§324.4(e), 45FR 62742), represent a positive step toward remedying the deficiencies noted above, they are not in full harmony with the intent of the Executive Order. For example, the district engineer is only required to "consider" measures to mitigate adverse impacts to the floodplain. The proposed regulations, therefore, also fall short of the intent of the Executive Order.

Recommendation:

The COE should amend its floodplain management procedures to bring them into full compliance with E.O. 11988 and the WRC guidelines. In particular, COE permit regulations should be amended to require implementation of practicable alternatives for permits in or affecting the floodplain, the avoidance of secondary development in the floodplain, and the mitigation of adverse impacts on natural floodplain values and functions.

c. COE and EPA should strengthen their policies for minimizing the secondary impacts of permitting actions on significant coastal resources.

Although the COE regulations recognize the need to weigh the secondary impacts of permit decisions, its procedures provide little guidance concerning the consideration to be given to such impacts during the public interest review process. The COE "general policies for evaluating permit applications" (33 CFR 320.4), for example, provide no explicit treatment of "secondary" impacts. Similarly, the EPA promulgated 404 guidelines provide little guidance for dealing with secondary impacts. The guidelines state that "no discharge of dredged or fill material will occur at a proposed disposal site if the Administrator of EPA determines ... that such discharge will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife or recreational areas." Unacceptable impacts are defined in terms of site-specific impacts of the discharge itself. Secondary impacts related to the activity made possible by dredging are not explicitly treated. For example, 40 CFR 230.5(a)(4) requires avoidance of "discharge activities that will destroy wetland areas having significant functions in the maintenance of water quality." There is no requirement, however, that permits be denied if the activity made possible by the discharge will destroy wetlands.

The proposed revised 404 Guidelines briefly discuss secondary impacts as "changes in the aquatic ecosystem that are attributable to the purpose of the discharge of a dredged material at a disposal site or a fill, and not to the actual placement of dredged or fill material." Although the definition would seem to cover "all" changes in the aquatic ecosystem that are attributable to the activity which necessitates the discharge, the examples provided in the proposed regulation appear to narrow the definition somewhat in that that they illustrate activities at the site of discharge.

> Septic tank leaching and surface runoff from residential or commercial developments on fill; leachate and runoff from a sanitary landfill located in waters of the U.S., and development of real estate improvements on a dredged material disposal site in a wetland in a manner that results in pollution of adjacent wetlands or other waters through runoff or other effects. (emphasis added)

The proposed guidelines require only that secondary impacts be "considered." No guidance is provided as to what action should be taken if the identified secondary impacts are likely to cause unacceptable environmental damage.

Recommendations:

(i) The COE should adopt a policy of giving equal consideration to primary, secondary, and cumulative impacts on significant coastal resources during the public interest review -- i.e., secondary and cumulative impacts identified with certainty should not be given less weight than direct impacts

only because of their nature. COE regulations should provide explicitly for the denial or modification of a permit on the basis of secondary impacts.

(ii) EPA should amend the 404 Guidelines to require that the COE consider the primary and secondary impacts of the activity or project that would be made possible by the issuance of a 404 permit in the determination of whether the issuance of the permit will result in unacceptable impacts.

d. The COE needs to develop and implement procedures and methodologies for assessing the cumulative impacts of permitting actions.

Each year COE district offices process thousands of permits in coastal areas. Most of these permitting actions involve relatively minor impacts to coastal resources. The District office in Charleston, South Carolina, for example, on May 19, 1980, issued three public notices for permit applications that proposed filling relatively small wetland areas: (1) .1 acre to accommodate a private dwelling and septic tank; (2) 1 acre to accommodate commercial development; and (3) 13,650 sq. ft. for a parking facility to serve a boat launching ramp.

Individually these actions may not have a significant impact; however, the cumulative effect of thousands of such actions may seriously diminish the coastal resource base. Although the COE is required to review permit actions in light of cumulative impacts, the COE does not have an effective methodology or procedures for accomplishing the task. Neither COE headquarters nor district offices maintain complete records detailing the impacts of permits they issue. Visits to the District offices at Norfolk, Baltimore and New York showed that COE decisionmakers do not have adequate information concerning the cumulative effects on coastal resources of the many permits issued annually. These Districts, however, were actively engaged in developing information systems to assist in analyzing cumulative impacts. In addition the COE's Institute for Water Resources has for some time, been conducting a study of cumulative impact analyses. This study has not been completed and appears to be losing momentum.

Recommendations:

(i) The COE should accelerate its efforts to develop information systems for assessing the cumulative impacts of permitting actions. Such information systems should track the number of acres of coastal resources destroyed, show which shorelines are bulkheaded, and locate groins and other erosion control structures. This information would enhance the COE's ability to evaluate fully the impacts of discrete actions.

(ii) In conjunction with EPA, each district office should be directed to compile an inventory of coastal wetlands and other significant coastal resources within its jurisdiction and prepare annual reports describing

the status of this resource base, including numbers of acres filled and restored.

(iii) The COE should continue its efforts to develop and refine methods and analyses to assess the cumulative effects of permitting activities on significant coastal resources.

e. EPA and the COE need to develop a detailed definition of coastal wetlands to assure the uniform protection of this significant coastal resource.

COE regulations define wetlands only in general terms:

> The term "wetlands" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically accepted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.

The interpretation of this general guidance is left to the individual district offices, 18 of which have jurisdiction over coastal areas. The lack of a detailed national methodology for defining COE jurisdiction over coastal wetlands has resulted in uneven application of Section 404's protective policies to this valuable national resource.

An example of the confusion that can result from application of this general guidance was submitted in public comments on the FCPR. On Folly Island, South Carolina, the COE has declined to take jurisdiction over a proposed project because (according to the COE) the project is not located in a wetland. The proposed project consists of upgrading a dirt road to service a 540 unit condominium development proposed for the rapidly eroding, undeveloped southwest end of Folly Island. The existing road runs between the dunes and a backside marsh and will require fill. Traffic over the dunes has destroyed the vegetation, so wetlands species are not found on the road itself. The road is periodically inundated, however, and pockets of wetlands (high marsh) vegetation grow on either side of the road. After a site visit the COE drew its jurisdictional lines to exclude the area of the proposed project. The Fish and Wildlife Service, also after a site visit, concluded that the jurisdictional line should have included the area of the proposed project. The proposed development, however, appears to have been postponed for economic reasons.

Recommendation:

The COE in conjunction with EPA should develop a detailed national methodology for identifying the areas under its jurisdiction so as to minimize the potential for inconsistent application of coastal protection policies from district to district.

g. The "water dependency" test embodied in the 404 Guidelines should be strengthened to prevent unnecessary filling of wetlands.

The 404 Guidelines provide:

"Discharge of fill material in wetlands shall not be permitted unless the applicant clearly demonstrates the following:

(a) the activity associated with the fill must have direct access or proximity to, or be located in the water resources in order to fulfill its basic purpose, or that other site or construction alternatives are not practicable; and

(b) that the proposed fill and activity associated with it will not cause a permanent unacceptable disruption to the beneficial water quality uses of the affected aquatic ecosystem ... (33 CFR 230.5(b)(8)(ii))"

If a proposed fill does not cause permanent unacceptable damage, the 404 Guidelines thus appear to allow the filling of wetlands to accomodate a water dependent activity solely on the basis that the activity "must be located in the water resources to fulfill its basis purpose." There is no requirement to seek sites that have access to water but are not located in wetlands. There is no requirement to find that the filling of wetlands to accommodate water dependent uses is the only practicable alternative or that there is a need for the activity that necessitates the fill. The policy as stated in the guidelines not only does not protect wetlands but on its face encourages the filling of wetlands to accommodate water dependent uses. The protection offered by the water dependency test is therefore illusory.

Proposed revised 404 Guidelines remedy this deficiency in part, by providing that the "discharge of dredged or fill material does not comply with the Guidelines if there is a practicable alternative to the proposed discharge that is environmentally preferable and will have less adverse impacts on the aquatic ecosystem." The proposed Guidelines further state:

> In the case of discharge of fill material into special aquatic or wetland areas, where the activity associated with the fill does not require access or proximity to or siting within the water resource in question to fulfill its basic purpose, the discharge may be allowed only if, in addition to the other requirements of the Guidelines (alternatives, impacts, mitigation), there is a showing that the activity associated with the fill is necessary.

A comment to the regulations, the legal significance of which is uncertain, explains that:

> This test is intended to prevent the destruction or adverse alteration of wetlands and special aquatic areas by non water dependent activities except in cases where the applicant can show that the basic purpose of the activity is one for which the local community has a demonstrable need. In assessing the basic purpose of an

activity, one must look at the basic service or product it provides. For example, the basic purpose of a housing development located in a wetland site is still housing. Thus, to meet this test, the applicant would have to show a need for housing, per se, not merely a demand for waterfront housing.

However, for water dependent uses there is still no requirement to show a "demonstrable need" for the activity that necessitates the fill.

Recommendation:

(i) The EPA should amend the 404 Guidelines to prohibit the filling of coastal wetlands unless the applicant for a 404 permit can clearly demonstrate:

- the activity associated with the fill is in the public interest.
- the public benefits clearly outweigh the long-term detriment to the wetland that would result from direct, secondary and cumulative impacts.
- any less environmentally damaging alternatives are not practicable.

Any permit that meets the above criteria should be conditioned on the applicant fully mitigating any wetlands losses unless the applicant can clearly show that full mitigation is not practicable.

(ii) The EPA should implement vigorously a program to designate, pursuant to Section 404(c) and 40 CFR 231, areas where all discharges will be prohibited. Such advance designation will increase the likelihood that important wetlands will be protected uniformly by preventing the cumulative impacts of piecemeal development.

h. A jurisdictional disagreement between EPA and the COE over responsibilities for the dumping of solid waste materials in wetlands may impede protection of these coastal resources.

COE regulations define the term "fill material" as

> "any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a waterbody. The term does not include any pollutant discharged into the water primarily to dispose of waste as that activity is regulated under Section 402 of the [Clean Water Act]. (33 CFR 323.1(m))."

The preamble to the COE regulations (42 FR 37130) states:

> "The Corps and the Environmental Protection Agency feel that the initial decision relating to this type of discharge should be through the NPDES program. We have therefore modified our definition of fill material to exclude those pollutants that are discharged into water primarily to dispose of waste. We will process Section 404 permits for these types of activities to the extent that a levee or other type of containment structure must be placed in the water as part of the overall disposal plan. We will not, however, take any final action on the Section 404 permit application until a decision on the NPDES permit has been made."

EPA, however, has never asserted its NPDES permit authority over discharges of solid wastes in wetlands. Its recently published Consolidated Permit Regulations (45 FR 33287-33588, May 19, 1980) modified the definition of fill material for purposes of Section 404 of the Clean Water Act to mean "any 'pollutant' which replaces portions of the 'waters of the United States' with dry land or which changes the bottom elevation of a water body for any purpose." The effect of this definition would be to place jurisdiction over the discharge of solid waste into wetlands with the COE. The COE has been reluctant to accept this added responsibility without additional funding or staff resources.

As a result there appears to be no effective framework for regulating this activity. Whether this regulatory vacuum has encouraged or permitted illegal dumping of solid wastes in coastal wetlands is not known. COE officials reported that efforts are underway in conjunction with EPA to evaluate the magnitude of the problem.

Recommendation:

EPA and COE should be directed to resolve the question of which agency has jurisdiction over solid waste disposal in wetlands as expeditiously as possible.

IV. Federal Agency Comments

The following Federal agencies submitted written comments on the draft of this chapter:

Economic Development Administration

Farmers Home Administration

Federal Highway Administration

U.S. Army Corps of Engineers

U.S. Coast Guard

U.S. Environmental Protection Agency

All comments from agencies, states, interest groups and the public were considered in the final revisions. Significant remaining disagreements with other Federal agencies are reflected in the summaries and excerpts from their comments below. All comments are on file at the Office of Coastal Zone Management and opportunity to review these documents can be arranged.

Economic Development Administration

The final paragraph on page 68 "misrepresents the EDA NEPA directive." "The Council on Environmental Quality (CEQ) and the Environmental Protection Agency (EPA) both reviewed these procedures and supported them. We do not believe that CEQ and EPA would have supported these procedures if they contained virtually no guidance for evaluating projects or their impacts."

"... round three of the Local Public Works Program is not being anticipated by the Congress and, therefore, references to it on pages 72 and 73 should be deleted."

Federal Highway Administration

Page 60, Recommendation d(i). "We feel the recommendation is unnecessary. The Coastal Zone Management plans are the proper vehicles to identify sensitive areas [that] should be protected. The consistency requirements of the Coastal Zone Mangement Act will insure that Federal-aid activities are in accordance with the approved State coastal plan."

U.S. Army Corps of Engineers

"From a general perspective, the most prominent concern of the Corps is the consistently negative characterization attributed to the role of balancing in both the planning and regulatory programs. As stated in our earlier comments, we do not subscribe to the position that resource protection is or should be our primary objective. Rather, the Corps mission is water resources development and conservation for the purpose of solving water and related land resources problems. We believe that this is fully consistent with NEPA."

Page 115, Recommendation(i): "We believe the Coastal Zone Management Act was designed to give the states the primary role in protecting their coastal resources. Federal approval of state CZM plans and certification procedures preclude, in our opinion, the necessity for us to provide any additional standards and criteria for determining when permits for actions that adversely affect coastal resources will be denied. If the state denies the CZM consistency certification, we will deny our permit."

Page 120, Recommendation 2: "Some of the reasons why we do not intend to direct our districts to compile wetland inventories include:

(1) Unsettled state of wetland definition for purposes of Section 404;

(2) Attorney General's opinion that EPA has the responsibility for determining geographic scope of 404;

(3) Status and scope of the Department of Interior's National Wetland Inventory;

(4) Congressional deliberations on the wetland issue."

Page 87. "We do not agree with the discussion of the interest rate. Delete the last two sentences, and replace as follows: the rate of interest presently used is 7 3/8 percent. While this rate is low in nominal terms, it is high in real terms. All economists agree that when inflation is excluded from benefits and costs (as is Corps practice) a real, not a nominal rate, should be used .... As a consequence of unrealistically high discount rates, too few projects are built and those that are built are too small."

U.S. Coast Guard

Page 108 - Paragraph 1. "Paragraph 10b of the DOT Order on Floodplains allows the Coast Guard to adopt it, which has been done. Commandant Notice 16475, dated 24 January 1979, adopted the DOT Order on Wetlands. It should be noted that the provisions of the Wetlands DOT Order are stronger than

E.O. 11990 in that it requires that all new construction in wetlands be avoided. E.O. 11990 does not apply to most Coast Guard bridge permits through the exception given in Section 1.(b). Furthermore, a recent letter from the DOT Deputy Assistant Secretary for Policy and International Affairs to the Acting Director of the Water Resources Council (WRC) took issue with the WRC task force evaluation of the DOT procedures implementing E.O. 11990. He stated that:

> 'In our view, the critique reflects an excessive concentration on detailed and restrictive requirements. This is both unrealistic and undesirable and appears to be based on a lack of understanding of how project planning and federal grant programs operate in practice. We suggest that the comments be reconsidered with a broader view of federal legislative, regulatory, and progam requirements. ... We do not expect to make any changes at this time in our floodplain management procedures, which we believe to be among the best and most comprehensive issued by federal agencies to date.'"

Page 109 - Recommendation (iii). "We are developing rationale and guidelines, but are refraining from compiling a 'laundry list' of projects where a permit would be denied. Specific policies are being prepared to a certain extent, however, an excessive concentration on detailed and restrictive requirements is unwarranted and unrealistic."

Page 109 - Recommendation (iv). "Requiring restrictive and detailed policies for conditioning permits is unwarranted. The Coast Guard presently conditions permits to mitigate wetlands loss, require buffer zones, and to minimize development."

Page 110 - Recommendation (vi). "The Coast Guard does not design bridges: this is outside our statutory requirements."

U.S. Environmental Protection Agency

"Generally, EPA still believes that the overall tone of the report fails to give proper perspective to management in the coastal zone, not only in terms of its analysis of EPA programs but also those of other Federal agencies. EPA agrees that infrastructure development does have an effect on the quality of the coastal zone and is attempting to provide coastal zone protection while carrying out its mandates."

"Coastal Zone Management, however, is only one of several issues that are of concern and sometimes in conflict with Agency mandates. In our previous comments on this chapter we noted several initiatives that are attempting to resolve these conflicts. These include the construction grant and permit conditioning efforts at Cape May, New Jersey, and our work on a

generic EIS for the outer banks of North Carolina. In addition, several of our regions are already following the recommendations concerning Section 10 and 404 permitting that appear in Section III, Part H of your draft report. However, all of these accomplishments have either been ignored or glossed over in the report and all of our past mistakes emphasized."

Pages 35-36. "This discussion gives too much 'credit' to the power of construction grant priority setting, which is itself preceded by state and areawide planning. To do any sort of coastal protection analysis as a part of the Federal role in developing priorities is definitely premature and probably illegal. By statute, the determination of priorities is a State decision. Aside from basic Federal guidance criteria, the States develop individual criteria to prioritize projects. There is nothing to preclude States from including critera relating to coastal protection goals. Second, the priority systems merely select potential projects. A complete analysis of alternatives for siting and design (including a no action alternative) plus full analysis of the environmental impact of alternatives is performed during Step 1 facility planning. The award of a Step 1 grant does not bind EPA to fund Step 2 design grants or Step 3 construction grants."

Chapter III: Access to Federal Lands in the Coastal Zone

Chapter III: Access to Federal Lands in the Coastal Zone

I. Introduction

Ensuring public recreation access to the coast was a specific element of the national coastal policy announced in the President's Environmental Message in 1979. Congress has since included the provision of public access to the coast for recreation purposes in its statement of national coastal management objectives in the amendments to the Coastal Zone Management Act. This chapter of the Federal Coastal Programs Review examines the policies and practices of the Federal Government as a major landholder in the coastal zone to determine whether public recreational access to Federal lands in coastal areas is sufficiently provided.

In 1962, the Report on the Shoreline Recreational Resources of the United States, prepared for the Outdoor Recreation Resources Review Commission, found that only 1,209 miles of United States shoreline -- less than two percent of our total shoreline -- was publicly owned for recreational purposes. In addition, the Study indicated that another 581 miles of publicly-owned coast, to which public access was restricted, was being used for military bases or other governmental purposes. Although the Report did not attempt to enumerate the total Federal holdings in the coastal zone*, the available statistics at the time indicated that greater access to such Federal holdings would improve the amount of national shoreline available for general public recreational use.

Since 1962, public access to the shoreline has improved in the sense that additional coastal territory is now publicly owned. This process has been aided since 1962 through establishment of the Land and Water Conservation Fund in the Department of the Interior which has provided park purchase funds to states, through inauguration of the national wilderness and trail systems, and through major additions to the National Parks. Since 1962, the following national coastal parks have been authorized: Biscayne Monument, Florida; Apostle Islands Lakeshore, Wisconsin; Assateague Seashore, Maryland-Virginia; Canaveral Seashore, Florida; Cape Lookout Seashore, North Carolina; Cumberland Island Seashore, Georgia; Cuyahoga Valley Recreation Area, Ohio; Fire Island Seashore, New York; Gateway Recreation Area, New York-New Jersey; Golden Gate Recreation Area, San Francisco; Gulf Island Seashore, Florida-Mississippi; Indiana Dunes Lakeshore, Indiana; Padre Island Seashore, Texas; Pictured Rocks Lakeshore, Michigan; Point Reyes Seashore, California; and Sleeping Bear Dunes Lakeshore, Michigan.

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*As defined in the Coastal Zone Management Act of 1972, as amended, the "coastal zone" does not include federally-owned lands. For purposes of this Review, this distinction is ignored.

Progress in opening coastal lands to the public has also been made through state coastal zone management and related programs. For example, Oregon has adopted a program to buy accessways every 3 miles along its coast. The California Coastal Commission and many local communities require that private developers provide public access to beaches as a condition for a permit to build on the coast. Approximately 500 access dedications had been made under this program by mid-1980, and efforts are now underway to utilize the dedicated lands. Coastal zone management funds were used in an experimental bus service to a New Jersey beach, which has now been expanded to other locations.

Despite progress over the last two decades, the portion of the Nation's coastline accessible to the public for recreation is still relatively small. At the same time, recreational demand has grown and available coastal property has been developed for strictly private use. For example, areas that were wild and vacant dunes in Ocean City, Maryland, in the early 1960s are now fully developed into condominiums. The Department of the Interior's 1978 National Urban Recreation study found that most of the open space and recreation problems identified in the 1962 Commission Report still existed except that demand had intensified in urban areas.

Almost all coastal property is still privately held, and major access gains require attention to these holdings. However, many federally owned lands are in prime coastal locations. Their availability (even on a limited or temporary basis) would add importantly to the general public's opportunities for coastal recreation. In this era of national emphasis on the conservation of energy, increased recreational opportunity should be provided for U.S. citizens close to the urban areas where most of them live. Accurate, updated shoreline mileage statistics could not be assembled in the time available for this Review. However, the Department of Interior's 1978 Study identified 2 million acres of federally owned land in the Nation's cities, 90 percent of which were administered by the Department of Defense. These holdings were predominantly (though not exclusively) in the coastal zone. An August 1980 poll of the 19 states with federally approved coastal zone management programs, indicates substantial Federal holdings in the areas defined by their programs as "coastal," indicated in the following Table.

FEDERAL LANDS ON THE COAST AS MEASURED BY STATES
WITH APPROVED COASTAL ZONE MANAGEMENT PROGRAMS*

State	# of Federal Properties	Total Acres	Defense Department Acres	Defense Department Percent
Alabama	17	251	66	26
Alaska	-			
American Samoa	7			
California	136	2,717,249	851,535	31
Connecticut	161	882+	506	57
Delaware	14			
Guam	9	44,508	42,686	96
Hawaii	356	409,879	153,379	37
Louisiana	19+	438,809	207,590	47
Maine	37	69,828	8,844	13
Maryland	184			
Massachusetts				
Michigan	231	265,267	1,305+	5+
Mississippi	16			
New Jersey	20			
North Carolina	90	231,367	20,294	9
Northern Marianas	-			
Oregon	35	1,245,612	5,184	.4
Pennsylvania	4	1,945	570	29
Puerto Rico	52			
Rhode Island	19			
South Carolina	49	338,173	41,988	13
Virgin Islands	9	6,987	7	
Washington	-			
Wisconsin	49	571	164	28

*Source: Environmental impact statements prepared in connection with Federal approval of state coastal zone management programs. Details available vary widely from state to state. Some EISs include sites as small as post offices, and others include only major sites (in excess of 100 acres) or Federal lands of particular concern.

This section of the Federal Coastal Program Review discusses opportunities for increasing public access to these federally-owned lands in the coastal zone. It focuses on lands administered by the Department of Defense; the Department of the Interior's National Park Service, and Fish and Wildlife Service, and on the Federal Surplus Real Property Program administered by the General Services Administration.

Opportunities for increased public access also exist at agencies such as the Department of Agriculture's Forest Service, the Department of Transportation's Coast Guard, the Department of the Interior's Bureau of Land Management, and the Federal Energy Regulatory Commission. In general they are significantly less than those available under the programs discussed below, primarily because the aggregate amounts of land these agencies hold in the coastal zone are significantly less.

II. General Recommendations

Specific recommendations with respect to improvements in the administration of each of the programs examined are set forth below, after program descriptions and analyses of opportunities and constraints for improving access. In general, two additional points stand out that apply to all of the programs analyzed below -- the lack of explicit assessments of the potential of Federal lands in the coastal zone for public recreation, and the importance of improving mass transportation to properties that are open to the public. The following paragraphs briefly address these two issues.

First, most state coastal zone management agencies do not have satisfactory information regarding Federal lands in the coastal area and the recreational potential of those lands. Federal lands are excluded by the Coastal Zone Management Act from coverage by state coastal management programs, and state emphasis on recreational access has been focused on the larger opportunity presented by privately held coastal lands; especially those being developed and requiring governmental permits. Without coastal recreational inventories, state agencies have not been able to address directly or effectively the problem of working with the various Federal agencies owning such properties, to improve access for the public. Work at this level is essential if such recreational opportunities are to be improved. Appropriate information is available from Federal agencies but must be assembled in useful form. Accordingly, the Department of the Interior's Heritage Conservation and Recreation Service should be directed, in cooperation with the National Oceanic and Atmospheric Administration, other Federal agencies, and state and local coastal zone management agencies, to prepare a comprehensive inventory on such sites with a priority listing of properties that can and should be opened to the public further.

Second, lack of adequate mass transportation is a major factor inhibiting greater public access to available recreational facilities, particular in areas close to large urban centers. A number of experimental programs to promote nonautomobile recreation access within the coastal zone are currently being conducted. The Department of Transportation's Urban Mass Transportation Administration (UMTA) is funding demonstration projects in Santa Cruz and Hermosa Beach, California, for free shuttle bus systems from outlying parking areas. UMTA is also planning the purchase of a high speed ferry for weekend runs from New York City to segments of the National Park Service's Gateway National Recreational Area. In addition, under the National Park System Access Act of 1978, the Park Service is conducting a 3 year pilot program which includes 20 different projects, ranging from extended bus routes to the Golden Gate National Recreational Area from San Francisco to increased train use at the Indiana Dunes National Sheashore. Partial funding for the experiment was available in fiscal year 1979, but no additional funds have been obtained to continue it in either fiscal year 1980 or 1981.

The lessons from these pilot programs will be essential in determining the feasibility of future similar projects. The interdepartmental task force recommended to consider transportation issues should be directed to monitor the results of these experimental programs and other efforts to

expand nonauto access to coastal sites. Upon completion of these studies the committee should make appropriate recommendations to the Secretaries of the Interior, Commerce, and Transportation, and to the Council on Environmental Quality, about future application, expansion or redirection of similar programs.

III. Specific Program Recommendations

The following portions of this section of the Review describe and discuss the general access programs of the Department of Defense, the National Park Service, and the Fish and Wildlife Service, as well as the General Service Administration's Federal Surplus Real Property Program.

A. Department of Defense

The Department of Defense has extensive land holdings in the United States -- over 26 million acres, according to a 1978 Department of the Interior survey. This land is primarily in remote, undeveloped areas. However, according to Interior's 1978 National Urban Recreation Study, 90 percent of the 2 million acres of Federal land in the 17 metropolitan areas surveyed was held by components of Defense. Of these urban lands, 39 percent was held by the Army, 22 percent by the Army Corps of Engineers, 22 percent by the Navy, and 17 percent by the Air Force.

A number of these Defense holdings are in coastal areas. While no definitive survey of Defense Department coastal properties exists, the compilations by selected state coastal zone management offices give some indication of Defense holdings. For example, 31 percent of the 1.7 million acres of Federal land recorded along California's coast belong to units of the Defense Department. Maine's coastal zone program reported 13 percent of the 69,000 Federal acres on its coast to be Defense properties, North Carolina 9 percent of its 231,367 Federal acres, and South Carolina 12.5 percent of its 338,173 Federal acres. Because of the nature of its mission, the Navy has more of its major installations along the coast than the other services.

Many of these Defense Department properties are located in areas of the coast that could provide substantial public recreational benefits -- such as Governor's Island in New York harbor, the Presidio at the San Francisco end of the Golden Gate bridge, and the beaches of Fort Story, Virginia, and Camp Pendleton, California.

The availability of such properties for recreation use has to be secondary to their principal Department of Defense purpose -- the security of the country -- as long as they remain under its jurisdiction. In the past, recreational use of Defense lands has been made possible through a variety of methods, ranging from declaring properties surplus and turning them over to communities or private developers, to accommodating the public, with restrictions, on properties still very much actively used for defense purposes. At Fort Story, Virginia an Army transportation installation for amphibious training, including 6 miles of ocean beach, is located to the north of the city of Virginia Beach. Under an agreement with the city, 885 feet of the beach are open to the public on summer weekends for swimming, subject to closing for training exercises. The city has provided a parking lot and other maintenance facilities, About 20,000 people a year are accommodated at this Army beach. Since 1973, when the Navy fleet was relocated from Newport, Rhode Island, a number of Navy parcels have become available for recreational uses. Fort Adams, in the city of Newport,

has been made a state recreation facility; and on an island adjoining the city, the state's economic development agency has acquired former Navy lands which are now leased as a marina.

Service representatives report a gradual, growing trend toward more public use of military bases and other Defense installations for varied purposes, including indoor or outdoor recreation. Statistics on public visitation are kept, if at all, at each base, and aggregate figures are not available. The Navy base in Norfolk, Virginia estimates its public visits last year at 250,000, principally on weekend "open houses" and commercial tours rather than active public recreation. The base public affairs office believes the trend is toward greater numbers of public visits but does not maintain exact visitation statistics.

In general, access to Army, Navy, and Air Force bases for general recreational use is sharply restricted. Navy officials cite the following reasons for the Navy's basic policies, which prohibit unrestricted public access but do provide for controlled visits and limited recreational use:

- Security -- Areas on some bases contain classified or operationally critical equipment that should be protected from general public access.

- Property protection -- The Department is concerned about anti-government activities and carelessness. It is concerned about the inadvertent damage that children or others unfamiliar with the rules of a Navy post, might cause. For example, an object thrown near a jet aircraft or its runway or taxiway could cause the loss of its engine. Base security and protection are cited as the dominant concerns in restricting public access.

- Safety -- Navy bases may contain live ammunition, operating ships and aircraft, heavy equipment or major industrial facilities that pose dangers to those unfamiliar with the area.

- Liability -- Use of base facilities by the public can lead to liability for injuries or deaths occurring on the premises.

- Cost -- Policing and cleanup of base areas after public visits can be expensive. Even when agreements are made with public groups to clean up after themselves, they are not always carried out.

- Morale -- Base commanders feel that limiting use of available recreational facilities to base personnel will assist in maintaining unit moral.

The process of balancing these against the needs and opportunities for public access to coastal areas is difficult and complex. The statutory framework for this process curently is focused largely around the provisions of Public Law 86-797, known as the Sikes Act after its sponsor, former Congressman Robert L. F. Sikes of Florida.

The Sikes Act was enacted in 1960 to promote hunting and wildlife, fish and game conservation on military bases. The Act was amended in 1968 to include promotion of outdoor recreation on military lands. It was further expanded in 1974 to include wildlife and recreation programs on lands under the jurisdiction of the Department of Agriculture's Forest Service and the Department of the Interior's Bureau of Land Management.

The Sikes Act calls for Defense bases to enter into cooperative agreements for wildlife conservation and outdoor recreation with appropriate state government agencies and, either the Department of the Interior's Heritage Conservation and Recreation Service (HCRS) or its Fish and Wildlife Service. Since passage of the Sikes Act, fees collected for fishing and hunting at Defense bases have been used to support fish and wildlife enhancement activities. However, no funds were appropriated under the Sikes Act until fiscal year 1979, when $1.5 million was made available for Defense activities. The first funds appropriated directly for Sikes Act fish and wildlife activities in the Fish and Wildlife Service became available in fiscal year 1980, in the amount of $301,000. HCRS has never received direct appropriations for its Sikes Act activities, and is supporting them through general administrative funds. In fiscal year 1980, $271,900 was made available for such purposes. Current authorizations for activities under the Act through fiscal year 1981 are at the levels of up to $1.5 million per year for the Defense Department and up to $3 million per year for Interior.

The general public recreation aspects of the Act are currently administered pursuant to a Memorandum of Understanding signed on April 1, 1978, by the Departments of Defense and the Interior. The Memorandum sets forth the manner in which the Department of Defense, "consistent with its primary military mission," with the assistance of the Heritage Conservation and Recreation Service, as well as state recreation agencies, is to manage public outdoor recreation resources on military bases. The Memorandum provides that Interior will assist base commanders in the preparation of outdoor recreation plans; that individual bases will encourage access wherever possible for non-consumptive outdoor recreation, but that the cooperative agreements entered into for each base will not include use of recreation facilities "normally associated with urban development such as playgrounds, golf courses, athletic fields/courts, swimming pools, trailer camps and marinas" which are covered by other Defense Department directives.

In November 1978, the Department of Defense adopted a directive with respect to natural resources conservation and management to implement the Memorandum. The directive prescribes Department policies ... "for multiple use management of the renewable natural resources of Defense lands, consistent with military missions ...." It indicates that "All DOD installations shall be managed so as to ... provide for the optimum development of land and water areas and access thereto ...." It states that, "Outdoor recreation and natural beauty and the protection and enhancement of environmental quality will be recognized as important objectives of all DOD natural resource management programs." The directive, therefore, provides that "public access to DOD installations for the purpose of hunting and fishing and other natural resource enjoyment will be encouraged except where a specific finding has been made that the overriding military mission requires a temporary or permanent suspension of such use."

The directive does not explicitly define the kinds of recreation that will be acceptable. Prior to 1968, when the Sikes Act covered only hunting and fish and wildlife conservation, the focus had been on habitat protection, fish pond development and stocking, protection of endangered species, and similar wildlife activity. The directive broadens this focus to include "non-consumptive uses by the public, such as hiking or nature trails, ocean swimming, etc." The kinds of recreation activities generally contemplated by the directive are those involving nature trails, camping in remote locations and similar outdoor activities. The directive also indicates that access is to be controlled and held within manageable quotas, which will vary depending on the amount of suitable land and water areas and the population of fish and wildlife.

Responsibility for administering the provisions of the DOD Directive on Natural Resources is assigned to the Assistant Secretary of Defense for Manpower, Reserve Affairs and Logistics, with assistance from an interservice Defense Natural Resources Group. The Group is an ad hoc body with a variety of natural resource management and technical support responsibilities called together infrequently to work with HCRS on specific issues such as provision of trails on Defense installations.

Effective responsibility for implementing the Directive rests with each base commander who has considerable discretion in assessing the implications of the military requirements of the base mission for recreation and access. Each of the service branches has regulations and other guidance for commanders on questions of recreation for base personnel and the public, on natural resource questions, and on matters such as community relations and base facility permits. The cooperative agreements executed by the various services have emphasized fish and wildlife projects, in part because that requirement is the longer standing and they have greater experience with it. To date, 222 base agreements with the Fish and Wildlife Service and counterpart state organizations have been reached -- 99 by the Army, 63 by the Navy and Marine Corps, and 60 by the Air Force. By contrast, only 57 cooperative agreements for general public outdoor recreation have been reached -- 54 by the Air Force, and 3 by the Army. The Navy met with HCRS officials in July 1980, to begin the process by which cooperative agreements on recreation are reached.

The Army's policy on natural resource management and outdoor recreation is set forth in regulation 420-74, dated July 1, 1977 (and incorporated by explicit reference in a January 1979 document updating all Army recreation and morale support functions). The segment dealing with access leaves considerable room for a base commander to decide what is appropriate. It provides that "Installation commanders will provide for controlled public access at Department of Army installations and facilities containing land and water areas suitable for recreation use and enjoyment of the public. Such access will be within manageable quotas, subject to safety requirements and military security, and at such times as such access can be granted without bona fide impairment of the military mission as determined by the installation commander. Opportunities for recreational use by the public of military lands and waters must be equitably distributed by impartial selection devices, such as a system based on drawings or lots, or the principle of first come, first served."

The Army's regulation states that when access is withheld, the reasons must be substantiated by a statement incorporated into the base's cooperative agreement with HCRS or the Fish and Wildlife Service. The model agreement with HCRS for general outdoor recreation provided by the Army to its base commanders states that the base is open to the public for the outdoor recreation resources that might be available, subject only to safety and security requirements. However, another explicit limitation on public recreation use is set forth in Army regulation 28-1, dated January 1, 1979, which indicates that in addition to security and safety factors, access should not "impair the military mission or the recreational use by military community members." Regulation 28-1, which deals with base morale activities, also prescribes the priorities of users. The general public is the 15th and last priority, coming after foreign military personnel, Coast Guard Academy cadets, surgeons under contract with the Army, and Defense Department civilians.

Of the funds appropriated to the Defense Department in 1979 under the Sikes Act, the Army received $900,000. It allocated $130,000 for large recreation projects such as nature centers and nature trails, and $570,00 to 50 fish and wildlife projects. The Army's execution of cooperative agreements on outdoor recreation has been delayed in part because of delays in the issuance of a technical manual on "Natural Resources -- Outdoor Recreation and Cultural Values". Due in 1979 and referred to in the Army's September 1978 instruction to base commanders, the document is still in preparation.

The Air Force has emphasized provision of general outdoor recreation opportunities at its bases. The Air Force's 54 recreation cooperative agreements cover 41 percent of its installations. Air Force projects include such recreation activities as model airplane flying at Fairchild Air Force Base in the State of Washington and a boat dock and snowmobile trail installation at Selfridge Air National Guard Base in Michigan. However, these bases are not in coastal areas.

The Navy issued a revised directive on Natural, Cultural and Historic Resources on May 28, 1980, that includes a subsection providing generalized guidance that "outdoor recreation shall maximize public access opportunities consistent with military mission and public safety and welfare."

The Navy's general approach has been summarized in an informal statement as follows:

"Navy and Marine Corps facilities and installations have a history of close cooperation with local governments and agencies in making beaches and waterfront property accessible to the public for purposes of recreation. When compatible with both the public and military interests, such access is normally arranged through written realty agreements which establish the necessary responsibilities. Public agencies are generally made responsible for the cleanliness and maintenance of areas and for law enforcement."

"State implementation of the Coastal Zone Management Act has resulted in new and more aggressive requests for public access to Navy controlled beaches and waterfront property. Some of these requests have been appropriate and accommodations have been made. Many of the requests, particularly in California, have been inappropriate because allowing public access would result in interference with station operations, violation of station security requirements, or public access to explosive hazards within established Explosive Safety Quantity Distance arcs. Federal policy, while supporting feasible cooperative use of Navy waterfront property for recreation, historic resource preservation and wildlife study, must carefully mandate to the Department of Defense the authority to prohibit public access to waterfront property where public access would inhibit the military mission and security, or violate established safety criteria."

The Navy has placed an almost exclusive emphasis on fish and wildlife agreements rather than general recreational agreements. The $200,000 available to the Navy from fiscal year 1979 Sikes Act appropriations was used to sponsor 64 fish and wildlife projects, including such items as planting and maintaining wildlife food plots, pond maintenance and construction, and waterfowl habitat improvement. All of these projects improve opportunities for outdoor recreation as well. The complete list of projects is attached as Appendix A.

A case in San Diego illustrates the Navy's attempt to accommodate the public and some of the difficulties in public perception involved. A beach area in San Diego held by the Navy, at a base which serves jet fighters, adjoins a city beach. The Navy agreed to move its fence up the beach by several hundred yards. The Navy says it is unable to move the fence farther because an ammunition storage area and airfield operating areas are nearby. Navy personnel and their children continue to use the Navy beach adjoining the general public area. When asked why its personnel can use the restricted beach while the public cannot, the Navy responds that it can exercise a degree of control over its personnel to prevent them from getting too close to the ammunition or airfield areas that it cannot exercise over the general public. The Navy also points out that its personnel have a greater awareness of the existence and dangers of the operating and ammunition areas.

The following visitation figures from some Navy and Marine Corps bases are not meant to show "typical" base use, but rather to show what the Navy means when it says its facilities are becoming more open to the public:

- At the Parris Island, South Carolina, marine training facility, (which contains a historic monument as well as nature trails) the base had been visited in spring 1980 by 263 school groups and 44 scout troops.

- The Marine Air Base in Cherry Point, North Carolina, was visited during 1979 by 35 persons for hunting, by 44 persons for fishing, and by 200 persons for the use of the nature trail.

- At Camp Pendleton, California, beach use is allowed on the following basis: 1,000 families, chosen by lottery, are permitted unlimited use of the beach for a $10 charge per 6-month period as long as the beach is not closed because of military use. In addition, 1,474 military families used the beach in 1979.

- At the Whidbey Island, Washington Air Station, the following visits were recorded in 1979: 199 persons for hunting, 3,600 persons for fishing, and 8,200 persons for other outdoor recreation.

- The Bangor, Washington, Polaris submarine base recorded the following visits in 1979: 70 persons for hunting, and 7,916 persons for fishing.

- The Naval Weapons Station at Seal Beach, California, which contains a national wildlife refuge, reported the following visits in 1979: fishing, 600; other outdoor recreation, 2,400.

As indicated above, responsibility for working with the Defense Department in carrying out the Sikes Act is divided within the Department of the Interior between HCRS for general outdoor recreation and the Fish and Wildlife Service for fish and wildlife-related activity. Within HCRS, responsibility is assigned to the Division of Federal Land Planning within the Office of Natural Programs. In fiscal year 1979 the Program had the equivalent of eight persons and a budget of $271,900 for Sikes Act activities. Within the Fish and Wildlife Service, up to 50 personnel are involved in providing technical assistance and biological advice to military bases as part of their duties, supported by a budget of $310,000.

Recommendations:

Public access to coastal lands held by the Department of Defense can be improved by implementation of the following recommendations:

a. The Department of Defense should be required to submit an annual report to the President on the utilization of military bases and other Defense properties in coastal areas by members of the public for recreation. The report should include simple breakdowns between fish and wildlife activity and general recreation activity, and between use by military employees and dependents and the general public. It should indicate whether uses are on a continuing basis or only on specific days such as Armed Forces Day. And it should detail and explain the changes in all statistics from the preceding year.

b. The Departments of Defense and the Interior should be instructed to give higher priority to the establishment of cooperative agreements for general recreation on military lands in coastal areas. In particular, the Army should be instructed to complete promptly its guidance document for post commanders on which cooperative recreation agreements are to be based.

The Navy should be instructed to place greater emphasis on meeting general public recreational needs rather than more specialized needs for fishing and hunting, and should ensure that its directives to post commanders include a requirement that specific attention be given in base master plans to public recreational needs. Both guidance documents should provide base commanders with examples and detail about the balancing of recreational opportunities with security and other legitimate objectives.

c. OCZM, in cooperation with the Department of Defense and HCRS, should prepare a technical assistance document for use by state and local officials and citizen groups, explaining the recreational potential of Defense Department coastal properties and the cooperative arrangements with HCRS and the military services to increase public access to those properties. This document should also cover the opportunities presented by GSA's Federal Surplus Real Property Program.

B. The National Park Service, Department of the Interior

The National Park Service administers 67 major installations in coastal areas, including national seashore and lakeshore parks, historic sites and urban recreation areas. These installations range in size from affiliated historic sites such as the Touro Synagogue in Newport, Rhode Island, which covers less than a quarter of an acre, to large facilities such as the Padre Island National Seashore in Texas, which covers 133,918 acres and stretches for 80 miles along the Gulf of Mexico coast.

In some cases the number of visitors to these coastal installations outstrips that of all but the most heavily used noncoastal national parks. Sample visitation figures for some coastal parks during the past 3 years were as follows:

	1977	1978	1979
Acadia National Park Bar Harbor, Maine	3,201,300	3,130,100	3,183,300
Cape Cod National Seashore So. Wellfleet, Massachusetts	5,348,800	5,025,900	3,947,400
Cumberland Island National Seashore St. Marys, Georgia	25,200	36,400	35,800
Gateway National Recreation Area Brooklyn, New York	9,221,500	9,017,500	9,095,600
Golden Gate National Recreation Area San Francisco, California	6,300,200	8,960,900	11,321,100
Indiana Dunes National Lakeshore Chesterton, Indiana	570,100	1,031,300	2,016,800

The most heavily used Park Service facility in 1979 was the Blue Ridge Parkway in Virginia and North Carolina, which had nearly 15 million visitors. By contrast, Yellowstone National Park had 1,895,200 visitors in 1979.

The basic philosophy of the Park Service as set forth in the National Park Service Organic Act of 1916, is to allow public use of its properties "in a manner that leaves cultural, natural and scenic resources unimpaired for the enjoyment of future generations." Its basic mission requires the balancing of public use with the needs of resource protection and management.

Within the constraints of the legislation establishing this basic philosophy, the Park Service's objective is to provide reasonable access within the parks by various means -- primarily automobiles, but also public transportation walkways, bikeways, boat, aircraft, and other means. The means of access are considered part of the management tools for each park, set forth in the "Statement for Management" and the "General Management

Plan" for the park. The Management Statement documents the legislative purpose and defines the appropriate objectives for management of a park. The General Management Plan is developed to achieve these stated objectives. It establishes use zones based on estimated carrying capacity of the resource and impact analyses, and includes plans to guide resource management, interpretation, visitor use, historic preservation and development programs.

Management of the Golden Gate National Recreation Area in San Francisco, established by Congress in 1972, is one of the Service's most difficult challenges. Components of the park are located near the heart of the City. Five million persons live near the park, some portions of which are easily damaged and other portions of which are naturally wild. A variety of public access methods are available. One of the City's cable car lines terminates near the innermost portion of the park, next to tourist attractions at Fisherman's Wharf and Ghirardelli Square. Walkways along the San Francisco waterfront between Fisherman's Wharf and the Golden Gate Bridge provide easy access for bikers and walkers. Weekend bus service to outlying portions of the park, across the bay in Marin County from San Francisco, supplement the regular commuter bus service. Other portions of the park are accessible by ferry from San Francisco to Sausalito.

A principal issue for the Park Service in meeting demands for access is the appropriate balance between the recreational demands of a public having increased leisure time and the need to preserve the integrity of the area involved. Extensive overuse can destroy the very values that access seeks to make available. For example, the Land's End area of the Golden Gate National Recreation Area suffers from overuse. Trail erosion and destruction of ground cover on the rocky slopes facing the Pacific have resulted.

One of the best known cases of the problem posed by excessive use has occurred in the Great Smoky Mountain National Park in Tennessee and North Carolina. The 517,000-acre forest, a major wilderness area near several major population centers, is the most visited national park. Camping site and trail damage led the Park Service to institute a camping reservation system in 1974. Enforcement began in 1978, and the Service reports the system is working smoothly now as people become accustomed to the idea, and the demand has lessened due to uncertain gasoline supplies. Prior to the reservation system, shelters on the Appalachian Trail in the Great Smoky Park designed for 12 persons would commonly have 100 or more persons camping nearby. Damage to the resource included trail erosion, fires and excessive firewood cutting. Widespread horse riding also can damage trails and lead to washouts. The highway congestion experienced during summer months still prevails. A possible shuttle bus system in Gatlinburg, Tennessee, is under discussion.

Since the 1960s, the Park Service's emphasis has shifted toward greater public usage, a shift reflected in the greater emphasis on facilities in non-Western portions of the country, frequently near population centers and often on the coast. However, controversy has attended the Park Service's efforts to balance public demands for recreation with resource protection interests. For example, at the Indiana Dunes Lakeshore near Gary and South Bend, Indiana, and Chicago, Illinois, demand is growing rapidly and

parking facilities fill early. Visitation had doubled in each of the past 4 years, and on the Fourth of July holiday weekend in 1980, the parking lots were full at 10:30 a.m. each day. The problem of access is complicated by the fact that demand for such facilities is highly seasonal. Facilities built for peak demand would be unused for most of the year. The only available public transportation alternative is the Southshore Railroad. The roundtrip fare from Chicago for those who do not have automobile transportation is $5.00 per person and the train equipment is old. As a consequence, train use to the park is limited. In the face of increasing criticism that park facilities are inadequate and that some beach areas should be used for additional parking facilities, park officials are hoping that ticket subsidies and new trains will help meet the need for non-automobile transportation, especially among inner city residents.

Some citizens find that the Park Service is overly conservative in striking the balance between access and preservation. For example, the 1970 General Management Plan for the Cape Cod National Seashore projected 8.5 million visits by 1977. By 1979, however, visits totalled only 3.9 million. Critics believe that visits are low because parking is deliberately kept low and because the Park Service does not encourage better public transportation. The Plan notes the desirability of providing satellite parking facilities and shuttle buses, but in the face of narrow roads and community resistance, they have not been provided. At Cape Cod, the Park Service maintains about 1,000 parking spaces. Town parking lots within the Seashore add double this amount. Public bus service from Hyannis to Provincetown is only six trips daily on weekends, and provides minimal access to the seashore. The capacity of the parking lots thus effectively 140 sets the limit on use of the Seashore beaches.

To the critics who think it is too conservative in providing parking, the Park Service points out that while its own lots may fill with cars early on summer weekends, all of the various public and private lots serving Cape Cod fill up on only two weekends during the summer. Service officials also point out that before the establishment of Cape Cod Seashore, town beaches within the Seashore boundaries were restricted to residents only, which meant that the few other truly public beaches on the Cape were crowded. Most town beaches within the Seashore are now open.

The appropriateness of the Park Service's access/protection balance is particularly an issue at locations near major population centers. The Congress and the Park Service have in recent years, made pioneering efforts to address city needs through national recreation area installations at New York, San Francisco, Cleveland, Los Angeles, and Atlanta. For example, while the Golden Gate National Recreation Area is accessible generally, the Gateway area around New York is not situated as close to population concentrations. The Gateway park consists of four units -- Sandy Hook in New Jersey, on Staten Island and two adjoining sections of Long Island, at Jamaica Bay and at Breezy Point. The Jamaica Bay Wildlife Refuge is the only portion served by direct mass transit. Public transportation to other units is unsatisfactory on weekends when recreation use is highest, and involves multiple transfers and long travel times.

On the other hand, some critics of the Park Service feel that the level of development it has permitted is excessive, particularly on coastal barrier islands. Many environmental groups contend that only minimal facilities should be provided by the Park Service at installations such as Sandy Hook, New Jersey, and resist efforts to install roads and activity centers, on the grounds that such construction could easily be washed away in a major storm.

The Park Service's judgments about public access are complicated by the lack of generally accepted methodologies for determining the usage capacity of park areas, for judging what type of recreation experience is appropriate and for determining what facilities should be made available where use is strictly seasonal. The master plan for the Cape Cod National Seashore, notes that objective standards did not exist to determine the ideal use capacity of that facility either when the master plan was prepared in 1960 or when it was updated in 1970. The 1970 master plan notes that "The Seashore's facility capacity is determined by first deciding what facilities for visitor use can be provided which in themselves would not damage the natural resources and then determining the design load of those facilities."

The basic planning material used by the Park Service is contained in a document entitled, "Optimum Recreation Carrying Capacity," published for the Heritage Conservation and Recreation Service in 1977. It establishes standards and methodologies for use, such as 10 feet of separation between bathers on a beach and 24 feet between sunbathers' blankets. Park Service planners in the Denver regional office, where park unit planning is centralized, state that two basic judgments have to be made for each park. One is the capacity of the resource itself, for which recreation standards such as those discussed above exist but have to be fitted to the particular installation. The second, and an even more subjective judgment, is the type of experience to be made available. If it is a hiking trail, is the standard to be a 5-minute separation between hikers? And if so, how can speeds be governed so that people on the trail do not bunch up together? If it is a visitor center, should a historic document be replicated in actual size, which may mean a handful of people could read it every 5 minutes, or presented, blown up, so that 100 people could read it in 2 minutes? Controversy understandably exists within and outside the Service over the appropriateness of this 1977 document and over general per capita recreation standards.

Recommendations:

Public access to coastal lands held by the National Park Service can be improved by implementation of the following recommendations:

a. Park Service judgments about the balance between public access and resource protection are complicated by the lack of generally accepted methodologies for determining use capacity and the kinds and appropriateness of facilities that need to be made available. As discussed below, similar issues exist in the Department of the Interior's Fish and Wildlife Service. The Department of the Interior should undertake an anaysis of the methods

currently used by these entities to establish capacity limitations of their facilities, to determine whether these limitations can be modified to serve the President's objective of providing for additional public recreational needs without resource damage.

b. As indicated in the general recommendations set forth at the start of this section, this and earlier reviews have indicated that the lack of adequate mass transportation is a major factor inhibiting public access to available recreational facilities, particularly in areas close to large urban centers. To ensure that the Departments of Transportation and the Interior place a high priority on this problem, a joint task force should be established to review the requirements for improving access to parks in urban coastal areas, to evaluate the effectiveness and costs of demonstration programs, and to recommend possible solutions to the Secretaries of Transportation and the Interior and to the Council on Environmental Quality.

C. Fish and Wildlife Service, Department of the Interior

The Fish and Wildlife Service administers the National Wildlife Refuge System which, as of September 30, 1978, consisted of 390 national wildlife refuges in 131 counties around the country, covering a total area of 34.2 million acres. Of these, 43 refuges covering a total of 3.6 million acres are in whole, or in part, located in coastal counties, and include nearly 180 miles of beach. Thirty one of the refuges, covering 388,582 acres, are, in part, located on Atlantic or Gulf Coast barrier islands in 12 of the 18 states from Maine to Texas.

The Fish and Wildlife Service anticipates acquisition of at least two more coastal refuges in the next several years in Alabama and North Carolina, containing a total of about 44,000 acres and 14 miles of beach. A number of other coastal acquisitions are also currently being studied.

In fiscal year 1979, 25.2 million people visited units of the National Wildlife Refuge System. Of these visits, 38 percent were for hunting and fishing purposes, 30 percent were for other "consumptive wildlife recreation" activitives such as shell collecting, 25 percent were for nonwildlife oriented recreation such as swimming, and 6 percent were for education. Aggregate statistics are not broken out for the refuges in coastal areas, which may have significantly higher percentages of nonwildlife oriented recreation use because of the availability of beaches or other attractions.

Some of the Service's largest, best known and heavily used refuges -- such as those at Seal Beach, California; Oyster Bay, New York; and Fox River, Wisconsin -- are in coastal areas. One of the busiest refuges, for example, is at Chincoteague, Virginia. Occupying the southern tip of an Atlantic barrier beach, the refuge contains 9,000 acres. It is served by a single road that leads to a 900-car parking lot. The refuge contains a wildlife drive for visitors as well as an information center and lighthouse. During the summer, the staff estimates that about 90 percent of the visitors primarily visit the beach. A large percentage of these visitors take advantage of the wildlife sights while there. Visitation is limited not only by the parking lot capacity, but also by the refuge's distance from the nearest large community -- a 50-mile drive from Ocean City, Maryland -- and the lack of facilities in the town of Chincoteague. Nonetheless, during fiscal year 1979, Chincoteague Refuge had 1.4 million visitors. They used the facility in the following proportions: non-wildlife recreation (such as swimming), 35 percent; non-consumptive recreation (such as photography), 28 percent; consumptive wildlife recreation (such as shell collecting), 16 percent; education, 14 percent; and hunting and fishing, 7 percent.

The mission of the National Wildlife Refuge System as established by the Fish and Wildlife Act of 1956 is to "provide and manage a national network of lands and water sufficient in size, diversity and location to meet society's needs for areas where the widest spectrum of benefits associated with wildlife and wildlands is enhanced and made available." Recreational uses of the System are constrained by the Recreational Use of Conservation Areas Act, which directs that the Secretary of the Interior administer the Refuges for public recreation as an incidental or secondary

use. Recreation is permitted by this Act only to the extent that it is practicable and consistent with the primary objectives for which each particular refuge was established. In addition, any form of recreation that is not directly related to the primary purpose and functions of the area cannot be permitted until the Secretary of the Interior has determined that the recreational use will not interfere with the primary purpose and that funds are available for its development, operation and maintenance. Beach access is also restricted on units of the System by Executive Order 11644 on Off-Road Vehicles, which requires Federal agencies, holding property, to develop procedures that will control off-road vehicles to protect natural resources.

In practice, the statutory and executive order framework means that conservation and resource protection receive first priority in units of the Fish and Wildlife Service. Service policy on public recreational use is that Refuges are established for wildlife and their habitats, that use by people should not be detrimental to this fundamental purpose and that any such use must be in strict conformance with not only the Federal statutes, but also within the limits necessary for the well-being of refuge resources.

Service officials indicate that in 1972 a conscious effort began to reduce and eventually eliminate nonwildlife oriented recreational use of refuges. In a July 12, 1972 memorandum from the Chief of the Service's Division of Wildlife Refuges, branch chiefs of the Service were advised that "It is the intent of this policy to move toward total elimination of non-program oriented public use of all national wildlife refuges....[I]t is our aim to provide only those public use activities that relate directly to the basic purposes for which the National Wildlife Refuge System was established." The "non-program" uses to be deemphasized are activities such as swimming, boating, camping, and picnicing. The "program-oriented" uses to be encouraged include education centers and visits that expose the public to the area's wildlife values.

This policy is being carried out today at the Parker River, Massachusetts Refuge by reducing the parking capacity of the refuge (from 750 spaces to 300), by restricting some beach parking to use for bird watching only, by no longer providing lifeguards, trash barrels or picnic tables and by giving preference to people using the interpretive trails or other wildlife features. Because of the attractiveness of the area for relative solitude, free of charge, the refuge is still used half the time for sunbathing or other non-wildlife recreation.

Many of the refuges are, by their very nature, in locations that are not accessible to city residents, especially those without cars. As is the case with other Federal lands, public transportation to these refuges is inadequate. An example is the Great Swamp Refuge in New Jersey, near Summit, about 1 hour by car from Manhattan. The nearest train station to the Refuge is a mile and a half away. Parking is provided for a total of only 70 cars. No telephone is provided to call a cab. Group visits, which must be arranged in advance, are limited to 40 persons.

Even where public transportation exists, it may be used very little by visitors. An example is the Tinicum Refuge in Philadelphia, a portion of the 11,000 acres of which, actually lies inside the city. A tip of the refuge is two blocks from a bus line and one mile from the airport. While refuge officials have not made a formal survey, their impression is that not many visitors use the bus, becaus of poor scheduling, safety concerns and a lack of knowledge about the service. A proposal to construct a rapid transit station near the refuge is now under study.

Some find the Service's efforts to contain traffic on "wildlife drives" or similar roadways to be unduly confining as well. Access to the Blackwater Refuge in Maryland, for example, is limited to such roadways, which are so narrow that walking is not allowed. Only 25 percent of the refuge is accessible to the public. On the other hand, the Service aims to contain visitation and to preclude public access to nesting and other fragile areas.

In some cases, refuges in urban environments are not sufficiently accessible to the public even within the constraints of reasonable resource protection. The Department of the Interior's 1978 National Urban Recreational Study concluded that fish and wildlife areas in urban locations were underused for compatible recreation activity. For example, the relatively new San Francisco Bay Refuge is located 2 miles from Fremont, California, a city linked by the Bay Area Rapid Transit (BART) System to San Francisco and Oakland. The refuge, which was authorized in 1972, had only 661 visitors in 1979. The consultants who prepared the master plan for the refuge recommended a shuttle bus from the BART station at Fremont to an educational center at the Refuge. Because of the Refuge's newness and relative lack of facilities, the bus system has never been provided.

The Department of the Interior Study stated that urban refuges such as this are underused because of the Service's interpretation of its mission, lack of adequate public facilities, and inadequate funds and personnel to accommodate increasing numbers of visitors. Service officials acknowledge that although a number of refuges lie in the shadows of major metropolitan areas, only in the past 5 years or so have efforts begun to serve the large populations nearby. Education centers and walks or drives permitting controlled access are the methods preferred by the Service to accommodate urban visits.

Recommendations:

Public access to coastal lands held by the Fish and Wildlife Service can be improved by implementation of the following recommendations:

a. The Department of the Interior should reassess the Service's 1972 decision to eventually curtail nonwildlife recreational uses at Service refuges. The assessment should include an analysis of the availability of other public recreational opportunities in the area of each Refuge to determine if such an exclusion is justified, as well as an examination of the benefits of relaxing the curtailment in achieving wildlife educational goals.

b. As in the National Park Service, judgments about the balance between resource protection and public access are complicated by the lack of generally accepted methodologies for determining use capacity and needed facilities. For those refuges, at which greater public access is determined to be feasible, the Department of the Interior should undertake an analysis of the methods currently used to establish capacity limitations, to determine whether they can be modified to serve additional public recreational needs without resource damage.

D. General Services Administration

The General Services Administration (GSA) Office of Real Property administers Federal real property management programs under the Federal Property and Administrative Services Act of 1949, as amended. Its programs, pertinent to coastal recreation access, include the transfer of excess real property among Federal agencies and the disposal of surplus real property.

Under this law, real property (land or buildings) no longer needed by a Federal agency is reported to GSA as excess property. GSA first notifies other land-holding Federal agencies that such property is available. If GSA receives a properly justified request for further use of the property for Federal purposes, it is transferred to the requesting agency. If there are competing Federal interests in a property, GSA decides which agency will receive the property, based on the plan of utilization that, in its judgment, represents the highest and best use of the property. If the two competing interests are equally justified, the Office of Management and Budget makes the decision based on which use best implements the President's programs and policies.

If there is no further Federal requirement for a property, it becomes available for disposal as surplus real property. States and local governmental units as well as certain nonprofit institutions are then notified that it is available for acquisition at a discount of up to 100 percent for such specified purposes as health, education, parks and recreation, historic monuments, public airports, wildlife conservation, highways, and housing. Property may also be acquired by states and local public bodies for unspecified and unrestricted use by negotiated sale, provided the estimated fair market value of the property is obtained.

Disposals of surplus real property for park and recreation use must be made through the Heritage Conservation and Recreation Service of the Department of the Interior. Applicants apply directly to HCRS which requires submission of a use and development plan for the property. The decision as to suitablility of a property proposed for recreation lies with HCRS, which then requests assignment of the property from GSA on behalf of the applicant.

If conflicting interests in a property cannot be resolved at the local level, GSA then determines the ultimate recipient based on its judgment about the merits of the proposed uses and the overall public interest to be served by each. GSA officials indicate that each situation is unique and decisions can only be made on a case-by-case basis. Appraisals of the property and projected future uses are provided, but assessment of the character and nature of both the property and its proposed uses requires subjective judgment even in the most clear-cut cases. One such example occurred in Rhode Island where former Navy land was proposed for both a power plant site and for fish and wildlife uses. The latter was selected.

In the absence of express statutory authority, the only restrictions GSA can place in deeds of conveyance for property sold to private purchasers would be those that have a direct impact on real property acquired to carry out Federal program objectives. Examples of this would be a requirement to

provide fencing to protect adjacent Federal property or the retention of access easements across surplus property to a retained Federal landholding. Agreement to provide public access to coastal areas over property sold by GSA generally would have to be volunteered by the purchaser. Upon assignment of a property by GSA for recreational purposes, HCRS conveys the property to the applicant. HCRS is responsible for the inclusion of restrictions in deeds conveying property for public benefit purposes and assuring compliance with these restrictions and with the plan as approved.

Real property, not transferred for further Federal utilization or conveyed for public benefit purposes, is generally offered for public sale by competitive bid.

To operate the surplus lands program, GSA has a staff of 160, 35 of whom are stationed in Washington, D.C. The program's annual budget is approximately $7.5 million. In fiscal year 1979, HCRS, charged with overseeing properties made available for recreation, had the equivalent of six persons working on surplus property issues with an annual budget of $233,000. An average of 45 properties are transferred each year for recreation.

During fiscal year 1979, a total of 600 acres of former Federal lands in coastal areas were turned over to state and local governments for recreational use. A complete list of these properties is included in Appendix B. The properties ranged in size from a three-quarter acre former harbor defense installation at Lewes, Delaware, to 254 acres of a former Air Force base at Pasadena, Texas. Included was a former Army Corps of Engineers property valued at $16 million, turned over to the City of Miami Beach, Florida.

The surplus property program can have important coastal access benefits. For example, since it began in 1949, 29 transfers of coastal property have been made to various levels of government in California, covering a total of 75,000 feet of shoreline. These include a property with 12,000 feet of shoreline on San Francisco Bay in Marin County, 6,200 feet of shore in San Diego, and another 4,500 feet at a former Nike installation in Los Angeles. Parts of the immensely popular Golden Gate National Recreation Area in San Francisco were formerly portions of the Department of Defense's Presidio and Forts Baker, Barry, and Cronkhite. Over 11 million visitors to the area were recorded in fiscal year 1979.

Another example of a surplus property in a prime coastal location made available to a community under the program is the former Navy Yard at Charlestown in Boston Harbor. Redevelopment plans for the 105-acre property, which is a 15-minute walk from downtown Boston, call for a 16-acre waterfront park as well as housing, commercial, and industrial facilities. The recreation component of the project is considered vital by Boston Redevelopment Authority officials; the park will give citizens of the area access to the waterfront for the first time since the Navy base was established in 1800. The property was declared surplus in 1974.

Controversy can attend the announcement of the availability of surplus Federal lands. A major dispute now exists at Key West, Florida, where the city and county governments differ on the mix of uses to which a parcel of

Navy land should be put. The site, 86 acres of what is known as the Truman Annex, sits at the very tip of the Keys. It includes a natural 30-feet deep harbor, a 2,000-foot pier and such historic property as the former summer White House. The City of Key West wants the area to be used for commercial development and other facilities to serve tourists and strengthen the local economy. The County of Monroe wants more recreational opportunities and open space. The conflict will be resolved by GSA if the numerous local governments and involved advisory groups cannot agree.

Recommendations.

Public access to coastal lands that become available through the GSA Federal Surplus Real Property Program can be improved by implementation of the following recommendations:

a. OCZM, in cooperation with GSA, should prepare technical assistance information for use by state and local officials and citizen groups, explaining the recreational potential of surplus Federal coastal properties and the ways of working with GSA to take advantage of those opportunities. This information should be included in the technical assistance document on access to Defense Department properties.

b. GSA's right to attach use conditions on surplus property it sells to private parties is limited by a 1963 opinion of the Comptroller General (43 Com Gen 15) interpreting the requirements of the Federal Property and Administrative Services Act of 1949. This opinion should be reexamined by the Comptroller General; if it is still valid, the Act should be amended to permit the imposition of reasonable public access conditions on the sale of coastal properties with significant public recreation potential.

IV. Federal Agency Comments

The following Federal agencies submitted written comments on drafts of this chapter:

Department of Defense
  Navy Department
General Services Administration
Department of the Interior
  Heritage Conservation and Recreation Service
  National Park Service

All comments from agencies, states, interest groups and the public were considered in the final revisions. Significant remaining disagreements with other Federal agencies are reflected in the summaries and excerpts from their comments below. All comments are on file at the Office of Coastal Zone Management and opportunity to review these documents can be arranged.

Department of Defense

"a. Recommentation (a) to report on the public use of coastal areas for outdoor recreation on military bases to the President should be deleted. Visitor use data gathered by the DoD is primarily estimated because of the manpower required to keep accurate data and because of the extensive land areas that would require monitoring. Collection of accurate visitor use data is not feasible. However, we would be willing to cooperate in providing reasonably available data regarding public use of DoD property to other responsible Federal agencies concerned with public recreational access."

"b. Recommendation (b) states that the Department of Defense should give higher priority to the establishment of cooperative agreements for general recreation on military lands. DoD clearly supports, by policy and actions, compatible public access when feasible. The primary use and justification for retention of DoD property, however, is, by definition, the need for that property for defense purposes either existing or under contingency operations. Therefore, by definition, the use of DoD lands for public recreational use is secondary to the principal DoD land use. The existence of the many DoD public use agreements is evidence of extensive DoD cooperation. Present priority of concern with public access appears adequate as each installation is tasked, within the limitations of the military mission and resource base, to manage its natural resources in the national interest, using the following priority:

1. Protection and preservation of habitat used by rare and endangered species.

2. Management and conservation of these areas capable of providing intensive recreational use.

3. Management which will provide the greatest net public benefit."

"c. Additionally, recommendations (a) and (b) are unnecessary and they impose undue restrictions on the installation's latitude in dealing with the public. Since installations are responsible for balancing security and safety requirements and liability against the need to develop good community relations, it is necessary for each commander to decide on a case-by-case basis which programs are appropriate."

"d. In regard to recommendation (c), the existence of the many public use agreements would suggest that such guidance is not all that necessary. If published, such a document must also clearly state the DoD concerns regarding public access, the need for protection of the DoD mission, the need for ensuring safety of the public and that public use of DoD lands is a secondary land use of the property. Such a document should not be released without complete concurrence of the Department of Defense."

Chapter IV: Federal Programs Related to Energy Development

Chapter IV: Federal Programs Related to Energy Development

The President's August 2, 1979 Environmental Message and amendments to the Coastal Zone Management Act enacted in September, 1980, establishes a clear national coastal protection policy which includes as major goals the provision of predictable siting processes for major facilities and the protection of significant natural resources such as wetlands, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife. The interaction of these two goals in coastal areas is perhaps most salient in the area of energy resource development.

The Executive Branch and the Congress have focused particular attention in recent years on the role and responsibilities of Federal agencies in the siting of major energy facilities and the development of energy resources. Although improved coordination of Federal planning and regulatory programs could help to achieve the national goals of expanded domestic energy development and reduced dependence on oil, considerable potential exists for conflict between energy resource development and the protection of significant natural resources.

This chapter of the Federal Coastal Program Review addresses facility siting and natural resource protection in relation to energy resource development. Part I discusses the potential for improving predictability in the siting process for major energy facilities by improving both the quality and coordination of Federal program activities. Parts II and III review the implementation of two aspects of national energy policy and their effect on significant natural resources -- the accelerated Coal Utilization Program and the accelerated Outer Continental Shelf Leasing Program. In each area, recommendations are made to improve Federal efforts to achieve the goals enunciated in the President's Environmental Message.

I. The Energy Facility Siting Process

A. Introduction

The following discussion describes generally the energy facility siting process, outlines the Federal role in that process, and summarizes problems associated with the process. Detailed conclusions and recommendations are provided in Section B.

1. The Energy Facility Siting Process

Providing a generic description of the energy facility siting process is problematic at best. The likelihood of an energy facility being developed at any particular coastal site is a function, among other things, of the availability of natural and human resources; the developer's overall growth and investment strategy; political acceptability; the cost and availability of land; relationships to ancillary, allied and support facilities; and government regulation. In addition, the process varies by energy medium (hydro-electric, fossil-fuel, or nuclear), by facility type (power plant, refinery, transmission line), and by geographic area since many of the procedures are dictated by state laws which are not uniform.

Although it is not possible to develop a detailed model with broad applicability to all types of energy facilities, it is possible to describe a general facility siting process in procedural terms. As indicated in Figure 1, the siting process is characterized by these stages:

- Stage I of the process is program planning. Within the framework established by its own charter or corporate objectives, by state law and public utility commission policy, and by broad forecasts of growth, the utility or industry conducts facility needs assessments.

- Stage II involves site-specific planning. The utility or industry conducts site selection studies and impact analyses, makes a decision to develop a site, consults with local and state (and sometimes Federal) agencies, and proceeds to facility design. Site selection decisions are based on: technical and economic factors, the acceptability of the site from an environmental and socio-economic perspective, and a variety of other factors which may differ widely from site to site (e.g. the availability of a unit parcel of land of sufficient size to accommodate a general facility). In some cases, the site is either acquired or under option before the siting decision is made public, to keep real estate prices from escalating.

FIGURE 1

PRINCIPAL STAGES OF THE SITING PROCESS FOR MAJOR ENERGY FACILITIES

	STAGE I	STAGE II	STAGE III
	PROGRAM PLANNING	SITE-SPECIFIC PLANNING	REVIEW AND APPROVAL
DRIVING FORCE: UTILITIES INDUSTRY	o Needs assessment and analysis - Economic growth - Energy resource availability - Conservation potential o Program design - Energy media mix - Transmission o Site acquisition - Utilities unilaterally "bank" sites based on year forecasting - Coordination with government (infrequent)	o Impact analysis o Decision to develop site/site acquisition o Consultation - Local community o Public acceptability o Local labor market o Material availability o Infrastructure - Public utility commission o Rates o Transmission	o Consultation - Regulatory and approval agencies - Permit and license requirements - NEPA process o Consistency requirements - Coastal Zone Management - River Basin commissions - Water quality certification o Air, water, and noise progress for compliance with standards o Application - Permits and licenses - Leases
RESPONSE/ REACTION: GOVERNMENT	o Executive agencies develop programs based on national policy o Technical assistance o Public participation	o NRC influences siting of nuclear facilities o FERC influences siting of LNG facilities, pipelines, and primary transmission lines o DOE - power marketing administrations influence siting decisions o EPA - Emission limitations	o NEPA compliance o Consultation and technical assistance o Public participation programs o Condition permits, licenses, rights-of-way, and leases o Approve/disapprove applications

- Stage III is the review and approval phase. Site evaluation and approval is a public process conducted by local, state and Federal governments. Evaluation of a proposed site for a power generating facility or the route for a transmission line involves a series of decisions about: the need for the facility, the conformance of the facility with applicable laws and standards, the acceptance or mitigation of potential environmental and socioeconomic impacts which may result from the siting or operation of the facility, and the economic costs and benefits of the facility.

Figure 2 was adapted from a figure supplied by the electric utility industry. It shows the sequence of steps involved in Stages II and III for a hypothetical fossil-fuel electric power plant. The siting process becomes complex in the review and approval stage, with multiple state and Federal agency involvement through the process established by the National Environmental Policy Act (NEPA), through licensing and permitting requirements and through hearing procedures. The utility industry indicates that an optimistic schedule for completion of site selection and approval is 42-45 months. (See Figure 2 for a breakdown by steps in the process.) An additional 48-54 months is necessary for facility fabrication and construction. The industry indicates that the overall process can take as long as 12 years.

2. The Federal Role

The Federal government has two basic functions in the siting process: environmental assessment and regulation. The environmental assessment function is established by the National Environmental Policy Act of 1969 which directs Federal agencies to perform in-depth analyses of the potential impact of a proposed siting decision. Environmental assessment activities are usually linked directly to the regulatory process and are triggered when an agency becomes aware that it will be requested to issue a license or permit for a proposed facility.

Figure 3 summarizes the Federal regulatory functions related to the siting process, including licensing and permitting functions and consultation and review functions, and indicates the Federal agencies involved (at the Department and individual agency level) by type of energy facility.

FIGURE 2 (155)

TYPICAL COASTAL FOSSIL STEAM-ELECTRIC FACILITY
SITING-LICENSING-CONSTRUCTION

OPTIMISTIC SCHEDULE
90 - 108 MONTHS

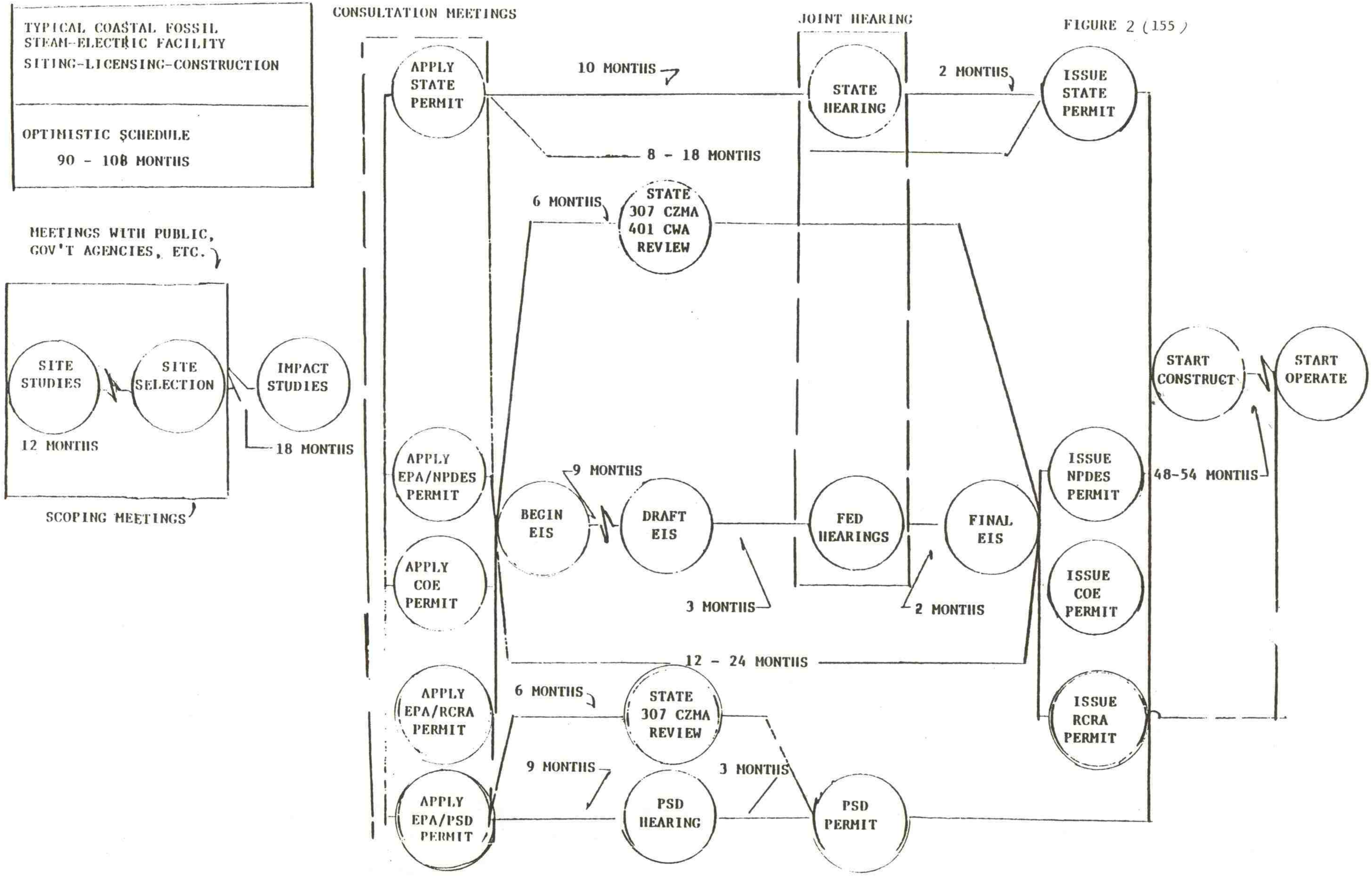

FIGURE 3

MAJOR REGULATORY FUNCTIONS OF FEDERAL AGENCIES BY ENERGY CATEGORY

EXECUTIVE DEPARTMENT/AGENCY	DOC	DOD	DOE			DOI				DOT		EPA	NRC	USDA	WRC
SUB-UNIT	NMFS	COE	DOE	ERA	FERC	BLM	FWS	GS	NPS	CG	FAA			FS	
ENERGY CATEGORY															
Oil & Gas - OCS	C	P	C		P	F	C	P,F	C	P	C	P			
Oil, Gas, LNG - Onshore		P			P	F	C				C	P			C
Oil Refineries	C	P		P			C				C	P		F	C
Hydroelectric	C	P			P	F	C		F		C	P		F	C
Nuclear - Onshore	C	P				F	C				C	P	P	F	C
Nuclear - Offshore	C	P					C			P	C	P	P		
Fossil-Fuel Powerplants	C	P		P	P	F	C		F		C	P		F	C
Transmission Lines		P	C		P	F	C		F		C			F	C

LEGEND

P - Permits on public and private lands
F - Permits, leases and rights-of-way on Federal lands
C - Consultation or review

NOTE: Enforcement of standards and laws is performed for all energy categories by OSHA, Justice, FTC and SEC. See Appendix A for a list of abbreviations and description of agency authorities and functions.

Figure 3 indicates the multitude of permits that a typical fossil-fuel power plant could require. Depending upon its location, the multitude could include permits from the Department of Energy the U.S. Army Corps of Engineers, and the Environmental Protection Agency. It would also require consultation with the Fish and Wildlife Service, the National Marine Fisheries Service, and the Federal Aviation Administration. It might need leases or rights-of-way from the Bureau of Land Management, the National Park Service and the Forest Service.1/

The primary characteristics of the Federal role in energy facility siting are that it is reactive and fragmented. First, as illustrated on the preceding pages, Federal involvement occurs chiefly through the regulatory process which responds to industry initiative in the siting of energy facilities. Although Federal policy provides extensive guidance to those initiating energy facility siting processes, substantive Federal involvement in a specific siting decision generally does not occur until late in the process, after much planning has already been done and numerous commitments may have been made by the utility or corporate interest involved. Second, Federal responsibility is shared by numerous agencies, which carry out their review and approval functions in response to their own missions, as determined by various pieces of legislation and by Administration and agency policy and procedures. Multiple authorities and separate analysis of proposed actions may be necessary for protection of public health and safety. An agency whose mission is to develop resources may not be sensitive to natural resource protection concerns. The converse may also be true. Through actions responsive to their independent and separate missions, Federal agencies provide a system of checks and balances in the siting process. Without adequate communication and coordination, such a system quickly becomes unwieldy.

3. Problems Associated with the Siting Process

The energy facility siting process has been heavily studied in recent years. Since 1970, more than 30 major studies have been performed for Federal agencies by various contractors and commissions. Figure 4 lists some of the major studies that have been performed and indicates the problems identified. Although the reasons ascribed vary, each of these studies agrees that the current siting process lacks predictability.

In part, predictability is difficult to achieve because of the need to balance promptness with full consideration of varying points of view. Predictability can be increased by reducing the alternatives considered and by limiting opportunities for participation in the decisionmaking process. Such an approach is not consistent with full consideration of

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1/ Appendix C gives a somewhat more detailed description of the Federal regulatory responsibilities shown in Figure 3. Since the purpose of this study is not to examine each of these programs individually but to evaluate their relation to the siting process, a detailed description of each of these programs is not included in the text of the report.

FIGURE 4

PROBLEMS IDENTIFIED													
Multiple Authorities	X		X	X				X	X			X	X
Institutional Inflexibility								X				X	X
Lack of Recognized Central Forum	X	X		X	X			X		X	X	X	X
Lack of Accountability	X			X				X				X	X
Multiple Decision Points		X	X	X	X								X
Duplicative and Overlapping Regulatory and Review Requirements	X			X				X				X	X
Inconsistent Procedures	X	X		X	X	X		X			X	X	X
Amorphous National Interest				X							X		X
Lack of Uniform Federal Policy and Criteria	X			X						X	X	X	X
Inadequate Consideration of Regional Needs			X	X					X	X	X		
Inadequate Coordination of Federal and State Activities and Requirements				X	X					X			
Inadequate Public Participation Programs		X		X	X	X	X			X	X	X	X
TRACKING													
Lack of System to Document Cause of Delay	X	X		X			X					X	
Lack of Mechanism to Resolve/Eliminate Processing Delays	X	X		X							X	X	
Lack of Mechanism to Coordinate All Schedules	X			X								X	
Lack of Interagency Management Process	X	X		X			X				X	X	
Lack of Means to Document All Monitoring Activities in One Place	X			X							X		
CONFLICT RESOLUTION													
Lack of Mechanism to Resolve													
o Competitive Demands for Resources											X		X
o Conflicting Environmental Concerns and Economic Pressures	X			X			X				X		X
o Local Concerns vs "National Interests"	X			X			X				X		
o Frustrations Ending in Courts - Citizen Suits									X		X		
MOVING TARGETS													
Ambiguous Regulatory and Review Requirements					X							X	X
Regulations Change During Processing					X				X	X		X	X
INFORMATION													
Lack of Mechanism to Coordinate Multiple Agency Data Gathering & Environmental Assessment				X						X	X	X	
Extensive Array of Literature is not Organized nor Related to Regional Needs				X		X				X		X	
Federal Agencies do not Provide Adequate Technical Assistance to States & Locals	X	X	X	X	X	X	X			X	X	X	X

FIGURE 4

SUMMARY OF MAJOR STUDIES RELATED TO ENERGY FACILITY SITING

PROBLEMS IDENTIFIED / STUDIES	BERKELEY ENERGY FACILITY STUDY	BOOZ-ALLEN HAMILTON – FOR FEA	BOOZ-ALLEN HAMILTON – FOR NERC	DOUB COMMISSION	ENVIRONMENTAL POLICY INSTITUTE	FEDERAL ENERGY ADMINISTRATION	MITRE COPR – METREK DIVISION	NATIONAL ACADEMY OF PUBLIC ADMINISTRATION	NEW ENGLAND FEDERAL REGIONAL COUNCIL	NEW ENGLAND REGIONAL COMMISSION	PRINCETON CTR. FOR ENERGY & ENVIRON. STUDIES	RESOURCE PLANNING ASSOCIATES	SORENSON AND KANOUSE
Multiple Authorities	X		X	X				X	X			X	X
Institutional Inflexibility								X				X	X
Lack of Recognized Central Forum	X	X		X	X			X		X	X	X	X
Lack of Accountability	X			X				X				X	X
Multiple Decision Points		X	X	X	X								X
Duplicative and Overlaping Regulatory and Review Requirements													
	X			X				X				X	X
Inconsistent Procedures	X	X		X	X	X		X			X	X	X
Amorphous National Interest				X							X		X
Lack of Uniform Federal Policy and Criteria													
	X			X						X	X	X	X
Inadequate Consideration of Regional Needs													
			X	X					X	X	X		
Inadequate Coordination of Federal and State Activities and Requirements													
				X	X					X			
Inadequate Public Participation Programs													
		X		X	X	X	X			X	X	X	X
TRACKING													
Lack of System to Document Cause of Delay													
	X	X		X			X					X	
Lack of Mechanism to Resolve/Eliminate Processing Delays													
	X	X		X							X	X	
Lack of Mechanism to Coordinate All Schedules													
	X			X								X	
Lack of Interagency Management Process													
	X	X		X			X				X	X	
Lack of Means to Document All Monitoring Activities in One Place													
	X			X							X		
CONFLICT RESOLUTION													
Lack of Mechanism to Resolve													
o Competitive Demands for Resources													
											X		X
o Conflicting Environmental Concerns and Economic Pressures													
	X			X			X				X		X
o Local Concerns vs "National Interests"													
	X			X			X				X		
o Frustrations Ending in Courts - Citizen Suits													
									X		X		
MOVING TARGETS													
Ambiguous Regulatory and Review Requirements													
					X							X	X
Regulations Change During Processing													
					X				X	X		X	X
INFORMATION													
Lack of Mechanism to Coordinate Multiple Agency Data Gathering & Environmental Assessment													
				X						X	X	X	
Extensive Array of Literature is not Organized nor Related to Regional Needs													
				X		X				X		X	
Federal Agencies do not Provide Adequate Technical Assistance to States & Locals													
	X	X	X	X	X	X	X			X	X	X	X

TABLE I

SITING STUDIES INCLUDED IN FIGURE 4

Berkeley Energy Facility Study by Contract for Federal Energy Administration (now DOE), 1977. Trends in the Siting of Conventional Coal-fired Power Plants.

Booz-Allen-Hamilton, Inc., by Contract for Federal Energy Administration (now DOE), 1976. Design of a Tracking System for Federal Regulatory Energy Facility Siting Actions.

Booz-Allen-Hamilton for the Northeast Regional Commission, 1976-7. Power Facility Siting Guidelines in New England

Federal Energy Regulation Study Team (Doub Commission) for the President, 1973-4. Federal Energy Regulation: An Organizational Study.

Environmental Policy Institute for Federal Energy Administration (DOE), 1977. Energy Facility Siting Workshops.

Federal Energy Administration (now DOE), 1976. Comparison of Existing State Laws with Expected Application Requirements of Federal Law.

Mitre Corp. - Metrek Division for National Science Foundation, 1977. Public Participation in Energy Related Decisionmaking: Workshop Proceedings

Princeton University, Center for Energy and Environmental Studies for DOE, 1979. Energy Facility Siting and the Urban Coastal Zone: Policy Alternatives from the Perspective of Local Government Officials.

Resource Planning Associates for the Federal Energy Administration (now DOE), 1976. Using A Management Action System to Streamline the Federal Energy Regulatory Process.

Sorenson, Jens, and Randele Kanouse for DOE, 1979. National Energy Policy and State Coastal Programs: A Critique of Current Efforts to Balance Environmental Protection and Energy Production Along the Coast.

New England Regional Commission for Federal Energy Administration (now DOE), 1975. Decisionmaking for Energy Facilities in New England.

National Academy of Public Administration for Federal Energy Administration (now DOE), 1977. The Federal System and Energy Facility Siting.

New England Federal Regional Council, Energy Resources Development Task Force, 1976. A Report on Nuclear Power Plant Delays in New England.

varying viewpoints, and it violates the requirements of NEPA. It is also likely to lead to conflicts between siting decisions and protection of coastal resources.

Nevertheless, there is evidence that the system is not operating to produce an optimal combination of predictability and full participation. The 1974 Doub Commission report on Federal Energy Regulation, for example, concluded that:

> The pressures of crisis have accelerated a building awareness that the regulatory system does not respond with the speed, flexibility, clarity and decisiveness appropriate to our country's energy-related needs. Criticism and dissatisfaction are widespread.... All groups appear to regard the energy regulatory system as biased, confused and indecisive.
>
> Conflict and dissatisfaction are endemic to the regulatory process, which must balance a variety of competing and often equally compelling interests. But there is persuasive evidence that the energy regulatory system is so disjointed and complex that any organization or group seeking to deal with it must be prepared to encounter more financial expense, confusion and frustration than appears reasonable or warranted.2/

Similarly, a 1979 study of efforts to balance environmental protection and energy production along the coast stated:

> ...[T]here is little doubt that the regulatory process for energy facility siting has become excessively complex and costly. ...It is not uncommon for a proposed coastal energy facility to be required to seek permits from more than a dozen separate governmental entities.
>
> Sohio's proposed PACTEX pipeline is undoubtedly one of the most extreme examples of this problem. Sohio spent $50 million over five years on plans and environmental studies, obtained 700 permits, and won a Long Beach referendum over its proposed tanker terminal before it abandoned this $1 billion project.3/

Lack of predictability in the energy facility siting process is a problem for two primary reasons -- it results in delays and increased

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2/ Federal Energy Regulation Study Team, Federal Energy Regulation: An Organization Study prepared for public, congressional, and agency comment, William O. Doub, Chairman, April 1974, page 13; hereafter cited as Doub Commission Report.

3/ Kanouse, Randele and Jens Sorensen, National Energy Policy and State Coastal Programs: A Critique of Current Efforts to Balance Environmental Protection and Energy Production Along the Coast, a study performed under contract to the U.S. DOE, April 1979, pages B-34-35; hereafter cited as National Energy Policy and State Coastal Programs.

costs, and it sometimes results in a less than optimal balance between energy development and natural resource protection goals. The Doub Commission report included a succinct statement of the goal of regulation which is directly applicable to energy facility siting in the coastal zone:

> ...The goal of regulation remains the same: sound, prompt regulatory decisions consistent with open debate and full consideration of legitimate conflicts.4/

The discussion which follows offers several recommendations designed to improve Federal efforts to achieve this goal.

B. Conclusions and Recommendations

The Review has focused on improvement of Federal performance in the energy facility siting process in the expectation that such improvement would benefit coastal resource planning by leading to energy facility siting decisions that more effectively balance energy resource development and natural resource protection goals. Since the Federal role in facility siting is limited, the Review does not provide comprehensive recommendations on the subject of energy facility siting. Although both procedural and technical aspects of Federal involvement in the siting process are important in improving coordination and predictability, this analysis targets the procedural elements.

Two basic approaches to the problem of unpredictability can be taken. The simpler and more direct approach would be to put someone in charge of the total process. This approach, which would create a Federal governmental "super permitter", is not being actively considered as a matter of national policy at this time and is not explored in this study. The more complicated and incremental approach is to improve the performance of the current process, with its complex interaction of participants and balancing of various interests.

One limitation of the discussion which follows should be noted. Issues associated with local and state government and utility industry performance in the process are not addressed. State coastal zone management programs, for example, are required to identify processes for siting of energy facilities. These processes are not examined in the Review because they deal with the state rather than the Federal role in facility siting. Experience to date with state coastal management program influence on energy facility siting decisions is limited because most state programs have been approved quite recently. However, the 1979 study referred to above found that:

4/ Doub Commission Report, page 14.

> To date, state coastal programs have not been a significant source of costs in the siting of energy facilities. All approved state coastal programs allow the agency to approve energy facilties that are necessary for economic well-being, even if such a facility will adversely affect the natural coastal environment. In short, no state coastal agency has attempted to create a ban, or impose excessive mitigation measures, upon coastal energy facilities.5/

Since the Federal role in the energy facility siting process is reactive and limited, recommendations for improving Federal participation will not revolutionize the process. In fact, the recommendations contained in this report may appear both modest and narrow in relation to the overall scope of the issue of energy facility siting. However, if vigorously implemented, the recommedations could result in significant improvements in the siting process.

1. A need exists for a central forum at the Federal level to coordinate the multiple Federal authorities involved in the energy facility siting process in the coastal zone.

At least 15 Federal agencies are involved, some through multiple programs, in regulatory decisionmaking on energy facility siting (see Figure 3 and Appendix C). Only a few deal exclusively with energy matters, but even agencies having ancillary contact with the regulation of energy facilities may significantly affect facility siting decisions.

In general, decisions have been made by these agencies in separate forums where issues and information presented address only individual agency responsibilities and regulatory authority. Analysis by one agency, made to fulfill the requirements of its mission and authority alone, often does not consider the impact of its decision on the ability of other agencies to carry out their programs. As a consequence, an agency decision on one aspect of a project can duplicate or prejudice a subsequent decision by another agency on a different aspect of the process. Interagency conflict frequently results.

Federal agency review of the proposal of the Hampton Roads Energy Company (HRECO) to site an oil refinery at Portsmouth, Virginia, provides an example where problems arose due in part to the lack of an effective forum for early coordination of Federal agency review activities. On March 3, 1975, HRECO applied for a Corps of Engineers (COE) permit to dredge and construct a 175,000-250,000 barrel per day oil refinery and marine terminal at Portsmouth, Virginia. Products would include fuel oil, jet fuel, and gasoline. The proposed terminal would be capable of accommodating two tankers and up to four barges for outgoing refined products.

5/ National Energy Policy and State Coastal Programs, page 5.

Waterborne commerce would deliver the products throughout the Chesapeake Bay and to other East Coast markets.

The history of Federal agency involvement in the review of this project illustrates several problems of coordination in energy facility siting. First, there was a lack of full consideration of alternative sites prior to site selection. HRECO secured the site prior to notifying Federal agencies of its intent to apply for permits. The March 1975 application for a COE dredging permit under Section 10 of the River and Harbor Act of 1899 and Section 404 of the Federal Water Pollution Control Act of 1972 triggered the environmental impact statement (EIS) process. The Corps of Engineers, as lead agency, produced a draft EIS in November 1975, a final EIS in September 1977, and a supplement to the final EIS in September 1978, which presented an evaluation of alternative sites. That evaluation, according to the National Oceanic and Atmospheric Administration, the Department of the Interior, the Environmental Protection Agency, and a number of other commenters, demonstrated that the site selected was the environmentally least desirable of all 19 sites considered.

Second, there was a lack of coordination between Federal agencies and their delegated state implementing authorities. The Virginia Air Pollution Control Board granted necessary air permits to HRECO on October 7, 1975 after a public hearing held on August 28, 1975 and before completion of a draft EIS. At the public hearing on the dredging permit held by the COE on April 19, 1975, the EPA Regional Administrator spoke out against the project, contending that the refinery was "environmentally unacceptable" because it would add to an already serious photochemical oxidant problem in Virginia's Tidewater region.6/

Third, there was a lack of effective balancing of interests among the Federal agencies involved. During preparation of the supplement to the EIS, the Chief of Engineers formed an interagency task force of the Department of Energy, the Environmental Protection Agency, the U.S. Coast Guard, the Fish and Wildlife Service of the Department of the Interior, the National Marine Fisheries Service of the National Oceanic and Atmospheric Administration, and the Material and Transportation Bureau of the Department of Transportation. However, the agencies did not succeed in balancing their views to reach consensus on an optimal course of action. The COE, after delays resulting from additional analyses performed in response to EPA's air quality concerns, proceeded to issue the dredging permit. Both the National Oceanic and Atmospheric Administration and the Department of the Interior strenuously objected, claiming that the lead agency had not adequately addressed their concerns.7/ The project is proceeding over the objections of the National Oceanic and Atmospheric Administration, the Enviromental Protection Agency, and the Department of the Interior.

6/ Merchant, Barry, EPA's Emission Offset Policy and Energy Facility Siting, Chapter 7.

7/ Letter from Secretary of Interior, Cecil Andrus, to Secretary of the Army, Clifford L. Alexander, Jr., November 16, 1979, and Letter from Administrator of the National Oceanic and Atmospheric Administration, Richard A. Frank, to Assistant Secretary of the Army for Civil Works, Michael Blumenfeld, May 23, 1979.

As illustrated by Hampton Roads there is a need for state or regional coordinating mechanisms including Federal agencies to ensure that the competing goals involved in energy facility siting decisions are balanced and that all parties are given adequate opportunity to participate in analysis and decisionmaking.

At least in part to respond to this need, the President ordered in 1978 that an Energy Coordinating Committee be established (Executive Order 12083, September 27, 1978). The functions of the Committee are to ensure communication and coordination among Federal agencies concerning energy policy and the management of energy resources and to develop recommendations for improvement in the implementation of Federal energy policies and the management of energy resources that involve two or more Executive agencies. While the Committee has been successful in addressing some issues of national energy policy, its activities generally have not reached down to the level of individual facility siting decisions.

Three types of mechanisms that could be used to address this need are discussed below. The first offers examples of early coordination through state/regional mechanisms. The second involves early coordination of environmental impact assessment activities. The third is collaborative intergovernmental planning for special areas. Each of these mechanisms offers a way of bringing Federal agencies and other parties involved in a facility siting decision together to define isues and share information before the formal agency decisionmaking process begins and positions become entrenched.

a. Regional Coordination

One example of a successful coordination effort to review permit applications is provided by a group of Federal and state resource management agencies in the State of Washington. The group, which calls itself "Muskoxen," was organized in 1978 by mutual consent of the Environmental Protection Agency, the Fish and Wildlife Service, the National Marine Fisheries Service, and the State of Washington's Department of Ecology. The group holds informal monthly meetings to discuss, at the preapplication stage, proposed projects including energy facilities that will be coming before one or more of the agencies for licensing, permitting or some other form of review and approval. Developers are encouraged to present their proposals to the group at a very early stage, before major design work is complete and while there is still opportunity to consider alternatives.

Proposed projects are placed on the agenda for discussion at the request of any participating agency. That agency leads the discussion, stating its concerns and asking others' opinions. A site visit may be reported with photographs and materials noting relevant factors such as vegetation, wildlife, and apparent water quality. The group attempts to reach consensus on the impact of the proposed project, the value of the resource to be affected, alternative actions to be considered, potential mitigation measures, and permit conditions that may be warranted. However, no pressure is exerted to force a group decision. Coordination may also be furthered through discussion with local planners. This preapplication review saves the developer time and money during initial project design. Benefits of this informal regional coordination effort are:

-- Problem areas are identified early in the process, and applicants are alerted to the full range of Federal and state agency requirements and concerns.

-- The formal regulatory review and approval process under these agencies' authorities is accelerated by reducing the need for each agency to conduct an independent investigation.

-- The agencies can achieve an optimal decision by balancing the viewpoints of all agencies involved.

Informal coordinating mechanisms of this kind could be established in any area using existing Federal agency authority and operating requirements and without elaborate arrangements for structure and procedures.

A second example of regional coordination is provided by the New England River Basins Commission (NERBC), which has convened a regional task force of utilities, Federal, state, and local agencies and special interest groups to discuss current problems in power plant siting. The project is funded by the Resource and Land Investigation Unit (RALI) of the United States Geological Survey, with a mandate to provide the Commission, state and public utilities with recommendations for commission policy or action.

The task force is evaluating the process by which siting decisions are currently made and the potential for improvement in consideration of water and land resources. The task force has been given wide latitude by the Commission to design alternative site selection processes that respond to the variety of interests participating in this effort. Working by consensus and using a professional group facilitator, the task force has agreed to a series of problems, principles for solving problems, and three alternative site selection processes. NERBC will design and conduct an implementation program focused on stake holders within each New England state. The continuing program will attempt to build consensus among these stake holders in developing detailed procedures to implement the three process alternatives. 8/

The potential benefits to all parties involved in a forum such as the task force are many. Utilities may improve their site selection process, decrease the lead time required for power plants to begin commercial service, reduce environmental mitigation costs, and increase public acceptability of their proposals. Public agencies will gain influence on the site selection process, acquire information on the water and related land resource impacts, and obtain valuable knowledge of candidate sites for future plants.

Recommendation:

1. OMB should direct all Federal agencies whose programs influence the siting of major energy facilities in coastal regions to coordinate their

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8/ Robert Kasvinsky, New England River Basins Commission, Boston, June 1979.

activities through regional/state interdepartmental umbrella agreements which (a) define agency authority and responsibility in the facility siting process and identify related planning and regulatory programs; and (b) provide for joint planning and review through mechanisms similar to those described in the foregoing analysis.

b. Coordination through the NEPA process

NEPA requires that an environmental impact statement be prepared for "major Federal actions significantly affecting the quality of the human environment."9/ Since Federal agencies sometimes have differing interests in proposed activities, there has been substantial conflict over the scope and findings of environmental impact statements. These conflicts generally have not surfaced until after the preparation and release of a draft environmental impact statement. Agency interactions often take the form of adversarial comment in response to the draft EIS, as illustrated in the Hampton Roads case.

In 1978, the Council on Environmental Quality promulgated revised regulations for implementation of NEPA.10/ These regulations provide for a "scoping" process at the beginning of the environmental assessment of a proposed Federal action. This process can and should be used to promote earlier coordination among the parties involved in an energy facility siting decision. Scoping is intended to be "an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action."11/ In the case of an energy facility siting decision, significant issues would normally include the consideration of alternative sites and severity of environmental impacts.

As soon as a Federal agency learns of a proposed action over which it will have some jurisdiction through licensing, permitting, or other responsibilities, and if the action is such that preparation of an environmental impact statement will be required under the provisions of NEPA, the agency must publish in the Federal Register a notice of its intent to prepare an environmental impact statement.12/ In the course of the "scoping process" that follows the Federal Register notice, the lead agency must:

-- invite the participation of affected Federal, state, and local agencies, any affected indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds);

-- determine the scope of and the significant issues to be analyzed in depth in the environmental impact statement;

-- identify and eliminate from detailed study issues which are not significant or which have been covered by prior environmental review;

9/ 42 USC 4332.

10/ 40 CFR 1500.

11/ 40 CFR 1501.7

12/ 40 CFR 1506.6

-- allocate assignments for preparation of the environmental impact statement among the lead and cooperating agencies;

-- identify other environmental review and consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, and integrated with, the environmental impact statement; and

-- indicate the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decisionmaking schedule.13/

Full and vigorous implementation of these requirements could improve Federal agency coordination in energy facility siting decisions by assuring that all interested parties are in contact before the EIS is prepared. This contact will increase the potential for exploration of alternative sites and actions as required by NEPA. It also provides a mechanism for coordinating the development of the EIS with any other analyses that may be required related to the proposed facility siting decision.14/ This can increase Federal agency efficiency and help to give applicants a complete understanding of the Federal requirements that a project will have to meet.

Recommendations:

1. CEQ should monitor the performance of agencies in complying with the scoping process established by the revised NEPA regulations to assure that all required Federal actions related to an energy facility siting decision are identified early in the process and coordinated with one another and that a genuine consideration of alternatives and impacts occurs.

c. Collaborative intergovernmental planning for special coastal areas

In October 1980, Congress amended the Coastal Zone Management Act to "encourage the preparation of special area management plans, which provide for increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, and improved predictability in governmental decisionmaking." This amendment and the concept of special area management planning are based on experiences of collaborative Federal, state and local planning for balancing conservation and development needs and resolving permit disputes in San Francisco Bay, Lower Willamette River Oregon, Gray's Harbor Washington, Coos Bay Oregon and other areas.

The Special Area Management Planning process described in Chapter V, may have some applicability to the energy facility siting process in limited geographic areas where the need for and impacts of energy related projects must be balanced with other significant resources of state or national concern,

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13/ 40 CFR 1501.7(a)(1)-(7).

14/ 40 CFR 1506.4.

such as wetlands, and where other more traditional planning or siting processes are unsuitable for resolving conflicts. The key features of the process include:

- identification of a "special area," preferably on an ecosystem basis;

- a collaborative intergovenmental process involving all key Federal, state and local agencies and interest groups that have legal authority or an effective veto over development projects;

- agreement by consensus;

- integration of Federal, state and local legal reguirements and criteria into a unified plan;

- use of a neutral party to guide, coordinate, record and mediate;

- meaningful public involvement;

- specialized mechanisms for implementation; and

- stratified or tiered regulatory decisionmaking.

The last feature, stratifed or tiered regulatory decisionmaking, has the potential for a major effect on the predictability and timing of energy facility siting and related state and Federal permit decisions. The chapter on improved coordination for special areas recommends that the regulations for the Army Corps of Engineers permit program, Section 404(b) (1) of the Clean Water Act, and other programs affecting permit decisions on coastal areas be modified to allow agencies to use Special Area Management Plans for making and recording a first stage or tier of regulatory decisions related to development proposals expected in a special area, in advance of the receipt of specific applications for permits. The recommendation is based on the tiered concept of environmental impact assessment included in CEQ's regulations for implementing the National Environmental Policy Act. (For further discussion of and recommendations on Special Area Management Planning, see Chapter V.)

2. More effective use of existing and proposed tracking mechanisms could expedite decisions and increase predictability in the siting of major energy facilities in the coastal zone.

Less than five years ago, no mechanisms existed for tracking energy facility projects through the steps involved in Federal agency review and approval of license and permit applications.15/ Neither project applicants nor Federal agencies had a road map for determining the path to approval and conveniently locating a project's current position on the path. As a result, project applicants were frequently unaware of some of the steps in the review process and were unprepared to supply the required information. Federal agencies found themselves unduly criticized for causing delays in the process partly because they were unable to supply complete and current information on the status of specific projects.

In the past few years, two types of tracking systems have been developed and implemented. The LORDS system employed by the Nuclear Regulatory Commission and the READI system of the Federal Energy Regulatory Commission employ similar techniques to produce management reports designed to provide information necessary for intra-agency monitoring and controlling programs:

- The LORDS system (Licensing Online Retrieval Data System) enables the Nuclear Regulatory Commission to control the review processes for central station nuclear reactor applications and the construction of nuclear power plants. The system results in regular reports (so-called Rainbow books) that provide data for synchronizing the licensing process with predicted fuel loading dates as well as providing a central Federal government report for commercial reactor licensing, siting and construction. A chart is made for each project in the system, and the position of the project on the chart is pinpointed each time the Rainbow books are published. Projects that are delayed are flagged, and the cause of delay is noted.

- The READI system, developed in 1978 by the Federal Energy Regulatory Commission (FERC) was modeled after the LORDS system and consists of a series of Rainbow Books complementing and supporting an automated tracking system, the Regulatory Evaluation and Docketed Information System (READI system). The FERC Rainbow book series includes specialized books which focus

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15/ Tracking involves identifying all of the steps from permit application to approval, entering a record in a computer or manual system and "tracking" the permit as it moves through the steps in the process. At any time, the precise location of the project on the decision chain can be pinpointed.

on areas requiring concentrated management attention. For example, one book reports on a handful of cases which are designated as critical because they involve very large volumes of energy. Two other books focus on the formal cases at FERC in order to foresee and prevent avoidable delays in the hearing process. In addition to the specialized books, the FERC Rainbow Book series includes two comprehensive books that together account for FERC's entire docketed and nondocketed workload. The automated READI system which provides detailed status information on every docketed case pending at FERC based on information supplied by staff at the working level. The Rainbow Books and the READI system document the steps in the FERC regulatory process and the amount of time required at each step. As a result, they have led to several management improvements at FERC such as establishment of a project manager organization for critical projects, implementation of expedited procedures for handling settlements, and transfer of decisionmaking authority downward from the Commission to office directors through formal delegations of authority.

In contrast to these systems which provide intra-agency coordination and expediting of review processes, the Office of Management and Budget has established a Permit Review Assessment Task Force to identify major energy facilities and related permits and licenses and determine the extent to which Federal regulatory processes were impediments to the licensing of coal-fired powerplants and coal mines. Members include OMB, the Bureau of Land Management (BLM) and the Office of Surface Mining of the Department of the Interior, the Environmental Protection Agency, the Corps of Engineers, the Rural Electrification Administration (REA) of the Department of Agriculture, the Department of Energy, the Council on Environmental Quality, and the Mine Safety and Health Administration of the Department of Labor.

The Department of Energy, under the auspices of the OMB Task Force, has developed a tracking system on REA, EPA, BLM, and COE permits for coal-fired powerplants to support this Federal effort at coordination. This is the first time the Federal government has attempted to determine the status of each coal fired powerplant in the Federal permitting process. Since most Federal permits are administered at the regional, district, or local level, extensive cooperation by the district offices was required to compile the necessary information. The October 1979 Semiannual Report of the Task Force made the following significant points regarding the effort:

- This is the first interagency effort by the Federal Government to determine what major permits are required for coal-fired powerplants.

- Each agency determined what facilities by name and location are presently requesting permit approvals.

- Target dates were established by each agency for each permit by facility. Although this is not required under the statutes implemented by these representative departments and agencies, such

information will enable responsible persons concerned with that particular permit to know what the estimated time requirement will be for its approval or disapproval.

- An interagency tracking system was developed that identifies what facilities permits are requested, from whom, and when a decision is to be rendered. Departmental permit tracking systems contain more detail than the interagency one.

- This Task Force effort has resulted in each agency improving significantly its own internal management information systems and permitting procedures.

- Closer coordination between agencies and departments should improve and streamline the permitting process.

- The Task Force plans to produce reports semiannually that reflect the status of those facilities presently in the Federal permitting process and any new ones that have entered it.16/

The benefits of tracking systems such as those described are many:

- They give the project applicant a clear picture of the review process and help to identify the information that the applicant must provide.

- They establish accountability and thus induce cooperation by publicly pinpointing the causes of delay in the permitting or licensing process.

- They provide public information about the status of projects.

- They assist the lead agency preparing an EIS for a similar project in obtaining a full picture of the steps and participants involved.

- They provide a decision history on projects that can be used to identify common problems that need to be addressed by applicants or reviewing agencies.

Although information from these systems is public, it is not widely disseminated. State and local governments, which are also active participants in energy facility siting processes, would benefit from the information just as Federal agencies and applicants do.

16/ OMB Permit Review Assessment Task Force, Coal-Fired Powerplants' Federal Permit Status Report, Second Edition, October 1979, page 3.

Recommendations:

1. Under authority of Executive Order 12129, 17/ the Office of Management and Budget should activate other generic fuels review task forces comparable to the Permits Review Assessment Task Force for Coal-Fired Powerplants and Coal Mines.

2. OMB should direct the Permits Review Assessment Task Force for Coal-Fired Powerplants to supply its tracking methodology to additional generic fuel task forces in order to expedite implementation of tracking and monitoring, avoid duplication of effort in developing methodology, and provide for uniform analysis of all generic fuel types. This will enable OMB and other interested parties to compare the effectiveness of the Federal permitting processes and identify areas where improvement is needed.

3. OMB should direct the Department of Energy to provide tracking information to state and local governments to assist them in coordinating review and regulatory schedules.

3. Mediation techniques offer one solution to the problem caused by a lack of effective mechanisms within the Federal structure for use in resolving conflicts related to energy facility siting and resource development.

Resolving conflicts between development and preservation interests and determining the appropriate use and allocation of coastal resources is one of the most critical and divisive issues associated with the energy facility siting process. Unfortunately, the process is frequently not structured to facilitate conflict resolution so that many disputes end up in the courts or the political process for resolution. For example, efforts begun in 1972 by a subsidiary of Pacific Lighting Corporation to site a liquefied natural gas (LNG) terminal in California are still tied up in court. In 1977, the Governor and Legislature, 18/ frustrated with the inability of the interested parties to reach agreement on any of the sites under consideration, passed preemptive legislation that altered the planning process (circumscribing the role of the California Coastal Commission) in an effort to expedite facility siting decisions. In 1979, the

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17/ 44 Federal Register 21001, 1979

18/ Susskind, Lawrence E. and Stephen R. Cassela. "The Dangers of Preemptive Legislation: The Case of LNG Facility Siting in California" Environmental Impact Assessment Review, Vol. 1, No. 1, March 1980, pp. 9-26.

Federal Energy Regulatory Commission (FERC) approved a site at Point Conception in the last of a dozen state and Federal agency reviews. This siting decision has been challenged by the Chumash Indians and a number of area citizen and environmental groups. An application to FERC for a rehearing was denied, and citizen groups have filed an action in the Federal Circuit Court of Appeals. Thus, after 8 years, basic conflicts over site selection remain unresolved, and the planning process is halted by pending court action.

The authors of a recent case study on the history of this planning process have concluded:

> Had California confronted the real weaknesses in its energy facility siting process, the state could have identified positive steps that would have accelerated site selection without triggering the staunch opposition that now threatens indefinite delay....In their headlong rush to override previously enacted regulatory requirements, the governor and the legislature short-circuited mandated environmental reviews, leaving those opposed to the proposed facility and those likely to be adversely affected by it no choice but to seek redress through the courts.... A lawsuit filed at the end of a multilayered review process can delay and ultimately "kill" a project, suggesting that not everyone who should have participated in the "bargaining process" from the beginning was, in fact, involved or that the mechanisms for balancing competing interests in the course of the review process were not adequate to the task of achieving consensus.
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> Facility siting still remains a problem in California as well as in other states. New ways must be found to bring all the parties with a stake in each siting decision to the bargaining table. Their negotiations must be supported by technical analyses that they believe to be credible. Negotiations must seek to balance statewide needs with local concerns. Existing regulations must be accepted as constraints on the bargaining. Negotiations of this sort, perhaps involving mediation, may produce the definitive siting decisions for which California is searching.19/

In specific disputes where all involved participants are interested in arriving at a solution, the process of mediation can provide an alternative to the costly, time-consuming court process. Mediation is a method of conflict resolution which has been characterized as follows:

> A voluntary process in which those involved in a dispute jointly explore and reconcile their differences. The mediator has no authority to impose a settlement. His or her strength lies in

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19/ Ibid.

> the ability to assist the parties in resolving their own differences. The mediated dispute is settled when the parties themselves reach what they consider to be a workable solution.20/

In general, a mediated agreement is legally binding only on those parties signing the agreement and is applicable only to the dispute in question. The American Arbitration Association states some of the benefits of mediation over the long term:

> Mediation allows individuals to develop the attitudes of trust and respect they need in order to tackle difficult problems. One of the often unarticulated purposes of mediation is to create a needed working relationship where none has existed previously among the disputing parties. The close working relationships forged during mediation help to ensure successful implementation of an agreement, and often create an enduring relationship within which subsequent problems can be addressed before they become conflicts.21/

A study of "The Potential of Mediation for Resolving Environmental Disputes Related to Energy Facilities" performed for the Department of Energy in 1979 by American Management Systems, Inc, found that:

> Mediation has potential for achieving quicker and more satisfactory solutions for certain energy facility disputes than the court system. Mediation has the fundamental advantages of conduciveness to compromise and to discussion of genuine issues, and an ability to accommodate numerous parties and issues efficiently.22/

Not all disputes are susceptible to the technique. The American Management Systems study concluded that energy disputes most suitable for mediation are those where the "basic need for an energy facility in a specific locality is agreed upon" but "the best location for the facility"

20/ Cormick, Gerald and Neal Patton, Office of Environmental Mediation, Institute of Environmental Sciences, University of Washington.

21/ Arbitration Association, Clark McGlennon Associates, Inc., Perspectives on Adapting Mediation to an Environmental Context, pp. 5-21. National Park Service Workshop on Mediation, Spring 1979.

22/ American Management Systems, Inc., The Potential of Mediation for Resolving Environmental Disputes Related to Energy Facilities, Dec. 1979.

is at issue. Disputes involving national policy issues were determined to be generally unsuitable for mediation because of the difficulty of implementing an agreement at the local level.

The DOE study found that the Federal government, should it elect to promote expanded use of mediation in energy facility disputes, ought to do so either through a coalition of agencies or through the Federal Regional Councils. Financial support by a single agency, such as DOE or EPA, would be inappropriate because it could jeopardize the impartiality of the mediation process.

The study also included findings of consultant interviews with environmental organizations. For the most part the environmental groups were receptive to participation in mediation efforts, if certain basic conditions were met regarding resource requirements and procedures used. Environmental groups stated that they would need financial assistance in order to participate and that it should be provided in a way that would preserve their independence and the impartiality of the mediator. Good faith bargaining by all parties and confidential proceedings were also among the conditions desired by environmental groups.

a. An example of sucessful mediation: The Brayton Point coal conversion

Environmental mediation is a newly developing process and skill. Although experience is still rather limited, especially with regard to energy-related environmental disputes, there have been a few successful cases. The following are excerpts from a case study included in the American Management Systems Study performed for DOE regarding the conversion of an oil-burning power plant to coal in response to national energy policy.

Background. The Brayton Point power plant, located on the southern shore of Massachusetts and owned by the New England Power Company (NEPCO), is the largest fossil-fuel powered electric generating plant in New England. The plant consists of four boiler units, all of which were originally designed to burn residual oil.

NEPCO found itself in a quandary in May 1977, when the Federal Energy Administration (FEA) sent a Notice of Intent to issue a Prohibition Order under §2 of the Energy Supply and Environmental Coordination Act of 1974 (ESECA).23/ This notice required the plant to convert to coal or shut down. At this point, the parties agreed to begin a mediation process as soon as possible.

Nature of the Dispute: While all the parties involved in this case agreed on basic policy issues (i.e., the need for efficient energy production, environmental protection, and decreasing national and regional dependence on foreign sources of fuel), several critical disagreements

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23/ 15 USC 792.

existed concerning how these objectives should be balanced. NEPCO did not challenge FEA's policy that the plant would eventually have to convert to coal; it was the schedule of the conversion that remained to be resolved. Both NEPCO and FEA were opposed to requiring that costly and sophisticated flue gas desulfurization equipment be installed, since it would slow the conversion process considerably. EPA and the Massachusetts Department of Environmental Quality Engineering (DEQE), on the other hand, were unwilling to let the plant violate emission limitations contained in the State Implementation Plan.

Parties Involved: Five parties were disputants in the Brayton Point mediation process: (1) NEPCO; (2) Region I of the EPA, (3) Region I of the FEA, 24/ (4) Commonwealth of Massachusetts DEQE, and (5) Massachusetts Energy Office. The Director of the Massachusetts Science and Technology Foundation also participated. The mediator, who was affiliated with the Center for Energy Policy in Boston, brought the total number of direct participants to seven.

Mediation Process: The mediation process, begun in May 1977, continued for eleven months. Eighteen meetings were held with the entire group. The mediator also held several private meetings with some of the parties to hear their candid opinions, suggest compromise positions, and help them prepare for discussions at the group meetings.

The mediation process consisted of three phases. First, the parties agreed to an agenda. For the next several months, the group focused on technical and quantitative analyses. The process culminated with bilateral negotiations between NEPCO and DEQE during early 1978, which established the form, level, and duration of new particulate and sulfur emission standards for the plant. By March 15, 1978, NEPCO and DEQE had reached an agreement which they submitted to the entire group. The group examined and approved the proposal in 3 meetings over a 2-month period. In June, DEQE conducted a public information meeting to present the plan and elicit public comment. The mediation process reached a formal conclusion in August 1978, when all parties signed the agreement in a ceremony presided over by Governor Dukakis. None of the parties has since attempted to challenge the terms of the agreement.

Significant Point: Because several parties were able to reach agreement on a number of complex and sensitive issues, the Brayton Point case is frequently cited as a model example of how mediation can be used successfully to resolve environmental disputes. Several significant points of this case can be identified to help generalize the Brayton Point experience to other mediation procedures involving energy facilities.

24/ Although during the course of the mediation process the FEA was absorbed in the Department of Energy, the same individual participated throughout.

-- All parties already were in basic agreement on fundamental policy issues when mediation began. Everyone agreed that eventual coal conversion was inevitable, that air pollution emissions had to be controlled somehow, and that pollution control equipment which was prohibitively expensive had to be avoided since it would force NEPCO to shut down the three older units at Brayton Point. However, the precise timing, cost, and environmental impact of the coal conversion remained to be determined.

-- Mediation was begun at a time when the issues were fairly clear and each party's basic objectives were known to the other parties. The conflict had reached an impasse. The potential participants hoped that group negotiation would be more successful than a series of separate attempts to settle a group of interdependent bilaterial disputes.

-- The mediator maintained flexibility throughout the process. While the entire group attended sessions on overall policy and matters of interest to everyone, smaller bilateral meetings were used, where appropriate, to address more specific technical issues.

-- Due to the general agreement on fundamental policy issues existing at the outset of mediation and the urgency imposed by the FEA Notice of Intent, none of the parties attempted to delay or unnecessarily extend the process.

-- Although no public interest or environmental group was a formal party to the mediation process, several hearings and public meetings were held during and after the negotiations to ensure public acceptance of the agreements that were reached. These communications helped the parties reach a settlement which was politically, as well as technically and financially, feasible.

The overall result and benefit of the Brayton Point mediation process is that the course of action agreed upon was acceptable to all parties because it incorporated consideration of their individual viewpoints. Such a conclusion could not have been reached through a court proceeding. The flexibility of the mediation process permitted the mediator to find a course of action that had not been foreseen or proposed by any of the parties to the conflict but was acceptable to all and has been followed without further conflict.

b. Potential mediation mechanisms

To date there has been no established Federal mechanism for mediating environmental disputes. Recent developments provide two mechanisms that could be applied to energy facility siting conflicts. One is set forth in the new CEQ regulations to implement procedural requirements of NEPA. The other is established by the recently enacted Dispute Resolution Act of 1980.

The new CEQ regulations implementing NEPA provide a standard procedure for any Federal agency to refer an Environmental Impact Statement dispute to CEQ for mediation. Although CEQ has no decisionmaking authority and cannot overrule an agency, its formal designation as a mediator in interagency disputes provides a forum and potential service. More specifically, the regulations establish procedures for referring Federal interagency disagreements concerning proposed major Federal actions that might cause unsatisfactory environmental effects:

> Environmental referrals should be made to the Council only after concerted, timely (as early as possible in the process), but unsuccessful attempts to resolve differences with the lead agency. In determining what environmental objections to the matter are appropriate to refer to the Council, an agency should weigh potential adverse environmental impacts, considering:
>
> (a) Possible violation of national environmental standards or policies
> (b) Severity
> (c) Geographical scope
> (d) Duration
> (e) Importance as precedents
> (f) Availability of environmentally preferred alternatives

The Council may initiate discussions with the agencies involved with the objective of mediating disputes between referring and lead agencies.25/ The Council is directed to take no longer than 60 days to complete mediation. 26/

The second newly established conflict resolution mechanism is created by the Dispute Resolution Act of 1980. The primary purpose of the Act is to "assist the States and other interested parties in providing to all persons convenient access to dispute resolution mechanisms which are effective, fair, inexpensive and expeditious."27/ The legislation encourages experimentation and development of a wide variety of mechanisms, such as a community or agency-based forum using techniques such as conciliation, mediation, arbitration or other similar procedures.28/ The Act establishes a Dispute Resolution Resource Center in the Department of Justice which:

25/ 40 CFR 1504.2 and 1504.3(f)(2).

26/ 40 CFR 1504.3(g).

27/ P.L. 96-190, Section 2(b).

28/ P.L. 96-190, Section 3(b).

(1) serves as a national clearinghouse for the exchange of information concerning the improvement of existing dispute resolution mechanisms and the establishment of new dispute resolution mechanisms;

(2) provides technical assistance to state and local governments and to grant recipients to improve existing dispute resolution mechanisms; and

(3) makes grants to, or enters into contracts with public agencies, institutions of higher education and qualified persons to conduct research, demonstration, or special projects. 29/

The Act authorizes $15 million per year for fiscal years 1981 through 1984 for grants to states, localities, and nonprofit organizations to stimulate the development of improved and new conflict resolution mechanisms.

Although the legislation was designed primarily for consumer disputes, Senate colloquy on the bill indicates that the coverage could be expanded to include environmental disputes. Thus, the mechanisms established through funding authorized by the Act could provide an opportunity for using environmental mediation to resolve siting conflicts.

Recommendation:

1. CEQ should assess the potential for using state and local mechanisms funded through the Dispute Resolution Act of 1980 for resolving environmental disputes. It should then define the relationship, if any, between that mechanism and the NEPA mediation authority and provide guidance on use of the two processes.

2. Federal agencies, through the Federal Regional Councils, should fund training and licensing for environmental mediators, undertake pilot mediation projects, and provide educational services and technical assistance. The training and licensing for the mediators could be pursued through the state and local mechanisms established through funding from the Dispute Resolution Act of 1980, thus encouraging them to include environmental and energy-related dispute resolution in their services.

29/ PL 96-190, Section 6(b).

II. Accelerated Coal Utilization Program

A. Program Description

The President's National Energy Plan of April 1977 recommended energy conservation and increased use of our plentiful coal resources as measures to reduce the United States' dependence on foreign oil and to stretch out the world's supply of oil and gas for uses other than boiler fuel. The plan states that:

> Coal constitutes 90 percent of U.S. conventional energy reserves, but currently supplies only 18 percent of energy consumption. It is generally acknowledged that the coal industry can expand production significantly, and currently has a small amount of excess capacity. Full utilization of America's coal resources has been hindered principally by constraints on demand, rather than by lack of supply.30/

The Plan contains a specific 1985 goal of increasing annual U.S. coal extraction by more than two-thirds, to over one billion tons. The President's July 15, 1979 energy message established a 1990 objective of displacing, through use of alternate fuels, half of the current 1.5 million barrels of oil per day consumed by electric utility powerplants.

Increased coal utilization could affect coastal resources through siting of new coal-burning powerplants and other industrial facilities in the coastal zone, conversion of existing coastal powerplants and industrial facilities from oil to coal, and export of coal from U.S. ports to other nations. Location of new coal burning powerplants in the coastal zone is expected to be minimal since competition with other uses for coastal sites and the sensitivity of coastal natural resources provide incentives for utilities to seek other locations. Thus, major coastal impacts of accelerated coal utilization will probably be associated largely with conversion of existing powerplants from oil to coal and with increases in coal exports.

1. Conversion of Powerplants from Oil to Coal

The latest statutory mandate to spur conversion of existing powerplants and other industrial facilities from oil and gas to coal and alternate fuels is the Powerplant and Industrial Fuel Use Act of 1978 (FUA), (42 U.S.C. §§8301 et seq).

The Powerplant and Industrial Fuel Use Act prohibits the use of petroleum and natural gas in new electric powerplants and industrial installations and prohibits the use of natural gas in existing powerplants in 1990 or thereafter. It also prohibits the construction of new electric powerplants without the capability to use coal or another alternate fuel.

30/ National Energy Plan, Executive Office of the President, April 29, 1977, p. 63; cited in the legislative history of the Powerplant and Industrial Fuel Act of 1978, 1978 U.S.C.C.A.N. 8217.

The FUA also grants DOE the authority to issue orders prohibiting the use of petroleum or natural gas in specific existing powerplants and industrial units. To do this, DOE must make certain findings regarding the technical capability of the unit to burn coal or an alternate fuel and the financial feasibility of the conversion.

FUA provides for temporary and permanent exemptions from statutory as well as discretionary prohibitions. Exemptions may be granted where the petitioner demonstrates that certain physical, economic, environmental, legal, or other factors preclude the use of an alternate fuel or mixture. Administration of the FUA, including issuance of prohibition orders, ruling on petitions for exemptions, and enforcement, is the responsibility of the Economic Regulatory Administration (ERA) of the DOE.

More than 60 orders have been issued under the Fuel Use Act. Congress has considered legislation (generally referred to as the "oil backout bill") to accelerate the displacement of oil and gas. 31/ This legislation died in the 96th Congress and may be reintroduced in the 97th Congress.

Of the 80 powerplant units identified as candidates for coal conversion under the proposed "oil backout" legislation, 50 are located in coastal counties. The figures for total conversions, coastal conversions, and coastal conversions in states with Federally approved coastal zone management programs are presented in Table 2.

Most of these large coal conversions will take place in coastal areas of the Atlantic and Great Lakes regions. In addition, numerous conversions of smaller, nonutility industrial facilities will occur in coastal regions. (Most of the facilities receiving prohibition orders, burned coal as their primary fuel and converted to oil to reduce costs when imported petroleum was inexpensive and to reduce air pollution emissions to meet requirements of the Clean Air Act.) Many existing and new facilities which are not subject to prohibition under the FUA will nonetheless use coal because of its increasing economic attractiveness compared to oil and gas.

2. Export

The Energy Information Administration of the DOE projects an increase of U.S. annual net coal export from 38 million tons in 1978 to 118-163 million tons in 1985. 32/ The benefits that would accrue from increased export of coal are improvements in the Nation's balance of payments, increase in the global availability of oil by partial displacement with U.S. coal, and stimulation of domestic production with immediate export demand while methods and facilities for domestic use grow more slowly.

31/ The proposed legislation for oil and gas displacement in the electric utility sector provides for expedited conversion orders and financial support for conversion. H.R. 6930, sponsored by Congressman Staggers, and S. 2470, sponsored by Senator Ford.

32/ These figures were provided by DOE in its December 26, 1980, comments on the draft report and show a substantial increase over figures published by DOE in June 1980.

TABLE 2

Proposed Coal Conversions in Coastal Areas

	Stations	Units	Rated Capacity Megawatts
Total Conversions *	38	80	16,865
Total Coastal Conversions **	24	50	9,324
Total Coastal Conversions Now Under CZMA ***	10	23	1,887
Coastal as % of Total	63%	61%	55%
Coastal Under CZMA as % of Total	26%	28%	11%

*Identified in S. 2470 (June 24, 1980). These plants have all been identified by DOE as potential conversion candidates under the Fuel Use Act even if the oil backout legislation is not enacted. Table 3 gives the location of these proposed conversions by state.

**Located in a coastal county. See U.S. Department of Energy, Inventory of Power Plants in the United States (March 1979), (June 1980).

***Located in a state with an approved state coastal zone management program. See Table 3 as of October 1, 1980.

TABLE 3

Location of Proposed Coal Conversions by State

State	CZMA Approval As of 10/1/80	Coastal Units	Coastal MWe	Non-Coastal Units	Non-Coastal MWe
Connecticut	Yes	9	1,431	--	--
Maine	Yes	3	99	--	--
Massachusetts	Yes	8	2,127	5	687
New Hampshire		3	150	--	-Yes
Rhode Island	Yes	--	--	1	62
New York		15	4,522	11	1,369
New Jersey	Yes	10	1,834	--	--
Pennsylvania	Yes	--	--	3	561
Delaware	Yes	4	392	--	--
Maryland	Yes	8	2,040	--	--
Virginia		6	1,026	6	1,707
Georgia		2	125	1	163
Florida		4	616	--	--
Alabama	Yes	--	--	4	2,245
Illinois		--	--	?	1,040
Michigan	Yes	2	641	--	--
	TOTAL	74	15,003	33	7,864
Total in CZMA Approved States		44	8,576		

A number of countries have expressed both interest in purchasing increased quantities of steam coal from the United States and concern about the capability of the U.S. transportation system to handle substantial increases in the volume of exports. A recent draft report on Moving U.S. Coal to Export Markets, prepared by the COE, MARAD, DOE and DOT, identified a number of impediments to increasing coal exports including the shallow depths of east and Gulf coast ports, congestion at the current major export ports and lack of adequate ground storage capacity at ports.

3. Impact of Accelerated Coal Utilization on Coastal Resources

Coal is harder to handle and is dirtier in combustion than either oil or natural gas. According to the Rall Report, these factors were responsible for coal's decline as a proportion of the total U.S. energy use from 80 percent in 1920 to 18.5 percent in 1976. U.S. consumption of coal in 1978 was 431 million tons by electric utilities (77 percent), 71 million tons for metallurgical coke production (11 percent), and 73 million tons for other industrial use, including small amounts of residential, commercial, and transportation use (12 percent). 33/

The coal cycle can be divided into the following stages: production (mining), transportation, storage, combustion, and waste product disposal. Coal is not presently mined in any coastal area of the U.S.; problems associated with coal mining are not, therefore, within the scope of this part of the Federal Coastal Programs Review. Coal transportation effects on coastal resources are most significant for waterborne transportation in coastal waters. The prime example of this is the increasing volume of low sulphur western coal shipped on the Great Lakes to utilities in the midwest, with a likely future expansion of shipments to the Atlantic states and for export. 34/ The primary effects are those generally associated with navigation in restricted areas, such as shore erosion and the water quality effects of dredging. There are also environmental effects resulting from port expansion and use of land transportation in coastal regions. Effects of combustion and waste disposal are dealt with in Part B.

Use of coal necessitates storage of large volumes of coal, both in transportation and at consumption facilities, many of which are in coastal areas. Large scale coal storage and combustion can produce impacts through air pollution (particulates, sulphur dioxide, nitrogen oxide) and water pollution (thermal effects, toxic runoff, and leachate). These effects are discussed in greater detail.

33/ Report of the Committee on Health and Environmental Effects of Increased Coal Utilization. Dr. Daniel P. Rall, Chairman, 1979. See also, FUA legislative history, 1978 U.S.C.C.A.N. 8177.

34/ Lewis, Leslie B., et al, Western Coal Shipment on the Great Lakes: Background and Research Needs, Argonne National Laboratory, October 1977.

B. Conclusions and Recommendations

1. Coastal Impacts of Coal Transportation and Storage

Increased transport of coal to meet national objectives for the use and export of coal, and expansion of the national transportation system to accommodate the increase, will have significant environmental impacts on coastal areas. These impacts include those associated with the need to maintain a national waterway system as well as effects peculiar to the Great Lakes region.

a. Waterborne transportation.

The national policy of increased coal utilization and export and the increasing economic attractiveness of coal are producing a sharp rise in overall coal transportation. The Energy Information Administration reported a 5 percent annual growth rate of coal transportation in 1978 and projected that the rate could increase to 7 percent per year by 1985.

For example, the Detroit Edison Co. has a major coal-fired powerplant on the St. Clair River between Lake Huron and Lake St. Clair. 35/ Detroit Edison is building another large coal powerplant, the 1350 MWe Belle River plant, one mile inland from the St. Clair River. The two Belle River units are scheduled for operation in 1984 and 1985. They will use the St. Clair plant's coal dock. By 1985 Detroit Edison expects to receive a combined annual total of 8 million tons of coal for these two plants.

A major transshipment center for western coal is the Superior Midwest Energy Terminal in Superior, Wisconsin, at the western end of Lake Superior. Coal is received by unit train from western mines and loaded onto large colliers or barges for lake shipment, e.g., to Detroit Edison. The Superior facility expects to transship 7.4 million tons of coal annually by 1985. The remaining 5 million tons comes by rail from Appalachia.

The major U.S. port for coal exports is Hampton Roads, Virginia, where Appalachian coal arrives by train to Norfolk and Newport News for loading onto colliers.36/ Total loadings for 1980, 95 percent of which is for export, are projected to reach 90 million tons, compared with 66 million in 1979. Baltimore, Maryland, is seeking a major share of the export business with expansion of one existing export facility and conversion of an existing pier to a coal loading facility with a capacity of 10-12 million tons per year. Major coal ports in the Gulf of Mexico are Mobile, Alabama, and New Orleans, Louisiana. Future export of western coal to Japan is expected in Los Angeles/Long Beach, California; Astoria, Oregon; Puget Sound, Washington; and possibly a port in Alaska.

35/ The St. Clair powerplant has seven major units with a total capacity of 1900 MWe. One unit of 353 MWe now burns residual fuel oil and may be converted to coal. The other units have switched from Appalachian and midwestern coal to western coal brought in by water to an expanded shore unloading facility.

36/ "Hampton Roads: Catching Up to the Coal Boom," New York Times, August 24, 1980, section 3, p.1.

Major coastal effects of the expanded port facilities needed for coal transportation arise from the associated land use and air and water pollution. Coal trains and coal storage and handling produce coal dust and emissions from spontaneous combustion. These can be reduced by spray systems, compacting storage piles, enclosed railroad car "dumper houses," and enclosed self-loading and unloading cargo ships. Short-haul truck transportation could produce coastal road damage. Trucks, trains, port activities, and ship movements produce noise with adverse effects on people and wildlife. Coal port and unloading facilities require significant coastal land (hundreds of acres) for storage and handling. Planning is now underway on a national scale to assess the demands for expansion of a transportation system capacity to handle the anticipated increase associated with meeting national goals for coal use and export.

Transportation system siting and management, similar to the energy facility siting process described in Part I, is mainly controlled by the private sector and by state and local governments. An exception is the responsibility granted to the Army Corps of Engineers to maintain the Nation's waterway system. Section 158 of the Water Resources Development Act of 1976 directed the COE's Institute of Water Resources to undertake a navigation-oriented study of the Nation's waterways. The Study focuses on the projected demand for water transportation, the capacity of the waterways, the improvements and developments required to meet the Nation's transportation needs, and alternative and conflicting uses of the waterways.37/

The National Waterways Study contains much valuable technical information on the transportation industry, including the coal sector. The study identifies maintenance dredging, subaqueous dredged disposal, and general navigation impacts, including spills, as major water quality and aquatic habitat impacts associated with waterways. Dredging and subaqueous dredged material disposal are major recurring maintenance activities directed toward the preservation of open channel navigation. Major issues raised by these activities include large increases in suspended sediment, increased turbidity, decreased dissolved oxygen, and the general disruption of the benthic habitat. One area not well documented in the literature concerns impacts to subtidal populations. The impacts of dredging and disposal on the highly productive intertidal areas of estuaries are extremely important and generally overlooked due to the failure of normal benthic sampling devises to sample adequately subtidal communities. 38/

37/ Dietz, Arlene, et al, "National Waterways Study," U.S. Army Corps of Engineers, Water Spectrum, Fall 1979.

38/ Kearny, A. T. Inc., Data Resources Inc. and Louis Berger and Associates, Analysis of Environmental Aspects of Waterways Navigation: Element M of the (COE) National Waterways Study, Review Draft, April 1980, page 41.

The COE notes that "major problems were encountered in assessing the environmental constraints to dredging and disposal activities." 39/ These problems were a direct result of the general weaknesses present in the data. The study found that the EISs did not address the technical aspects of dredging as they relate to environmental considerations nor did they present alternative methods for possibly reducing dredged material quantities. The study notes that mitigation measures which could be used to lessen the impacts associated with dredged material disposal are not widely employed. 40/ Examples of such measures include selection of sites which are not ecologically critical, use of dredged material in a way that may create new wildlife habitat through berming and other techniques, and use of dredge material as a substrate for landfill and construction. The COE also identified a need for better control over operators and refinements in the use of dredging machinery in defining mitigation strategies. 41/

Although the National Waterways Study identifies impacts of increased dredging and dredge spoil disposal associated with increased coal transport and also points out the general lack of attention to mitigation of environmental impacts, the findings of the study are not binding and, therefore, do not necessarily have an action forcing effect.

The interagency study of coal exports cited on page 184 reports that existing channel depths at east and Gulf coast ports are 40-45 feet and restrict vessel size to a maximum of 75,000 deadweight tons. Although port deepening has been authorized or is under study for Hampton Roads, Baltimore, Mobile, New Orleans, and New York, the study found that:

> Dredged material disposal is the most prevalent problem currently experienced at U.S. harbors with respect to the maintenance and improvement of channels and related berthing and anchorage areas and turning basins. Existing disposal areas are near capacity at many harbor locations as a result of past improvements and existing maintenance programs. New disposal locations which meet both economic and environmental requirements are difficult to find. The disposal of massive amounts of dredged material associated with further harbor deepening has been identi ed as a major constraint to further harbor improvements. 42/

39/ Ibid. page 9.

40/ Ibid. p. 5.

41/ Ibid. p. 54.

42/ Department of the Army Corps of Engineers, et al. Moving U.S. Coal to Export Markets: An Assessment of the Transportation System's Capability to Handle Future Coal Traffic, June 1980, p. S-15.

Recommendation:

The COE should undertake the development of a programmatic EIS focused on coal transportation that would include mitigation procedures for waterway maintenance dredging and port deepening programs under its authority. The programmatic EIS could be developed as regional program documents which would then provide a basis for tiering for site specific project documents.

b. Great Lakes Navigation

(i). Increased coal shipments -- The major coastal impacts of navigation (in contrast to port and storage facilities) for coal transport occur in the Great Lakes region. Movement of coal on the Great Lakes decreased from a high of 60 million tons in 1948 to 35 million tons in 1974. Coal movement increased to about 40 million tons in 1978. Great Lakes coal shipments are projected to increase to as much as 135 million tons annually by 2000. 43/ Most of this large volume of coal-generated traffic passes through the narrow Great Lakes ports, locks, and interlake waterways.

Coastal zone impacts from navigation include:

-- shoreline losses; i.e., erosion from vessel passage in narrow channels;

-- resuspension of bottom sediments by vessel traffic and dredging operations causing turbidity and reintroduction of toxic materials and biochemical oxygen demand to the aquatic environment;

-- contribution to effects of increased dredging and port and lock expansion;

-- disruption of wildlife reproduction and migratory patterns by noise; and

-- discharge of bilge, ballast, sanitary waste, and rinsewater causing turbidity and acidity from coal dust.

Most of these impacts are common to all shipping; coal's impact is proportionate to its traffic volume. Expanded coal navigation could increase the danger of collisions in critical areas. On the other hand, it should be noted that coal is environmentally less damaging than oil if there is a spill or sinking. Coal contains hydrocarbons, ash and trace metals which may leak out in the event of a spill. However, in contrast to oil, it eventually sinks to the bottom, is buried, and becomes relatively harmless.

43/ "Great Lakes Coal Transshipment," Michigan Coastal Energy Impact Program, undated (c., January 1980), p. 1.

Under authorities provided in the Ports and Tanker Safety Act of 1978 44/ the Coast Guard establishes, operates, and maintains vessel traffic services and systems for congested waterways and ports and controls vessel traffic in hazardous areas and under hazardous conditions. These systems are part of an overall program designed to protect the navigable waters and the resources therein from environmental harm resulting from vessel or structure damage. In addition, the Coast Guard investigates any incident, accident or act involving the loss or destruction of, or damage to, any structure subject to the requirements of the Ports and Waterways Safety Act, 45/ and assesses and collects civil penalties, and recommends criminal prosecutions in appropriate cases. Vigorous enforcement of safety regulations can help to minimize the environmental risks of increased traffic volume associated with increased coal shipment.

A second source of efforts to minimize environmental harm from increased coal transportation is NOAA's coastal energy impact program (CEIP), established in 1976 as Section 308 of the Coastal Zone Management Act to assist states to plan for and mitigate the social, environmental, and economic impacts of coastal energy activities, including the transfer, transportation or storage of fossil fuels. In October 1980, Section 308 was amended to authorize grants "to prevent, reduce, or ameliorate any unavoidable loss in such state's coastal zone of any valuable environmental or recreational resource, if such loss results from the transportation, transfer, or storage of coal (Section 308(c) (3)). Although new, this section offers promise of a significant tool to assist states to minimize the adverse impact of increased coal activities in the Great Lakes.

Recommendation:

1. The Coast Guard should step up its regulatory and enforcement program under the authority of the Ports and Tanker Safety Act of 1978, 33 U.S.C. §1223(a), to minimize the adverse environmental impacts of coastal navigation. Such measures should include enforcement of the speed limits set forth in 33 C.F.R. Part 162 and regulation of vessel positions to ensure that they stay in channels to reduce sediment resuspension and the need for dredging. 46/

44/ 33 USC 1221.

45/ 33 USC 1223.

46/ These measures are part of the COE's plan to mitigate the impacts of winter navigation:

> In addition, preventive measures that can be taken to reduce shore erosion are an important element in plans to minimize the negative effects of an extended navigation season. Federal protection of environmentally high-risk areas, vessel speed control, vessel route regulations, and the regulations of vessel movement through unstable ice fields are viable ways of sharing the responsibility for minimizing negative effects associated with shore erosion and shore structure damage.
>
> Final Survey Study, n. 13, above, p. 118.

2. Section 308(c)(3) should be funded at a level adequate to assist states to respond to the impacts of coal conversions and export activities.

(ii) Winter navigation -- In 1971, the COE began a program to demonstrate the feasibility of extending the winter navigation season in the Great Lakes. In March 1976 an Interim Feasibility Report recommended extending the navigation season on the upper four Great Lakes about six weeks, to January 31 (+ 2 weeks, depending on the severity of the winter). During the winter of 1979/80, the season was extended in accord with this recommendation. 47/ In January 1980, the COE submitted a survey study and EIS to the Board of Engineers for Rivers and Harbors on the proposed further extension of the winter navigation season of the entire Great Lakes and St. Lawrence system, with the above initial extension as the "no action" base condition. 48/

Extended winter navigation would have the economic benefits of:

-- making cheaper water transport available more of the year, possibly reducing shipping costs year-round by permitting recovery of vessel capital costs over an extended season;

-- reducing the size, cost, and environmental drawbacks of stockpiles of ore and coal necessitated by winter navigation closure at an uncertain, early date, as well as reducing vessel congestion by spreading coal and ore traffic volume over more of the year; and

-- reducing winter unemployment.

There are potentially grave, but largely unstudied, environmental impacts, including:

-- shore damage from increased ice floes and ice jams from icebreaking, as well as increased risk of flooding;

-- scouring of the bottom sediments due to increased dredging and propeller force, with adverse effects on the benthic community and fish behavior, spawning, and egg survival;

47/ The winter of 1979/80 was a mild one and may not provide an effective test of the system.

48/ Final Survey Study for Great Lakes and St. Lawrence Seaway Navigation Extension, Main Report and Final Environmental Impact Statement, Vol. 1, COE Detroit District, August 1979.

-- disruption of the migration of wildlife, recreation, and existing means of inland transportation; and

-- human and vessel safety problems in severe winter conditions, including possibly increased incidents of oil and hazardous spills resulting from overall increases in vessel traffic and congestion.

Extension of the winter navigation season has been a divisive issue among Federal agencies and Great Lake states. The States of Michigan and Wisconsin gave qualified support to the limited extension (to January 31) for the 1979-80 season only, subject to continuing environmental and economic studies and continuous monitoring for unacceptable damage, as well as mitigation and compensation. New York opposed winter navigation. The Great Lakes Basin Commission conducted an independent review of the winter navigation program limited to examination of the economic assumptions and conclusions of the COE survey study on season extension. The final report released in June 1979 concluded that the survey overstated certain benefits and costs while acknowledging that the high degree of uncertainty involved makes realistic estimates of costs and benefits difficult to develop. 49/ The study also concluded that there may be alternative ways, that the COE did not consider, to accomplish the same purpose of increasing transportation volume. The Department of the Interior's Fish and Wildlife Service (FWS) objected to proposing the January 31 extension as the "no action" alternative to be implemented in conjunction with the environmental study. 50/ Rather, the FWS proposed a two-stage project authorization, consisting of three years of baseline and impact studies

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49/ The Corps' Survey Study for Great Lakes-St. Lawrence Seaway Navigation Season Extension concludes that season extension will result in positive net economic benefits for the Nation. The Great Lakes Basin Commission's economic review of the Survey Study's findings concludes that stockpiling savings are overstated. Some elements of transportation rate savings are overstated, but since some stockpiling savings are shifted to this benefit category, a portion of transportation rate savings are understated. Winter rate savings may also be overstated. Uncertainty regarding several cost components, including ice-breakers, dredging, and environmental costs, made it impossible to determine actual total costs. The appropriate discount rate may not have been used to calculate the benefit-cost ratio. A definitive statement of the magnitude of the change in benefits and of the costs must await further investigation.

50/ Letter from Michael J. Spear, Associate Director, FWS, to Col. Albert C. Costanzo, Resident Member, Board of Engineers for Rivers and Harbors, March 26, 1980 and letter from Harvey K. Nelson, Regional Director, FWS Region 3, to Col. Robert V. Vermillion, District Engineer, COE Detroit District, March 7, 1980.

without any winter navigation extension, followed by evaluation and possible authorization of construction and operation for winter nagivation.

A forum for dealing with the differences of opinion among agencies and for defining appropriate means to mitigate potential environmental damage due to winter navigation activities is provided by the Winter Navigation Board, which consists of the COE, the Coast Guard, the State of Michigan, the Great Lakes Commission and representatives of labor and industry.51/ EPA, FWS, NOAA, and the Maritime Administration (MARAD) presently introduce their concerns through an advisory task force to the Board. Expanding the Board to include full representation of NOAA, EPA, FWS and MARAD would make it a more effective forum for exploring issues involved and resolving differences among Federal and state agencies.

Recommendations:

1. The COE should re-examine its economic cost/benefit analyses of winter navigation by including a more thorough analysis of environmental and recreational costs.

2. The COE should use the program EIS that it developed on the Winter Navigation and Associated Season Extension Program as a stepping-off point for development of environmental mitigation strategies on a site specific basis.

3. The Winter Navigation Board membership should be expanded to ensure full participation by NOAA, FWS, EPA and MARAD. The Board should closely monitor COE continuing analysis and demonstration project activities and recommend a course of action regarding the advisability of the season extension, appropriate length and geographic bounds, and appropriate mitigation measures to be employed.

2. Coastal Impacts of Combustion and Waste Products

The major present and future coastal users of coal are electric powerplants. Next are coastal industrial facilities, many of which will convert to coal for reasons of fuel cost even if not subject to an FUA conversion order. Many of these coastal industrial facilities are located near densely populated areas and are small in scale, which makes the relative cost of emission and effluent control high.

51/ Although the Board expired at the outset of COE authorization for the season, a new Interim Winter Navigation Board was established. This Board has continued to exist and is anticipated to be included in new season extension authorization. S. 703 which included this program died in the 96th Congress and is expected to be reintroduced in the 97th Congress.

To focus on the major coastal use, the following analysis is confined to combustion and pollution control methods used in state-of-the-art coal burning powerplants. In the future, new technologies such as fluidized bed combustion may become feasible on a necessarily large scale. This would reduce pollution problems and facilitate increased coal use. In the current combustion mode, the major air pollutants are particulates, nitrogen oxide (NO_x) and sulfur dioxide (SO_2). The main water quality problems are thermal pollution from once-through cooling or blowdown disposal from cooling towers, polluted waste water, and leaching and runoff from solid waste settling ponds and storage piles. Solid wastes include sludge from flue gas desulfurization, fly ash from electrostatic precipitators or bag houses, and bottom ash.

As shown in Table 2, (page 182) a majority of powerplant coal conversions will be in or near the coastal zone. Most of these are older plants in urban areas using coastal waters for cooling. Scientific uncertainty and controversy over the impacts of emissions anticipated to occur due to the coal conversion program are extensive, and degradation of sensitive coastal resources may occur.

a. Air Pollution

The major environmental drawback of increased coal use is the emission of combustion products and dust which escape control techniques. Many of the present and projected coal powerplants and industrial facilities are located in densely populated coastal areas. Thus, their emissions may present coastal health and aesthetic problems. Through long-range transport of pollutants, coal-burning facilities contribute to the regional and global problems of acid precipitation and atmospheric carbon dioxide increase (the "greenhouse effect") regardless of their location. These problems are considered below, with particular attention to effects on and implications for coastal resources.

(i) Localized effects of combustion emissions and fugitive dust -- Emissions of particulates (including fugitive dust), SO_2, NO_x (giving rise to photo-chemical oxidants; i.e., smog), organic carcinogens, and toxic trace elements give rise to direct health effects, act as irritants and cofactors to other ailments, and injure plants by reducing their growth and increasing their susceptibility to pests and herbivores. 52/ If best available control technology is applied to converting powerplants, it is projected that SO_2 and NO_x emissions will still increase over 1975 levels, although particulates will decrease. 53/ There will be continuing health and environmental impacts

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52/ For an excellent summary and balanced evaluation of the health and environmental impacts of coal use, see the Rall Report. For the topics of this subsection, see particulary the summaries of issues on: health impacts of gases and aerosols; ecological effects of gaseous emissions from coal combustion; trace elements and radionuclides; and carcinogens and cofactors.

53/ Rall Report. "Transport and Transformation of Gases and Aerosols," p. 1.

from increased coal use in densely populated industrial coastal areas where there are already air quality problems. A few proposed conversions are located in areas in which national ambient air quality standards have not been attained. However, the FUA requires that a prohibition order can be finalized only if all applicable environmental requirements, including mitigation measures in nonattainment areas, have been met.

Disposal of coal ash generates atmospheric dust, termed "fugitive" because it is not discharged to the atmosphere in a confined flow stream. No reliable emissions data exist for these sources. The potential impacts vary based on the physical characteristics of the ash, the disposal methods, and the climatological characteristics of the area. The dust generation process is comprised of two basic physical phenomena: pulverization and abrasion of surface material by the application of mechanical force during the disposal operation (loading, transporting, dumping), and entrainment of dust particles by the action of turbulent air currents. The air pollution impact of fugitive dust from coal ash disposal depends on the quantity and drift potential of dust particles emitted into the atmosphere. With prudent design and operation of disposal methods, coal ash disposal may be prevented from resulting in significant levels of fugitive dust. However, there are no national standards at present and no specific requirements governing disposal.

Recommendation:

EPA should develop and implement national standards for fugitive dust emissions.

(ii) Acid precipitation -- There has been increased attention in recent years to the adverse effects of the progressive acidification of rain and snow, particularly in large areas of the eastern United States and Canada, where the precipitation is quite acid (between 3ph and 5ph). 54/ This has produced acidification of poorly buffered lakes; e.g., in the Adirondacks, with severe loss of fish and plant life. One theory postulates that the major source of acid rain is fossil fuel combustion, particularly the SO_2 and NO_x produced by coal combustion and, to a lesser degree, by oil combustion. However, the long-range transport and atmospheric processes are complex, and debate is ongoing about the role played by fossil fuel combustion. 55/

Acid rain is not predominantly a coastal zone problem. Even in the Great Lakes, which are in the area of acid precipitation, the acidity is readily neutralized. There is some phosphorus in the rain which contributes to eutrophication of the Great Lakes and offsets progress made in reducing the load by

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54/ Ibid. "Ecological Effect of Gaseous Emissions from Coal Combustion," p.1.

55/ "Acid Precipitation: The Issue in Perspective," Edison Electric Institute, June 26, 1980.

upgrading sewage treatment plant effluent. Another coastal effect of acid rain is a decline of Atlantic salmon due to acidification of their spawning streams and lakes.

The interagency Acid Rain Coordination Committee, established by President Carter pursuant to his August 1979 Environmental Message, is preparing an acid rain assessment plan. As part of the Energy Security Act, 56/ Congress established an Acid Precipitation Task Force, with a $5 million annnual budget, to prepare a comprehensive acid precipitation research plan. This part of the FCPR defers to the recommendations of the Task Force.

(iii) Atmospheric carbon dioxide -- Atmospheric carbon dioxide has increased by about 15 percent during the industrial era (since 1860), largely due to combustion of fossil fuel. The trend of increasing atmospheric CO_2 will produce a global warming trend of unknown magnitude. Increased coal use may contribute disproportionately to this potential problem because, for a given energy output, coal combustion generates 80 percent more CO_2 than natural gas and 20 percent more than oil. 57/

The National Academy of Sciences (NAS) has recently released a report on carbon dioxide. 58/ The report theorizes that the general warming trend could eventually result in the melting of the West Antarctic Ice Sheet, which would raise the world sea level by 15-20 feet. The report also points out that coal is the fossil fuel of concern in coming decades due to its economic availability. This part of the FCPR endorses the NAS report's recommendations of further research and working toward international consensus and cooperation. Section 711 of the Energy Security Act establishes a $3 million study of atmospheric carbon dioxide directed by the Office of Science and Technology Policy.

(iv) Conversions and the NEPA process -- The Economic Regulatory Administration's Fuel Use Act regulations reference the overall DOE NEPA guidelines and the CEQ Regulations implementing NEPA. 59/ Section D of those guidelines classifies typical DOE actions as normally: (1) requiring neither environmental

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56/ P.L. 96-294, June 30, 1980.

57/ Rall Report, p. 10.

58/ Report of the Ad Hoc Panel on Economic and Social Aspects of Carbon Dioxide Increase, letter to Philip Handler, President of the NAS, April 18, 1980.

59/ "ERA believes that the guidelines which DPE has issued to comply with the National Environmental Policy Act of 1969 (NEPA) are complete and that further standards are unnecessary. Under the guidelines, the requirements for NEPA compliance are determined on a case-by-case basis." 45 Fed. Reg. 53683 (August 12, 1980).

assessments (EAs) nor EISs; (2) requiring EAs but not necessarily EISs; or (3) requiring EISs. The only actions listed under the FUA are granting or denial of certain FUA exemptions, which are put in the first category above. 60/ The ERA has completed one EIS pursuant to the coal conversion program for the Brayton Point Generating Station, discussed in the Part I section on conflict resolution, 61/ but environmental impact statements for numerous other FOA and ESECA conversions are in progress. Although not required by its NEPA regulations, the ERA is preparing a regional program EIS for the Northeast Region and will "tier" some of the issues covered in the regional EIS in site-specific EISs for each of the plants in that region receiving proposed prohibition orders. ERA anticipates the conversion program will require preparing site-specific EISs in nearly every instance. 62/

Recommendations

ERA should continue its plan of preparing site-specific EISs for coal conversions. Agencies with coastal interests should participate actively in the development of the ERA sponsored site-specific EISs for coal conversion of powerplants to assure that the environmental impacts are fully addressed.

b. Water Quality

Coal-fired powerplants have water quality effects in common with all thermal powerplants. The largest effect is from the necessary discharge of waste heat, either to a body of water by once-through cooling or through freshwater consumption and discharge in connection with cooling towers. Other impacts come from the discharge of blowdown (the water released from the system to avoid buildup of solids) and cleaning water. Since these effects are not peculiar to either coastal or coal-fired powerplants, they are not within the scope of this part of the FCPR and no evaluation of the present regulatory program administered by EPA has been undertaken. Other impacts with coastal effects include:

60/ 45 Fed. Reg. 20701 (March 28, 1980). These actions correspond to the statutory NEPA exceptions of Section 763 of the FUA, 42 U.S.C. §8473.

61/ "Coal Conversion Program, New England Power Co., Brayton Point Generating Station, Plants 1, 2, and 3, Somerset, Bristol County, Massachusetts," Final Environmental Impact Statement, DOE, September 1979. DOE's EIS on implementation of the FUA also indicates that NEPA will be applied to FUA actions on a case-by-case basis. The FUA includes certain exemptions from NEPA. However, NEPA documents will be prepared on a case-by-case basis, environmental reports will be required by petitioners, and environmental agencies will review exemption petitions. "Fuel Use Act," Final Environmental Impact Statement, DOE, April 1979, p. 1-1.

62/ Should an exemption action be contested, some level of NEPA documentation, from a finding of no significant impact to an EIS, will be provided.

(i) Airborne effects -- Water quality effects are also associated with airborne pollutants which land in coastal waters. Pollutants include fugitive coal dust and particulates and trace toxic elements from the plant stacks. The dust and particulates increase the turbidity of the receiving waters. Trace elements such as arsenic, cadmium, mercury, lead, fluorine, beryllium and radionuclides are taken up by aquatic micro-organisms. The elements are concentrated as they move up the food chain to eventual consumption by humans. These problems are similar to the water quality effects of disposal of coal-generated solid wastes, which are treated in the next section.

(ii) Coal effluent, runoff, and leachate -- When used with current air pollution control technology, coal use produces large volumes of solid wastes. 63/ Bottom ash is collected in ash transport water from the burner. Fly ash is collected dry in bag houses (large vacuum cleaners) or electrostatic precipitators. Particles and SO_2 are collected in scrubbers, using a limestone "throwaway" process which produces a sludge of a consistency similar to toothpaste.

Some of the ash is used for cement, asphalt, and road bed material. 64/ The rest is disposed of in landfills or kept in holding (slurry) ponds on the plant site. Sludge is not suitable for landfill because of its consistency and because it is anhydros; i.e., it reabsorbs water. Most sludge is kept on site, while some (inland) utilities pump sludge back into the mine. Stored solid waste presents the problems of leaching (into the ground) and runoff (disposal of excess liquid), which also occur with coal storage piles. Finally, there is a potential problem of disposal of coal slurry water with suspended particulates and dissolved contaminants. These effluents present problems of akalinity (fly ash, sludge), acidity (coal runoff), turbidity, chemical oxygen demand, and trace contamination of coastal waters.

Another water quality problem related to future coal transportation, is how to dispose of slurry water if coal is delivered by slurry pipeline. Extensive use of slurry pipelines could result in damaging inflows of freshwater to coastal estuarine systems. It may be possible to treat the excess water to make it suitable for cooling or boiler feedwater. At the least, some of the water could be recycled as spray to reduce fugitive coal dust.

A number of gaps exist in the current Federal agency programs that could address these problems. Although no funds have been appropriated yet, the Fuel Use Act provides for loans for air pollution control equipment needed to mitigate the air quality impacts of plant conversions. However, there is no such provision for financial support for water quality control measures.

63/ See EPA's "Environmental Impact Assessment Guidelines for New Source Fossil Fueled Steam Electric Generating Stations," EPA Office of Environmental Review, July 1979, for a brief summary of coal-fired powerplants' solid waste and its disposal; Section III.D., "State of the Art Technology: End of Process Controls, Solid Waste Disposal," p. 87.

64/ Ibid.

Waste and coal storage sites are subject to regulation under the Resource Conservation and Recovery Act of 1976 (RCRA). 65/ Coal waste disposal must comply with state solid waste management plans, which RCRA encourages by providing financial assistance if states meet minimum RCRA standards. 66/ Direct Federal prohibitions and enforcement apply only to wastes which EPA classifies as hazardous under Section 3001 of RCRA. EPA is undertaking a study of sludge (to determine whether it should be classified as hazardous) as mandated by Section 8002(g) of RCRA. Pending outcome of the study, Congress has explicitly defined "fly ash waste, bottom ash waste, slag waste, and flue gas emission control waste generated primarily from the combustion of coal or other fossil fuels" as not hazardous waste. 67/ Thus, they are not currently being regulated under Subtitle C of RCRA.

Accidental discharge of any of the liquids considered above -- pipeline coal slurries, sludge holding ponds, or ash pond liquors -- could create severe aquatic impacts. Although Section 311 of the Clean Water Act deals with spills, there are no EPA requirements on storage structures to minimize accidental discharges and to deal comprehensively with coal and waste leachate and runoff. It is therefore essential that the Economic Regulatory Administration's site-specific EISs on conversions evaluate mitigation measures to protect sensitive resources from these potential impacts. Such conditions would be consistent with FUA's requirement of consistency with applicable environmental requirements, 68/ including the environmental balancing of NEPA. 69/

65/ 42 U.S.C. 6901, et. seq.

66/ See EPA's procedural guidelines for state plans in 40 C.F.R. Part 256, 44 Fed. Reg. 45066 (July 31, 1979). The Federal criteria for acceptable waste disposal, i.e., sanitary landfills, pursuant to Section 4004 of RCRA, are in 40 C.F.R. Part 257, 44 Fed. Reg. 53438 (September 13, 1979). One general requirement is that the waste storage or disposal site not contaminate an underground drinking water source 40 C.F.R. §§ 257.3-4(a), 44 Fed. Reg. 53462 (Sept. 13, 1979).

67/ 40 C.F.R. § 261.4(b)(4), 45 Fed. Reg. 33120 (May 19, 1980).

68/ Congress required this consistency in the overall administration of the FUA, Section 102(b), and by requiring FUA exemptions to meet applicable environmental requirements.

69/ Section 103(17)(B) of the FUA.

Recommendations:

1. The Fuel Use Act provision for loans for air pollution control equipment (42 U.S.C. §8402) should be amended to include water pollution control measures and equipment.

2. EPA should expedite the sludge study being performed under RCRA and decide whether coal combustion and storage wastes are hazardous. If so, EPA should proceed promptly to establish regulatory measures.

3. ERA should include in the mitigation section of each site-specific coal conversion EIS requirements to protect coastal resources by guarding against accidental discharges of effluents from storage structures.

III. Outer Continental Shelf Oil And Gas Program

A. Program Description

During the last decade, the Federal Government has sought effective measures to reduce the Nation's growing dependence on imported petroleum. The Outer Continental Shelf (OCS) will be an increasingly important domestic source of oil and gas to supply national needs for energy. 70/ Until the 1973 Arab oil embargo, leasing was primarily limited to the Gulf of Mexico and California. The embargo was the catalyst for the Nixon administration's acceleration to 10 million acres a year and issuance of a schedule in November 1974 which proposed the leasing of all promising OCS areas by 1978. The prospect of oil and gas activity across the entire OCS generated a great deal of environmental concern, especially with regard to effects of activities in areas where oil and gas development has not yet occurred -- the so called "frontier areas." 71/

Although the direct economic and energy supply benefits to the Nation of OCS oil and gas production may be considerable, OCS development can result in disproportionate costs for adjacent coastal communities, damage to the marine environment and wildlife, and interference with other users of the offshore area. The burden of these "external" costs of OCS activity -- external to the traditional business accounting of expenses and receipts -- became an intensely political issue to those who may have to bear those costs. Indeed, the Santa Barbara oil spill, which occurred in January 1969, focused public attention on the risks of offshore oil development, and served as a catalyst for the environmental movement that emerged in the 1970's. 72/ In the face of possible risks posed by OCS development, potentially affected parties demanded participation in OCS decisionmaking to

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70/ U.S. Congress (House), Offshore Oil and Gas: The Five Year Leasing Program and Implementation of the Outer Continental Shelf Lands Act Amendments of 1978, a study prepared for the Select Committee on the Outer Continental Shelf, 96th Cong., 2nd session, (Washington, D.C.: GPO, 1980) page 2, (hereafter cited as "Offshore Oil and Gas").

71/ U.S. Department of Interior, Final Environmental Statement Proposed Five Year OCS Oil and Gas Lease Sale Schedule, March 1980-February 1985, undated, pages 34-93, (hereafter cited as "FES Five-Year Schedule").

72/ U.S. Congress (House), Effects of Offshore Oil and Natural Gas Development on the Coastal Zone, a study for the Ad Hoc Select Committee on Outer Continental Shelf, 94th Cong., 2nd session, (Washington, D.C.: GPO, 1976) pages 151-225. See also Katherine Gillman, Oil and Gas in Coastal Lands and Waters, a report by the Council on Environmental Quality, April 1977, pages 1-5.

avoid oil and gas development where they believed the risks were unacceptable 73/, as well as to develop vehicles for information exchange to support their planning efforts. Compensation was also sought in cases where losses from damage or interference actually resulted from oil and gas activity on the OCS. 74/

The basic Federal management system for the Outer Continental Shelf is set forth in the Outer Continental Shelf Lands Act (OCSLA) of 1953. 75/ In response to the proposed acceleration of OCS development and the attendant reaction of concern by a spectrum of potentially affected groups, the Congress enacted comprehensive amendments to the OCSLA in 1978. 76/ The amendments to the OCSLA clarified national policy for management of the Outer Continental Shelf, broadened the process of Federal decisionmaking to include consultations with state and local governments and other interested parties, mandated a program of comprehensive planning including supporting environmental research, and created measures to improve safety of OCS operations and to compensate fishermen for losses due to OCS development.

The primary policy objective of the Outer Continental Shelf Lands Act, as amended, (OCSLAA) is to manage the OCS in a manner that balances the need to expedite the development of domestic energy supplies with the need to protect the marine environment and coastal resources.77/ In June 1980 Secretary Andrus approved a 5-year OCS oil and gas leasing program under Section 18 of the OCSLAA. The program proposes sales to be held through June 1985 and establishes a planning and administrative process to implement the policies of the Act.

Federal management of the Outer Continental Shelf is set forth in an elaborate and complex system that incorporates features carefully designed to address important goals which were identified by the Congress

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73/ U.S. Congress (House), Final Report of the Activities of the Select Committee on the Outer Continental Shelf, House Report No. 96-1214, July 31, 1980 (Washington, D.C.: GPO, 1980), pages 5-7, (hereafter cited as "Final Report").

74/ Ibid.

75/ U.S. Congress (House), Report on the Activities of the Ad Hoc Select Committee on the Outer Continental Shelf, House Report 95-1835, 95th Cong., 2nd session (Washington, D.C.: GPO, 1979), pages 5-7, (hereafter cited as "Report on the Activities").

76/ Final Report, pages 13-52.

77/ P. L. 95-372, Sec. 18. See also, John M. Murphy and Martin H. Belsky, OCS Development: "A New Law and a New Beginning," Coastal Zone Management Journal, 7, No. 2-3-4, pages 297-337.

and the Executive Branch. The Secretary of the Interior is assigned central responsibility to administer the OCSLAA. The Secretary of the Interior is also required to consult with state government officials and interested citizen groups at various steps of the OCS management process. Successful implementation of OCSLAA demands considerable effort by the Department of the Interior, other Federal departments and agencies, 78/ and non-Federal agencies and groups. Congressional observers conclude that significant progress has been made in the implementation of the OCSLAA in the two years since the passage of the 1978 amendments. 79/ However, problems in the effective implementation of the OCS management system remain. For example, controversy surrounding the leasing in frontier areas has resulted in litigation. 80/

B. Conclusions and Recommendations

From the perspective of the President's national coastal protection policy, the Federal OCS Management System could benefit from certain improvements and adjustments identified during the Federal Coastal Programs Review. These improvements address opportunities to enhance protection of significant coastal resources especially living marine resources, increase predictability of administrative processes, and simplify government decisionmaking. Specific recommendations involve the following aspects of the Federal OCS Management Program:

-- information requirements for accelerated leasing in frontier areas;

-- environmental regulations for OCS production operations;

-- participation of interested parties in decisionmaking;

-- compatibility of OCS management with other continental shelf management systems; and

-- overall Federal OCS program coordination.

78/ Offshore Oil and Gas, pages 7-40.

79/ Final Report, pp. 98-133.

80/ Final Report, pages 57-63.

1. Information Requirements

Concern about accelerating OCS leasing in frontier areas while meeting goals of environmental protection programs provided the driving force behind reform of the OCS management system in 1978. 81/ Implementation of the OCSLAA requires a complex process of planning and sequential decisionmaking designed to weigh national energy needs and economic, environmental, and social factors delineated in the OCSLAA. Information about the potential effects of OCS oil and gas development on the marine environment and coastal resources is a prerequisite for balanced decisionmaking mandated by the OCSLAA and NEPA. 82/

Pursuant to the OSCLAA, the Department of the Interior has adopted procedures to plan and administer the 5-year OCS leasing program. These procedures, while comprehensive, have been difficult to implement. Individual leasing activities by DOI are governed by a 14-step decisionmaking process described in the "Blue Book". 83/ This process covers all phases of OCS development: prelease preparation; lease sale; postlease exploration, development and production planning; transportation and pipeline management; and termination of OCS operations. The DOI Bureau of Land Management has primary responsibility for implementing prelease preparations, granting rights-of-way, and conducting lease sales. To support its decisionmaking requirements for information about the possible effects of OCS development in specific regions, the BLM conducts a comprehensive Environmental Studies Program. 84/ The DOI U.S. Geological Survey is primarily responsible for prelease evaluation of areas proposed for leasing and postlease activity relating to regulation of exploratory drilling and any eventual oil and gas production. BLM and USGS are each assigned joint responsibility for the pipeline transportation systems to serve OCS production. BLM is responsible for permitting rights-of-way and USGS issues permits for rights of use.

During the brief period since the enactment of the new system for OCS management, practical experience with implementation of the system is limited to the adoption of the 5-year OCS oil and gas leasing program and prelease and exploratory drilling phases in several frontier areas. Development,

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81/ Report on the Activities, page 17.

82/ U.S. Department of Interior, Study Design for Resource Mangement Decisions: OCS Oil and Gas and the Environment (Washington, D.C.: GPO, 1978), pages 1-1 through 1-3, (hereafter cited as "Study Design").

83/ Study Design, Chapters 2 and 5.

84/ U.S. Department of Interior, Intergovernmental Planning Program for Oil and Gas Leasing, Transportation and Related Facilities, February 8, 1979 (Washington, D.C.: GPO, 1979), pages 1-9, (hereafter cited as "IPP").

production, and transportation phases have not yet occurred in frontier areas. The adequacy of information about the environmental and coastal risks of OCS leasing in frontier areas continues to be questioned by some governmental agencies and some private interest groups. 85/

The underlying problem of assuring the availability of sound environmental information to support the systematic OCS management process can be traced to the following constraints:

-- The science of marine ecology is not sufficiently advanced to permit predictions about cause/effect relationships.

The predictive capability of the relatively new field of marine ecology is less exact than some other sciences, owing to a smaller body of knowledge and less penetrable environments. Our knowledge increases with proximity to shorelines of temperate developed nations. However, we have not developed an adequate picture of the range of community structure and dynamic relationships and how these are determined by natural variability and anthropogenic factors. There needs to be a greatly increased research effort. The rate of accumulation of understanding about ecological processes in the sea is not keeping pace with the rate of change that may be induced in marine systems by human activities of both increasing variety and magnitude.

-- Marine environmental assessment requires diverse environmental, social, and economic data.

Many types of specific scientific, technological, economic, and social data required for assessment of the potential effects of OCS development in frontier areas are often not routinely collected by Federal agencies. As a method of applied scientific analysis, marine environmental assessment and decisionmaking requires diverse information for analysis of possible changes in the natural environment and associated costs of abatement or prevention which may occur as a result of OCS activities. In addition, much of the data which does exist is not usable due to a lack of uniformity in measurement and recording methodologies.

-- Limited operational experience with OCS oil and gas technologies in certain frontier areas precludes reliable forecasts of the environmental consequences of their use.

The safety, reliability, and environmental effects of OCS technologies are complex and difficult to forecast with any confidence in frontier

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85/ See generally U.S. Congress (House), OCS Oversight of 1978 Amendments, Parts 1-3, hearings before the Select Committee on the Outer Continental Shelf, 96th Congress, 1st session (Washington, D.C.: GPO, 1979).

areas where drilling experience is limited or nonexistent. Exploration of technological experience from offshore development in other countries can be very informative, but in the case of untried technologies that will be necessary for remote areas such as Arctic Alaska, the estimation of the effects of OCS development is extremely difficult. The effectiveness and reliability of procedures that are proposed to mitigate environmental damage are also difficult to estimate without practical experience in their application in the frontier environment.

-- Practical problems of research administration complicate the acquisition of timely and useful information.

The OCS management system requires environmental information that must be provided by various Federal agencies, other governmental agencies, and members of the scientific community. Although the Department of the Interior provides research support through its Environmental Studies Program, the programmatic participation of other Federal agencies to implement their OCSLAA and NEPA responsibilities is subject to competing priorities within each agency. With the current level of funding for environmental studies and the limited time permitted by the leasing schedule to conduct research, OCS managers have not always been able to obtain scientifically defensible information for leasing decisions. The logistics of field operations -- ships, equipment, and facilities -- are often difficult to schedule or employ with flexibility to serve a program with short deadlines, especially in areas where operations are limited by severe weather.

Although there are no simple or quick remedies for these constraints to acquisition of environmental information for OCS management in frontier areas, the following recommendations could lead to improved information for OCS decisionmaking.

a. Because important questions about the possible effects of OCS activities in frontier areas cannot be answered conclusively during the prelease decisionmaking process alone, increased emphasis should be placed on environmental research and monitoring during postlease phases to provide the basis for mid-course corrections and adjustments.

Although a number of steps in OCS management are the responsibility of units other than BLM, the BLM Environmental Studies Program is "mandated to serve all the steps" in the decision process, from tentative lease scheduling to OCS lease termination or expiration. The purpose of the Environmental Studies Program is to establish information needed for prediction, assessment, and management of impacts on the human, marine, and coastal environments of the Outer Continental Shelf and nearshore areas which may be affected by OCS oil and gas exploration and development. The program is designed to link information needs of the decisionmaker with the specific environmental studies to be conducted. This linkage between the decisions listed in the Secretary of the Interior's 5-year Schedule and the Environmental Studies Program is the result of an extensive redesign of the original program.

The Environmental Studies Program was initiated in 1973 by the Secretary of the Interior through a commitment to perform investigations of certain environmental features of the Gulf of Mexico before conducting a lease sale in that region. From that beginning, the program developed into a series of large scale, multidisciplinary benchmark studies. These studies were designed to provide information about the physical, chemical, biological, and geological conditions in the various lease areas. Impacts resulting from OCS oil and gas exploration and development would theoretically be evaluated in reference to conditions described in the benchmark studies.

In 1976, decisionmakers in the Department of the Interior began to recognize limitations in the benchmark program and requested the National Academy of Sciences to review the program. The review focused on the adequacy of the program to meet its objectives and the relevance of the information developed by the program in relation to the information needs of management. The Academy recommended that the benchmark studies program be terminated and that studies be redesigned and scheduled to provide relevant information to decisionmakers in a manner which would support the decisions on the 5-year schedule.

BLM redesigned the Environmental Studies Program in 1978. The current program guidance entitled Study Design for Resource Management Decisions: OCS Oil and Gas Development and the Environment defines the linkage between the studies and management decisions. The program guidance also identifies various levels of questions involved in management decisions. 86/ These questions concern the possible effects, costs, and mitigating measures of OCS development on commercial fishing, recreation, social infrastructure, marine and coastal ecosystems, air and water quality, restraints of the natural environment (e.g. geohazards), archaeological and cultural resources, and shipping.

In general, studies conducted under the Environmental Studies Program are proposed and implemented regionally. BLM's four OCS offices in New York, New Orleans, Los Angeles, and Anchorage, design studies to answer OCS management questions arising within their jurisdictions. Other interest groups and BLM advisory groups may make recommendations for studies. However, the final list of studies for the region is the responsibility of the BLM manager. The region's study recommendations are then sent to BLM's branch of Offshore Studies in Washington, D.C. This office is responsible for developing overall program strategy and for the budgeting and management of the Environmental Studies Program. The Branch of Offshore Studies also develops OCS environmental studies with national application.

86/ Study Design, Appendix 3.

The funding level necessary to support all of the environmental studies requested by the BLM OCS offices normally exceeds the annual program budget. BLM utilizes explicit criteria to establish ranking of project urgency. 87/ The primary criteria are the importance of the information from the study to the decisionmaker and the schedule upon which the study must be initiated to provide the information in a timely manner. The program guidance and the ranking criteria are integral parts of the current program. The four field offices determine regional priorities and the Branch of Offshore Studies establishes the National Study List.

During FY 1980, the Environmental Studies Program was funded at the level of $41 million, which supported nearly 100 field projects. 88/ Of these projects fewer than 10 were directed to monitoring studies of the actual effects of OCS operations 89/ although the National Academy of Sciences specifically called for more postlease studies of the effects of chronic low level pollutant inputs to the marine environment.

Although the BLM Environmental Studies Program is designed to answer key OCS questions affecting both prelease and postlease management decisions, the risks and consequences of OCS activities in frontier regions have not been answered to the satisfaction of many governmental agencies and citizen groups concerned with the protection of coastal resources as indicated by comments in Environmental Impact Statements for the 5-year Lease Program, 90/, individual lease sales 91/, testimony before the Congress, 92/, litigation over OCS decisions in New England, Alaska, and California, 93/ and findings

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87/ Memorandum to Committee on Ocean Pollution Research and Development and Monitoring from Chief, Branch of Offshore Studies, Bureau of Land Management, February 5, 1980.

88/ U.S. Department of Interior, Facsimile Message No. 114, "Implementation of Planning for BLM's FY 1981-1982 Environmental Studies Ranking Criteria," September 21, 1979.

89/ To date, most monitoring has been done at lessee expense pursuant to the stipulations and therefore beyond control of government sponsored environmental studies programs.

90/ FES Five-Year Schedule, pages 378-384, and Appendix 3.

91/ See Final Supplement to Environmental Statement, OCS Sale No. 42, undated, Chapter IX. Also, see Final Environmental Impact Statement, Beaufort Sea, Chapter IX, 1979.

92/ Final Report, pages 22-57.

93/ Final Report, pages 57-63.

of Federal agencies responsible for providing advice to the USGS supervisor concerning the implementation of the biological stipulation for lease sale 42.

Three biological task forces (BTFs) have been established by the Department of the Interior to advise the USGS's Deputy Conservation Managers. The Georges Bank BTF was created jointly by DOI, NOAA and EPA: to advise the Geological Survey's Oil and Gas Supervisor on those aspects of oil and gas operations resulting from lease sale 42 that affect biological resources on Georges Bank and their habitats, including the enforcement of stipulations relating to the protection of biological resources and habitats and the design of environmental studies and surveys, as well as periodic sampling of environmental conditions, to provide warnings of adverse impacts. 94/

The Task Force is comprised of representatives of BLM, the U. S. Fish and Wildlife Service, the Geological Survey, the Environmental Protection Agency, and the National Oceanic and Atmospheric Administration. Although the Georges Bank Biological Task Force Charter does not alter any of the OCS-related authorities or responsibilities of member agencies, it does provide a forum for mediation of agencies' concerns and a mechanism for developing technical advice and recommendations to the USGS on OCS activities. This mechanism can increase information about the site-specific environmental effects of OCS activities on Georges Bank, provide timely and responsive advice with respect to regulation of that OCS development. The charter does not extend to activities for the second Georges Bank lease sale 52. In the mid-Atlantic, a biological task force was established as a standing committee which will advise the Supervisor on the biological effect of all postlease oil and gas activities for the mid-Atlantic geographical area. The Beaufort Sea Task Force in Alaska was created to monitor all aspects of oil and gas operations which affect biological resources during the joint Federal/state Beaufort Sea lease sale.

Although the three BTFs vary in scope from a sale-specific orientation to addressing all operations over time for a region, the basic composition, purpose, and responsibilities of each group are the same.

Regional Technical Working Groups (RTWGs) serve a different function than the BTFs. The RTWGs were established primarily to serve as a coordinating mechanism between the states and DOI. Federal agencies are represented on the RTWGs, but do not have voting status. The RTWGs consider a broad range of technical issues from prelease tract selection to recommendations on

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94/ Charter, "Biological Task Force for OCS Lease Sale 42-Georges Bank," signed by James A. Joseph, Acting Secretary of Interior (October 9, 1979), Barbara Blum, Deputy Administrator, Environmental Protection Agency (October 25, 1979) and Richard A. Frank, Administrator, National Oceanic and Atmospheric Administration (October 3, 1979).

various transportation corridor alternatives. One important function of the RTWGs is the recommendation of regional and site-specific studies funded through the Environmental Studies Program.

The Scientific Advisory Committee (SAC) was established on a national level to advise the Secretary of the Interior on the feasibility, appropriateness and scientific value of the BLM OCS environmental studies program. The SAC may recommend changes in the scope and direction of the studies program and may evaluate the applicability of the data being produced. Information developed by the BTF on the fates and effects of discharges to the marine environment will prove useful to the RTWGs and the SAC in the development of their study recommendations. Carefully designed environmental studies, closely coordinated with oil and gas exploration in frontier areas, provide an excellent opportunity to assess the actual consequences of OCS activities on coastal and ocean resources.

While it is the responsibility of the USGS to enforce compliance with offshore oil and gas lease stipulations, the EPA, through NPDES permits,has the primary responsibility for establishing discharge restrictions for OCS operators. Guidelines for determing degradation of marine waters have recently been promulgated under Section 403(c) of the Clean Water Act by EPA. Under the guidelines, the EPA Regional Administrator must determine whether the discharge will cause unreasonable degradation of the marine environment. In making this determination, the Regional Administrator must consider the quantities, composition, and potential for bioaccumulation or persistence of pollutants to be discharged and the composition and vulnerability of biological communities which may be exposed to the pollutants. The BTF's studies and recommendations on offshore discharges is a potentially important source of information that EPA can use in the development of individual NPDES permits.

Recommendations:

1. The objectives and implementation of the BLM Environmental Studies Program should be modified to include an equivalent emphasis on environmental research that is conducted in conjunction with both prelease and postlease activities. This research should emphasize resource assessment for each area and provide thorough analyses of the effects of exploration, development and production on the marine resources at risk.

2. Biological Task Forces should be the primary mechanisms for Federal agencies to provide advice about the possible effects of OCS activity to DOI decisionmakers in areas of particular environmental sensitivity. Recommendations by the BTFs of needed studies and areas of special biological significance should be actively sought and given greater consideration by BLM and USGS in developing their OCS plans for leasing and development.

3. Organization of additional BTFs should be based upon the specific needs of each OCS region in response to major uncertainties about the environmental risks of OCS activity. BTFs could be established on a regional, rather than sale-specific basis. The North Atlantic and Beaufort Sea BTFs could be expanded to address future leasing activities in those regions.

Additional BTFs may also be needed to address concerns in the Bering Sea, Gulf of Alaska, Pacific Coast, Gulf of Mexico and the South Atlantic.

4. Biological Task Force recommendations should also advise EPA in the development of NPDES permits and NOAA regarding marine sanctuaries and biological opinions under the Endangered Species Act, where appropriate.

b. A management strategy should be adopted to "fine tune" regulatory measures based on actual experience in frontier areas to validate the presumed effectiveness of OCS lease stipulations and postlease orders designed to mitigate environmental damage in frontier areas.

Although the OCS management process is designed to avoid unacceptable risks to coastal resources, certain portions of OCS frontier areas are considered to have sufficiently favorable oil and gas potential to warrant the leasing even if some environmental risks are high. In order to reduce environmental risks or mitigate the probable harm of OCS activity in ecologically sensitive lease tracts, the Bureau of Land Management may specify regulatory stipulations as a condition of sale of lease rights. 95/ Stipulations may restrict actions of the lessee in such ways as identifying permissable periods for particular kinds of OCS activity to conform to seasonal variations in ecological vulnerability or closing tract areas for the use of certain offshore technologies. 96/

Designation of appropriate lease stipulations is an integral part of the analysis of alternative actions required by NEPA and stipulation options are presented in the Draft Environmental Impact Statement for the lease sale. The Draft Environmental Impact Statement may also consider existing orders and potential changes to postlease orders prepared by the USGS to regulate oil and gas activity of the lessee. USGS implements lease stipulations and OCS orders during the postlease phase.

OCS orders are but one regulatory instrument employed by the USGS to administer exploration and development operations on the OCS. The orders are developed on a regional basis to suit the conditions of the specific areas. OCS orders have been developed for the Atlantic, Pacific, Gulf of Mexico and Gulf of Alaska. Orders for the Alaskan Arctic OCS are being developed. Before a lessee can begin exploration, development, or production, the USGS must approve a plan for these activities. Exploration plans must describe the activities to be conducted and an environmental report assessing environmental impacts of proposed operations. An exploration plan may be approved only if it is determined that:

95/ FES Five-Year Schedule, page 8.

96/ See example, Final Environmental Impact Statement, Beaufort Sea, pages 308-352.

> Such exploration will not be unduly harmful to aquatic life in the area, result in pollution, create hazardous or unsafe conditions, unreasonably interfere with other uses of the area or disturb any site, structure, or object of historical or archaeological significance. 97/

Separate permits are required for exploratory drilling conducted within the framework of an approved exploration plan. All drilling (and production) operations in frontier areas must use the best available and safest technologies which the Secretary of the Interior determines to be economically feasible. 98/

OCS development and production plans must meet standards of protection to coastal resources similar to those for approval of exploration plans. 99/ In addition, the Secretary of the Interior may determine that the "advantages of disapproving the plan outweigh the advantages of development and production." 100/ Development and production plans for frontier areas require preparation of an environmental report and NEPA document. The plans and environmental reports are subject to comment by state and local governments. Certification of conformity with the State Implementation Plan prepared under Section 176(c) of the Clean Air Act is required. EPA is developing draft regulations on Section 176(c) which will be applicable to Federal programs such as the OCS program. State concurrence with the certification of consistency with approved state coastal zone management programs is also required (unless the Secretary of Commerce overrules a state objection). 101/

Once an exploration plan or development and production plan is approved, the USGS Conservation Division regulates the operations of the lessee through lease stipulations, OCS orders, regulations and notices to lessees. The purpose of OCS orders is to provide requirements, specifications, and standards to promote safety of operations, protect facilities and equipment, and minimize pollution of the environment. 102/ OCS Orders are numbered and provide similar requirements for all OCS areas. 103/

97/ FES Five-Year Schedule, page 12.

98/ Ibid.

99/ 30 CFR 250.34-1, 34-2.

100/ Ibid.

101/ Ibid.

102/ FES Five-Year Schedule, pages 13.

103/ 30 CFR 250.2

OCS Orders and related regulations and notices to lessees govern operational aspects related to exploration, development, and production. Orders specify necessary procedures, equipment, and contingency plans. At present, in the Gulf of Mexico there are 14 OCS Orders, and Order No. 7 specifically refers to pollution prevention and discharge requirements. 104/ With the exception of OCS Order No. 10, the orders for current regions address similar operations and procedures. Where differences in operating conditions dictate, different criteria and requirements apply to different regions. Because of the formal administrative process to establish OCS orders for application in each region, it is a time consuming task to change them once they are adopted. Revision of OCS Orders is accomplished through a 2-step procedure requiring notification in the Federal Register and solicitation of comments by interested parties. Because of the time necessary for promulgation and revision of a Regional OCS Order, it is not practical to change Orders to cope with critical short-term developments or to require additional regulatory measures in response to new information. 105/ The Supervisor has the responsibility through regulations to assure that operations are conducted in a manner to prevent harm or damage to, or waste of any natural resource, including mineral deposits, fish and aquatic life, property or the marine coastal and human environment. In order to perform this responsibility, he/she has broad authority to regulate operations on the OCS including the temporary suspension of operations and the waiving of specific requirements.

Criteria for waiving an Order include protection of wildlife, conservation of natural resources and protection of the environment. 106/ The USGS Supervisor may also suspend or terminate any OCS operation if he/she determines that a threat exists of "immediate, serious or irreparable harm or change to aquatic life, property, the leased deposits or other valuable mineral deposits or the environment." 107/ Special procedures are used to implement the suspension or termination authority, including the conduct of studies funded by the lessee to examine the threat of "significant irreparable damages." 108/

USGS can also use two other means to apply environmental and safety controls on OCS activities. OCS Supervisors may issue "Notice to Lessees" which "define operational problems and necessary actions for solution." USGS may also specify conditions to any permit, right-of-use or easement "which may be necessary to provide environmental protection." 109/

104/ FES Five-Year Schedule, pages 13-16.

105/ Study Design, Appendix 10.

106/ Ibid.

107/ Ibid.

108/ Ibid.

109/ FES Five Year Schedule, page 17.

Implementation of these regulatory approaches requires considerable environmental and technological information. Section 20(b) of the OCSLAA states:

> Subsequent to the leasing and developing of any area or region, the Secretary shall conduct such additional studies to establish environmental information as he/she deems necessary and shall monitor the human, marine, and coastal environments of such area or region in a manner designed to provide time series and data trend information which can be used for comparison with any previously collected data for the purposes of identifying any significant changes in the quality and productivity of such environments, for establishing trends in the areas studied and monitored, and for designing experiments to identify the causes of such change.

In cases in which such information is incomplete or uncertainty is high, these regulatory instruments should be implemented with flexibility and with careful evaluation of their effectiveness in mitigating actual alterations of the environment. Effectiveness of regulatory measures will depend upon their responsiveness to improved information about the effects of OCS technologies on the environment; credibility of the OCS regulatory programs in turn will depend to a great extent on the monitoring and evaluation of the environmental impacts of OCS regulations. 110/

Recommendations:

1. The USGS should attempt to facilitate the conduct of environmental studies and monitoring during postlease activities by fostering cooperation between the lessee and those responsible for performing environmental research and monitoring. This cooperation is especially important in frontier areas where information about environmental research is instrumental to decisionmaking about expanded OCS activity in that frontier region.

2. Additional Biological Task Forces should have responsibilities to recommended scientific studies to assist the OCS Supervisors in the implementation of OCS regulations, modeled upon the responsibilities of the Georges Bank Biological Task Force.

3. BLM should revise the priorities of its Environmental Studies Program to ensure full consideration of results of scientific research and continuing assessment efforts in support of a more flexible postlease regulatory program. Additional funding to the BLM studies program probably will be necessary to provide an adequate postlease element in the studies program.

c. Improved coordination between Federal agencies and environmental scientists is necessary to design and implement a coordinated environmental research and monitoring program to support OCS management.

The BLM Environmental Studies Program is intended to provide information that will serve all phases of the OCS management process, not just

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110/ Monitoring is expressly required by Section 20(b) of P. L. 95-372.

those aspects for which BLM has direct management responsibility. In practice, the funds and personnel available for the Environmental Studies Program have not been sufficient to support all proposed studies. 111/ BLM carefully assesses the priority of each study that it supports in terms of multiple criteria. BLM's criteria stress the direct application of expected results to specific decision points in the 5-year lease schedule. 112/

Other Federal agencies have direct responsibilities under the OCSLAA which may require information for implementation. NOAA is responsible for assisting BLM with the Environmental Studies Program, conducting studies of underwater diving techniques, implementing the Fishermen's Contingency Fund, and administering amendments to the Coastal Zone Management Act pertaining to the OCS. 113/ The U.S. Coast Guard is responsible for establishing and enforcing safety regulations for OCS structures, inspecting and certifying mobile offshore drilling units, maintaining surveillance of oil discharges, coordinating the National Oil and Hazardous Substances Pollution Contingency Plan, and regulating vessels. 114/ The Department of Energy is responsible for regulations concerning certain fiscal and administrative aspects of OCS development such as establishing production goals, lease bidding systems, and setting rates of production based upon national energy needs. 115/

Other Federal agencies also have OCS-related responsibilities based upon the National Environmental Policy Act or more specific statutes such as the Endangered Species Act, the Fishery Conservation and Management Act, the Marine Mammal Protection Act, the Fish and Wildlife Coordination Act, the Marine Protection, Research and Sanctuaries Act, the Coastal Zone Management Act, and the Clean Water Act. OCS-related responsibilities also derive from the general mission of a Federal agency such as the Corps of Engineers, which is generally responsible for regulating fixed structures in navigable waters (Section 4(f) of P.L. 83-212).

The need for coordination and cooperation between the various Federal agencies that conduct programs relating to the OCS has been clearly recognized by the Department of the Interior. 116/ Coordination of programs to

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111/ This statement is not intended to assert that BLM should expand its Environmental Studies Program to encompass studies that are the responsibility of other agencies or the private sector.

112/ FES Five-Year Schedules, note 24.

113/ Offshore Oil and Gas, Chapter 2.

114/ Ibid.

115/ Ibid.

116/ Offshore Oil and Gas, p. IX, Study Design, pages 5-9.

acquire information that can assist in the assessment of environmental impacts of OCS development is especially necessary. Within the limited funds available for each agency's programs, interagency coordination can avoid wasteful duplication of effort, and more importantly can provide for joint action to answer common research questions. For example, at least six Federal agencies are supporting research on the effect of hydrocarbons on the marine environment.

In response to the need for coordination of OCS research and monitoring efforts of Federal agencies, various mechanisms have been developed. Within the Department of the Interior, general coordination of the OCS-related activities is governed by Interior Departmental Manual, Section 655 DM 1, formerly Secretarial Order 2974. That section governs cooperation between BLM, USGS, the Heritage Conservation and Recreation Service and the Fish and Wildlife Service. More specific memoranda of understanding have also been negotiated between DOI agencies and offices. 117/ At the Washington level, coordination under this section is directed by the Office of OCS Program Coordination.

At the interagency level, the Department of the Interior has entered into arrangements with other Federal agencies to coordinate OCS-related programs. For example, the Bureau of Land Management and NOAA have a Basic Agreement to govern implementation of the Outer Continental Shelf Environmental Assessment Program in Alaska. 118/

The BLM Environmental Studies Program also receives advice from Regional and State Working Groups through its Intergovernmental Planning Program. Although the Georges Bank Biological Task Force was created to advise the USGS, interagency coordination through the work of the Task Group may affect the BLM Environmental Studies Program or the programs of participating agencies for that region.

In addition, the Federal Coordinating Council for Science, Engineering and Technology of the Executive Office of the President established the Committee on Ocean Pollution Research and Development and Monitoring (COPRDM) in 1978 to implement the National Ocean Pollution Planning Act (P.L. 95-273). Interagency coordination of ocean pollution research, development and monitoring, including analysis of impacts from oil pollution from OCS operations, is one important responsibility of COPRDM. COPRDM has identified oil and gas as one of the nine high priority needs for research, development

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117/ IPP, Appendix I.

118/ IPP, Appendices II and III; Offshore Oil and Gas, Chapter 2.

and monitoring. All Federal agencies with marine pollution research programs are members. 119/

COPRDM is responsible for preparing a comprehensive 5-year plan for the overall Federal effort in ocean pollution research and development and monitoring. The Act requires that the Federal Plan: (1) identify those national needs and problems which relate to specific aspects of ocean pollution ... which exist and will arise during the Plan period (Section 4(b)(1)(A)); (2) establish the priority, based upon the value and cost of information which can be obtained from specific ocean pollution research, ... of those programs and projects in which such needs should be met, and such problems should be solved, during the Plan period (Section 4(b)(1)(B)); (3) provide a detailed listing of all existing Federal programs related to ocean pollution research ... (Section 4(b)(2)(A)); and (4)include an analysis of the extent to which each such program, if continued on the basis and at the funding level described ... will assist in meeting the priorities set forth in the Plan (Section 4(b)(2)(B)). The law further specifies that if it is determined as a result of the analysis that priorities set forth in the Plan will not be adequately met using existing Federal capability, then the Plan shall recommend appropriate changes in the overall Federal effort in ocean pollution research ... (Section 4(b)(3)). Finally, the Plan is to contain a description of the actions taken by the Administrator (NOAA) to coordinate the budget review process for the purpose of ensuring interagency coordination and cooperation in carrying out the Federal ocean pollution research and development and monitoring programs and in eliminating unnecessary duplication of effort among the programs (Section 4(b)(4)).

The first Federal Plan, issued in 1979, revealed that studies of problems related to petroleum and petroleum products form the largest category and accounted for almost 40 percent of the total Federal ocean pollution research and develoment and monitoring program for fiscal year 1978. COPRDM is now engaged in a comprehensive review of Federal petroleum pollution research programs. 120/ The purpose of the review is to compare the goals and directions of current Federal oil pollution research and development and monitoring studies with the identified national needs in the area, to assess the extent to which these studies satisfy priority

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119/ The member agencies of COPORDM are: Environmental Protection Agency; National Oceanic and Atmospheric Administration; Department of the Interior: Fish and Wildlife Service, U.S. Geological Survey and Bureau of Land Management; Department of Defense; Department of Energy; Department of Health and Human Services; Department of Agriculture; Department of Transportation; Nuclear Regulatory Commission; and the National Aeronautics and Space Administration.

120/ Interagency Committee on Ocean Pollution Research, Development and Monitoring, "Strategy for Comprehensive Review of the Federal Marine Pollution Research Development and Monitoring Programs Dealing with Technology for Oil and Hazardous Materials Spill Prevention, Control and Clean-up and Environmental Impact of Oil Pollution."

needs, and to formulate recommendations for necessary changes. The review is divided into categories concerning (1) technology for oil and hazardous materials, spill prevention, control and cleanup and (2) environmental impact of oil pollution at the generic and site specific levels. Results and recommendations of the review will be presented in the second Federal Plan to be issued in 1981.

Recommendations

1. COPRDM should place additional emphasis on the need to coordinate the OCS environmental studies programs of DOI with the related programs of other agencies to maximize the information available to the DOI as a basis for leasing decisions.

2. COPRDM should seek ways to integrate studies of pollution for OCS activities into the broader fabric of marine environmental research to increase knowledge of the overall quality of coastal waters.

3. The Biological Task Forces established for specific OCS regions should make two contributions to the OCS decisionmaking process: (1) prior to exploratory activities and drilling, provide quick advice to the OCS supervisor about the environmental consequences of particular OCS activities in that region based upon existing information; (2) in the longer run, assist in the design of a program of environmental research and monitoring to improve the base of information available for future OCS decisionmaking in the region, with particular emphasis on development of studies to assess the effects of OCS activities in areas of greatest environmental concern, especially with respect to the distribution of pollutants.

2. Environmental Regulation of OCS Operations

As noted above, the Outer Continental Shelf Lands Act establishes a comprehensive management system for oil and gas activities in the OCS which calls explicitly for management decisions that balance energy development factors with the need to protect coastal communities and resources. 121/ In brief, the Department of the Interior's regulatory tools to achieve this objective include:

a. Regulations. Especially 30 CFR 250:

250.12 - suspension of operations and lease cancellation

250.34 - approvals of exploration, development and production plans

250.43 - pollution and waste disposal (see 30 CFR 250, Oct. 26, 1979, 44 F.R.61886)

250.57 - air quality (see 45 CFR 15128, March 7, 1980)

121/ FES Five-Year Schedule, pages 7-20.

b. OCS Orders dealing with a variety of environmental and operational issues.

c. Various notices to lessees and operators further implementing regulations. For example, halogenated phenols (a class of bactericides used in drilling muds) were banned from use on July 3, 1979, (44 F.R. 39032, July 3, 1979).

d. Special stipulations attached to leases. Examples include:

- seasonal drilling restrictions in the Beaufort Sea;

- protection of the Flower Garden Banks by establishing a "no activity" zone, a zone requiring monitoring of operations, and a zone requiring shunting of discharges into the ocean;

- special biological stipulations in various OCS sale areas.

Other Federal regulatory programs are also designated to protect environmental quality by controlling emissions into the water or the air. The Clean Water Act and Clean Air Act each establish comprehensive environmental management systems with their own objectives, priorities, procedures, and guidance for regulating decisionmaking which seek to balance economic, environmental and social factors. Reconciliation of environmental regulations pursuant to the OCSLAA, the Clean Water Act and the Clean Air Act, and arrangements for coordination between DOI and EPA have not yet been completed. 122/ Close coordination of OCS management with national air and water quality objectives can contribute greatly to the protection of coastal resources.

a. Effective implementation of the National Pollutant Discharge Elimination System for OCS operations in new areas will require extensive new information about the effects of operational fluid discharge in the environment.

Section 402 of the Clean Water Act requires EPA to regulate all point source discharges from OCS operations as part of the National Pollutant Discharge Elimination System(NPDES). 123/ Point source discharges of all pollutants from OCS installations must meet certain requirements and standards for the operator to satisfy the terms of an NPDES permit.

Discharges from OCS installations are varied due to the numerous components that comprise drillings muds. Although technical evaluations have recently received priority attention, no scientific consensus presently

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122/ For air issues, see Final Report, page 82, Pacific Legal Foundation, V. Costle, CIV No. S-79-429 PCW.

123/ 45. FR 65942.

exists on the nature of their effects on the marine environment. Studies of OCS operations conducted in natural environments indicate rapid dilution of drill fluids with no evident impacts on the water column and only limited impacts on impacts on benthic organisms. Various laboratory studies have suggested the possibility of environmental impacts. However, these impacts have been measured for drilling fluid concentrations which are not realistic relative to the rapid dilution that takes place under natural conditions. In general, field work has not provided sufficient control of experimental conditions to be definitive and laboratory work has not been clearly relevant to field conditions.

Procedures for determining discharge content include reports by OCS lessees to the USGS Supervisor on drilling fluids used and monitoring reports filed with EPA on the components discharged. Discharge of formation waters can increase hydrocarbon and trace metal concentrations in coastal waters in the vicinity of OCS operations. The toxicity, tendency for bioaccumulation and chronic and sublethal effects of these discharges are now under investigation. 124/

On October 15, 1973, EPA promulgated combined regulations implementing Section 102(a) of the Marine Protection, Research and Sanctuaries Act and Section 403(c) of the Clean Water Act with respect to the ocean disposal of waste materials, including sewage sludge, liquid and solid industrial wastes, and dredged materials. In practice, these regulations proved unworkable. EPA therefore determined that 102(a) and 403(c) regulations should be revised and published as separate regulations. Ocean dumping (102(a)) regulations were promulgated on January 11, 1977. However, EPA ran into substantial difficulty revising 403(c) regulations and until recently there had been no published national guidelines in place. Rather, permit writers were implementing 403(c) on a case-by-case basis.

On June 21, 1979 the Pacific Legal Foundation filed suit in U.S. District Court for the Eastern District of California seeking, among other things, that EPA promulgate revised Section 403(c) guidelines. 125/ On October 31, 1979, the Court ordered EPA to promulgate these guidelines and to publish interim guidelines stating agency policy in reviewing, issuing or denying NPDES permits pending promulgation of final guidelines. 126/ On October 3, 1980, EPA published final guidelines for OCS operations to qualify for an NPDES discharge permit under Section 403(c) of the Clean Water Act. 127/ These guidelines became effective on November 3, 1980 and are intended to prevent unreasonable degradation of the marine environment through effluent limitations, including a prohibition of discharges.

124/ Ibid.

125/ Pacific Legal Foundation, V. Costle, CIV No. S-79-429 PCW.

126/ 44 FR 9548.

127/ 45 FR 65942.

Recently, EPA decided that case-by-case implementation of permit applications under the guidelines would be impractical in certain areas. Although applications for permits had been submitted, more than 2,000 offshore installations in the Gulf of Mexico were operating without NPDES permits. EPA issued three general permits for the Gulf of Mexico setting effluent limitations, standards, prohibitions and other conditions on discharges from oil and gas facilities in designated areas. 128/ Within these areas, EPA has determined that paucity of bottom organisms and absence of areas of significant biological concern would result in no adverse impacts. The permits are valid for 2 years. Specifically excluded from the general permits are "potentially productive or unique biological areas", such as the Flower Garden Banks, which would require individual permits. 129/

To improve the effectiveness of its NPDES implementation efforts on the OCS, EPA has created an Outer Continental Shelf Coordination Committee. Two important functions of the Committee are: (1) development of a Memorandum of Understanding (MOU) with The Department of the Interior and the United States Coast Guard and (2) coordination of research activities by a Drilling Muds and Formation Waters Task Force. 130/ The MOU is intended to assure EPA's participation in the OCS Environmental Studies Program and to provide assistance to EPA so that NPDES permits can be issued before or at the time a notice of sale is published. Early identification of impacts will assist EPA in determining appropriate conditions for NPDES permits, thus reducing the potential for delays in permit issuance. Inspection and compliance sampling requirements of each Federal agency will also be coordinated in the MOU. The Drilling Muds and Formation Waters Task Force will identify gaps in current knowledge and research concerning environmental effects of drilling muds and formation waters.

Although continued progress is expected with implementation of NPDES in the OCS, several issues will require additional attention in the future. The development of OCS installation discharge criteria for specially sensitive areas or for remote frontier areas will require considerable investigation. The uncertainty about the technologies to be used in harsh frontier environments and the absence of extensive knowledge about environmental sensitivities will exacerbate the problem. In regions where extensive OCS development occurs, a more aggregate, long-term view of offshore water quality will require sophisticated analysis of the assimilative capacity of the region. Standards based upon single, isolated discharges in an unpolluted environment will not necessarily fulfill water quality objectives where chronic pollutant loadings already affect the environment. As effluent standards may

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128/ Ibid.

129/ Ibid.

130/ Statement of R. Sarah Compton, Deputy Assistant Administrator, Office of Water Enforcement, EPA, before the Oceanography Subcommittee, House Committee on Merchant Marine and Fisheries, August 26, 1980.

become more stringent in the future, detention of residues removed from effluents may pose special problems, and disposal of such solid residues may increase the need for ocean dumping, which is regulated by Section 102(a) of the Marine Protection, Research and Sanctuaries Act.

Recommendations:

1. EPA should attach highest priority to the identification of areas of special environmental sensitivity and specific biological concern. The identification of such areas and the development of effective criteria to meet water quality objectives should be accomplished in close coordination with other Federal agencies.

2. EPA should focus priority attention on specifying New Source Performance standards and Best Achievable Technology (BAT) in frontier areas where biological sensitivity and operational adversity are most pronounced.

3. COPRDM should formulate a design of a coordinated interagency program of research and monitoring to assess the long-term assimilative capacity of offshore regions where extensive OCS development discharges occur.

4. The Biological Task Forces should serve as an important advisory mechanism to assist EPA in the identification of OCS areas of biological concern and the specification of discharge restrictions that should be imposed through NPDES permits.

b. Improved information on the contribution of OCS air discharges to onshore air quality, particularly in areas already facing air pollution stress, is essential to assess the short-term or long-term consequences of OCS development for fulfillment of the policy objectives of the Clean Air Act.

The OCSLA Amendments of 1978 directed the Secretary of the Interior to regulate air emissions from OCS operations to ensure "compliance with the national ambient air quality standards pursuant to the Clean Air Act, to the extent that activities authorized under (OCSLAA) significantly affect the air quality of any state." 131/ Although EPA had begun to apply provisions of the Clean Air Act to OCS activities prior to the 1978 OCSLA Amendments, the Secretary of the Interior now has exclusive authority to regulate air emissions from OCS operations authorized under the provisions of the OCSLAA. 132/

Air emissions vary with the stage of OCS operations. During exploration, emissions occur predominately from ship engine exhaust, drilling and routine supply operations. Major emissions during the exploration phase include nitrogen oxide and carbon monoxide. The air pollutants associated with OCS

131/ FES Five-Year Schedule, pages 272-279.

132/ Final Report, page 87; Offshore Oil and Gas, pages 65-66.

production are sulfur oxides and nitrogen oxides from power generation, hydrocarbons from evaporative losses, and sulfur oxides, hydrocarbons, and hydrogen sulfide from gas processing. Power generation during OCS production may account for more than 80% of nitrogen oxides and up to 20% of the emissions of sulfur oxides when low sulfur fuels are not used. Such fuels would be required as necessary to meet air quality standards. A major oil spill would introduce massive amounts of hydrocarbons into the air, and a large release of natural gas could emit locally toxic quantities of hydrogen sulfide and significant quantities of hydrocarbons into the air.

On land (and seaward to the Federal Outer Continental Shelf) air quality is regulated by standards designed to protect public health and welfare that are established by Federal, state and local governmental action. 133/ The Federal standards -- national primary and secondary ambient air quality standards (NAAQSs) -- are established by EPA under the provisions of the Clean Air Act. The Clean Air Act requires that states prepare State Implementation Plans to achieve at least the level of Federal NAAQSs. States and local governments are permitted to establish requirements more stringent than Federal standards. Nitrogen dioxide, sulfur dioxide, hydrocarbons and ozone are most likely to be of concern from OCS operations. 134/ Nitrogen oxides are released in the greatest amount of any OCS pollutant, primarily from power generation, and would be most likely to need controls in the DOI regulatory program. If oil production is barged or tankered ashore, hydrocarbon emissions probably would need control.

In March 1980, DOI issued final regulations for controlling air emissions from OCS operations. 135/ The regulations establish information requirements and criteria to determine whether OCS air emissions "significantly affect" air quality in any offshore area. Lessees are required to provide meteorological and control equipment data needed to determine the potential effect of OCS emissions on onshore areas. Based upon the analytical models and applications of "levels of significance" utilized by EPA for onshore stationary sources, DOI will determine whether or not controls on air emissions would be required in each case.

On the basis of comments received during the rulemaking, DOI has proposed special, more stringent air emission regulations for the OCS area adjacent to states where air quality is already seriously degraded and air emission standards are more stringent than the NAAQSs, such as California. 136/ DOI determined that the air quality of coastal regions adjacent to the OCS varied greatly from area to area. Certain areas in

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133/ FES Five-Year Schedule, pages 153-155.

134/ Ibid.

135/ 45 FR 1528.

136/ 45 FR 1547.

coastal Alaska exhibit air quality with negligible degradation, whereas the coastal area of Southern California experiences frequent violations of ambient air quality standards. The DOI regulations are intended to be compatible with EPA approved state programs to prevent significant deterioration of air quality in clean air areas and facilitate attainment of the NAAQSs and state standards set forth in the State Implementation Plans. DOI rejected recommendations from state and local government agencies in California that DOI apply onshore standards to the OCS. DOI justified the decision on the basis of the statutory authority, conservative safety factors that DOI employs in its regulations, and on the fact that OCS installations are widely dispersed.

DOI plans to make decisions about air emissions controls for lessees during the approval process for exploration plans and development and production plans. To provide better information, the BLM Environmental Studies Program is supporting a study to evaluate the accuracy of air pollution models used for the OCS. 137/ EPA has funded a project with the Ventura County Air Pollution Control District in California to develop predictive models to estimate onshore impact from OCS installations in the Santa Barbara Channel. Results of the project are due in March 1981.

As OCS activity proceeds, key issues will likely be the adequacy of analytical models and the availability of environmental and technological data to estimate onshore effects of individual OCS operations, as well as the cumulative effect of all OCS operations that may affect the onshore area. The consequences of accidental or unintended emissions from OCS equipment failure and the effectiveness of emission control and oil spill prevention measures to avoid onshore air quality degradation may be questioned. An additional concern will be the onshore cumulative impact of emissions from OCS sources. These are exempted from control requirements because of the DOI distance-dispersion criteria employed in the regulations. DOI does have authority to regulate installations causing unacceptable cumulative impact on shore to avoid such impact.

Recommendations:

1. DOI should work with EPA and state and local air quality agencies in Southern California to develop a joint program of research and technical evaluation to achieve the control of onshore impacts of OCS emissions as set forth in the OCSLAA.

2. In view of EPA's expertise, experience and responsibility in the field of air quality management, EPA should work with USGS to assess air quality emissions data and develop emission control measures to be included in OCS Exploration and Development Plans.

137/ BLM Study #15, Southern California Air Quality Model Validation Study.

3. Participation of Interested Parties in Decisionmaking

Increased participation of state and non-Federal parties in OCS decisionmaking -- state and local governments, citizen groups and industry -- was the cornerstone of the 1978 Amendments to the OCSLA. As the OCS leasing process advances in frontier areas, the burden of participation in complex OCS decisionmaking for exploration and possible development and production will increase substantially. Two Federal programs designed to assist such participation are NOAA's Coastal Energy Impact Program and the Bureau of Land Management's Intergovernmental Planning Process. Recommendations with respect to each of these programs follow.

a. Coastal Energy Impact Program

The Coastal Energy Impact Program (CEIP) was established in 1976 by amendments to the Coastal Zone Management Act. 138/ Congress was concerned that expanding efforts to increase domestic energy production -- particularly the accelerated program of OCS leasing -- could have serious impacts on local economies, the marine environment and the social fabrics of coastal communities. Congress, therefore, established CEIP to provide a comprehensive program of financial assistance to affected states. The objectives of CEIP are the following:

-- to improve state and local capacity to deal with expanded coastal energy activity;

-- to provide front-end financing to communities faced with "boom town" and other socio-economic effects from rapid energy-spawned industrialization;

-- to mitigate environmental and recreational losses stemming from energy development;

-- to encourage state participation in the Coastal Zone Management Program;

-- to provide limited compensation of "equity" in lieu of taxes to states adjacent to OCS oil and gas development; and

-- to reduce opposition to OCS leasing and other energy development.

In 1978, CEIP was amended by the OCSLAA to modify the regulations for CEIP and to establish a new grant program to foster state government participation in the OCS management process. 139/ State participation grants were authorized which may be used by states to accomplish the following tasks:

138/ Offshore Oil and Gas, pages 16-20.

139/ Ibid.

-- enforce OCS-related safety, environmental and conservation laws and regulations;

-- participate in DOI hearings on lease and permit cancellations and in certain hearings before the Federal Energy Regulatory Commission on oil and gas pipeline transportation and expansions;

-- review Federal action significantly affecting the OCS or its development;

-- make cooperative agreements for leasing OCS lands immediately adjacent to state seaward boundaries;

-- participate in formulating an OCS leasing program;

-- prepare recommendations on development and production plans;

-- make cooperative agreements with DOI for sharing information and available expertise, facilitating permitting procedures, conducting joint planning and review, and formulating joint surveillance and monitoring arrangements to carry out Federal and state laws, regulations, and stipulations relevant to OCS operations -- both onshore and offshore;

-- cooperate with DOI on environmental studies;

-- review safety and other regulations of any Federal department or agency applicable to the OCS;

-- review and comment on draft Environmental Impact Statements;

-- review, comment and analyze any OCS data transmitted to the state by the Secretary of Interior; and

-- inspect relevant privileged information received by the Secretary regarding any OCS activity adjacent to the state.

The CEIP is implemented by means of formula grants, planning grants, credit assistance, environmental and recreation loss grants, and OCS state participation grants. 140/

Planning grants are awarded to finance state and local planning projects to prepare for proposed coastal energy facilities. Many states have used the grants to enhance or create state energy analysis capabilities.

140/ See generally, Coastal Energy Impact Program: An Evaluation, U.S. Department of Commerce, Office of Coastal Zone Management, NOAA, and Office of Budget and Program Evaluation, Assistant Secretary for Administration, August 1980.

In general, planning grants have allowed states to assemble a core of professional talent to address OCS and energy issues with continuity. Nearly $7 million in planning grants was awarded during the period 1977-1980. 141/

OCS state participation grants were the only new CEIP element established by the 1978 amendments to the OCSLA. The objective of fostering state participation in the OCS management process was a central reform of the OCS management system. Funds to implement OCS state participation grants were not made available until 1980, when $3 million was reprogrammed for this purpose.

As the number and complexity of decisions increase during the future implementation of the 5-year OCS lease schedule, the demands placed on state and local governments to participate in the process will expand markedly. This expansion will be especially critical in frontier areas where risks and uncertainties associated with OCS development are a source of intense concern to adjacent states. CEIP assistance could be a vital factor in the ability of states to fulfill their responsibilities under the OCSLAA.

Recommendations:

1. CEIP planning grants and OCS state participation grants should be continued to assist states in developing an energy policy and analysis capability and to help make OCS management more timely and effective.

2. As the accelerated OCS leasing program proceeds, a greater proportion of formula grant and OCS state participation grant funds should be awarded to frontier area states to allow them to cope with the increasing burden of analysis and decisionmaking.

b. Bureau of Land Management Intergovernmental Planning Program

The Intergovernmental Planning Program for OCS Oil and Gas Leasing, Transportation and Related Facilities (IPP) was established by DOI to provide all groups affected by OCS activities access to and participation in the OCS leasing and development process. The IPP functions through six Regional Technical Working Groups (RTWGs), one for each OCS leasing region; Alaska, Gulf of Mexico, Mid, North, and South Atlantic, and Pacific.

Each RTWG is composed of representatives of six Federal agencies, one representative from each coastal state in the OCS leasing region, and at least seven representatives of organizations and groups affected by OCS activities, including the oil and gas industry, the fishing industry, and conservation advocates. The composition of each RTWG is designed to provide a balance of points of view, so that any recommendations represent a consensus of initially divergent perspectives.

141/ Ibid.

RTWG recommendations coincide with the various decision points in the OCS leasing and development process. Recommendations that the groups may make include the following: tracts for study in the DEIS, issues for consideration in the DEIS, mitigating measures for proposed leases, regional and site-specific studies to provide necessary information, and proposed transportation corridors.

Because the IPP has operated for only a year (since October 1979), the effectiveness of the program in reducing administrative and judicial delays is unknown. However, all RTWGs have provided recommendations and comments to the Bureau on prelease sale activities. Three of the RTWGs are presently working on transportation corridor proposals.

Recommendation:

The Bureau of Land Management and DOI should continue to support the Intergovernmental Planning Program. All Federal agencies, states, and private organizations participating on the RTWGs should continue to be encouraged to provide recommendations throughout the OCS decisionmaking process.

4. Compatibility of Federal OCS Management with Other Continental Shelf Hydrocarbon Management Systems

The Federal management system for oil and gas development on the Outer Continental Shelf is applicable to the area extending between the territorial sea (currently three nautical miles from shore, except for portions of the Gulf of Mexico where the distance is 3 leagues from shore) and the outer boundary of U.S. national jurisdiction over the continental shelf as defined by international law. Although the OCS area represents a substantial portion of the continental shelf of the United States, coastal regions adjacent to the United States are subject to other management systems for the development of oil and gas resources of the continental shelf. In the territorial sea, management of offshore hydrocarbons is governed by individual regulations of states that have jurisdiction over seabed resources within their boundaries. Laterally, continental shelf resources are managed by foreign governments such as Canada, Mexico, and Caribbean nations.

Even if the OCS management system performs with extreme effectiveness in the OCS area, national coastal protection objectives may not be achieved if contiguous state and foreign continental shelf management systems are ineffective and significantly deleterious trans-boundary effects result. Cooperation in regional scientific, technological and environmental assessment studies can increase benefits to all parties. Common approaches to regulation of offshore technology may permit simplification and standardization of requirements for the offshore industry. As the quest for greater production of offshore oil and gas extends to all portions of the continental shelf, appropriate coordination of OCS management with other continental shelf resource management systems will contribute to fullfillment of national coastal protection objectives.

a. Although considerable Federal/state coordination does take place with respect to management of OCS and state seabed areas, opportunities exist for greater collaboration on scientific, technological and environmental aspects of offshore oil and gas management.

The 1978 amendments to the OCSLA establish a comprehensive and systematic approach to consultation and cooperation with states. 142/ One important dimension of this cooperation is involvement of state continental shelf management agencies where offshore oil and gas activity is regulated by a state. The states of Texas, Louisiana, California and Alaska all have considerable experience with the management of offshore oil and gas development. In fact, regulations established by Texas and Louisiana during early phases of development of the Gulf of Mexico have tended to set the pace and create a pattern for safety regulation of the offshore industries. 143/ At the present time, many channels exist for communication and coordination between Federal and state offshore management agencies. For example, the BLM Intergovernmental Planning Program and its regional and state committees provide an organized forum for interaction. Informal communication lines also exist at the agency level among offshore oil and gas management personnel through professional societies and conferences. 144/

Although mechanisms for communication and consultation are generally available at various Federal and state agency levels, further opportunities for joint action and programmatic cooperation still exist. For example, modest funds have been made available for environmental planning grants through the CEIP to fund state research related to air emission modeling for offshore operations. 145/ In order to implement the NPDES for offshore operators, EPA is seeking information from the offshore agencies of Texas and Louisiana to assist in environmental assessment and regulatory analysis. Programs of environmental monitoring of offshore oil and gas operations must be designed and implemented for the entire continental shelf. Research and evaluation of new offshore technologies for use in harsh frontier environments such as the Beaufort Sea could be beneficially undertaken as a cooperative venture with Federal and state agencies.

142/ See Footnotes 76 and 77.

143/ During the first decade of offshore oil and gas development in the Gulf region, the bulk of activity was conducted within state jurisdiction.

144/ Annual Conference of the Marine Technology Society and the annual Offshore Technology Conference are major nongovernmental forums for communication among professional personnel in the offshore industry.

145/ See Footnote 140.

Although Federal and state agencies each have distinct regulatory responsibilities which they cannot delegate to the other governmental level, coordination of offshore regulations can improve the overall effectiveness of offshore management objectives and streamline the regulatory process for the offshore industry. For example, lease stipulations in a coastal region such as the Beaufort Sea could be actively coordinated between Federal and state agencies within their respective jurisdictions.

Recommendations:

1. The Department of the Interior should identify further opportunities for coordination and joint action with state agencies responsible for continental shelf resource management. This cooperation could profitably proceed with scientific and technical studies and development of regional assessment programs. Coordination of regulatory approaches and requirements should be explored as a means to simplify the process of industrial response and compliance with offshore management objectives.

2. The Coastal Energy Impact Program should be used to a greater extent as a stimulus for coordination between Federal and state offshore management agencies. CEIP funds can be used to support the collaboration of state agencies in joint planning and research efforts with Federal programs related to the OCS.

b. As offshore oil and gas development accelerates in neighboring nations, the United States Government should seek common action to promote responsible offshore oil and gas development.

In the course of expanding development of offshore oil and gas, Canada and Mexico are facing many of the uncertainties and problems confronting the Federal OCS management program. Although priorities and strategies may differ, many of the questions are the same. In the interest of gaining as much useful information about the offshore management experience of neighboring nations and providing a convenient opportunity for them to profit from U.S. OCS experience, greater international collaboration is warranted.

Collaboration with Canada and Mexico could run the spectrum from communication regarding scientific and technical programs to the development of jointly sponsored programs of environmental research and monitoring. Contingency planning for offshore emergencies has already become the subject of international discussion between the Department of State and the Government of Mexico in the wake of the Ixtoc I accident.

Collaboration could also extend to consultation on the offshore regulatory process itself. Common or compatible regulatory requirements in an area such as the Beaufort Sea would be desirable. To the degree that regulatory actions by the Government of Canada in the Beaufort Sea threaten endangered species under U.S. jurisdiction, informal requests for additional action or formal protests may become warranted. The Council on Environmental Quality has proposed negotiation of an agreement with Canada to address international offshore oil and gas problems.

Anticipation of the increasing possibility of pollution from offshore operations of neighboring nations may require modification of Federal environmental research and monitoring activities in order to provide a better basis for obtaining evidence for damage claims and other international legal actions.

Recommendation

The Department of the Interior and other Federal agencies should cooperate with the Department of State to develop an initiative to establish greater cooperation with Canada and Mexico on common offshore oil and gas problems. This cooperation should occur on scientific, technical, management and regulatory levels. The Department of State should determine whether formal international agreements are necessary for this purpose.

5. Overall Federal OCS Program Management

Although the complex OCS management system established by the 1978 amendments to the OCSLA places central responsibilities on the Secretary of the Interior, implementation of the OCS Program requires effective and responsive contributions of other Federal agencies as well as other governmental units at the state and local level. The basic intention of the Congress was to establish an integrated OCS management system whose contributing parts would jointly fulfill the objectives of the OCSLA.

Coordination and communication between the Department of the Interior and other Federal agencies with responsibilities under OCSLAA or OCS-related statutes now exists in various forms. The BLM Intergovernmental Planning Program seeks to coordinate Federal actions relating to OCS management at the regional level. The Georges Bank Biological Task Force is developing an interagency effort to investigate and monitor oil and gas exploration on Georges Bank. The Interagency Committee on Ocean Pollution Research and Development and Monitoring is undertaking a major review of Federal programs relating to the environmental assessment of oil pollution from offshore operations and the technological capabilities to respond to spills of oil and hydrocarbon substances. Interagency agreements now exist or are being negotiated on specific aspects of implementation of the OCSLAA. 146/

No mechanism exists in the Executive Branch to review the overall performance of the OCS management system to fulfill the objectives of OCSLAA. Expressions of concern about the pressing need to accelerate the OCS leasing process do not penetrate many of the underlying causes for the delays and controversies surrounding implementation of the program. 147/ Congressional review of the OCS leasing program repeatedly questioned the adequacy of funds and personnel to make the pieces of the OCS management program function together

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146/ A new interagency committee to coordinate research on the effects of drilling muds and formation waters is now under negotiation.

147/ See for example, H.J. Res. 573, June 16, 1980.

as the OCSLAA originally intended. 148/ The Department of the Interior presented its estimated personnel and funding requirements to implement the 5-year leasing program. 149/ Although other agencies have important responsibilities associated with the 5-year leasing program, no estimates of their personnel and funding requirements have been presented, either individually or as a comprehensive package for review by the Office of Management and Budget. The performance of the overall OCS management system can only be improved when the requirements of the constituent program elements are assessed, priority problems in implementation are identified, and management action is taken to correct priority problems.

Implementation of the Federal OCS management program under the OCSLAA is still in its early phases. Decisions and actions taken in the next 5 years can substantially affect the progress toward fulfillment of national coastal protection objectives. The underlying problem of assuring that Federal agencies with responsibilities under OCSLAA and other statutes related to coastal resources have the resources and capabilities to respond to priority needs in the OCS management system will likely continue.

Recommendation:

The OMB should establish a policy and OCS interagency group to review agencies' programs and budgets and to assess the performance of the overall implementation of the OCSLAA by all Federal agencies which have responsibilities under that and other OCS-related acts. The mechanism should provide a composite estimate of the necessary funds and personnel of each Federal agency with OCS-related responsibilities, assess key program implementation needs, and recommend adjustments in the management of the Federal OCS Program. The objective of this composite review process is to ensure that the distinct components of the OCS management system assigned to various Federal agencies are implemented with the effectiveness intended by OCSLAA.

148/ See generally, Offshore Oil and Gas, pages VII-XI, Final Report, Chapters VIII and IX.

149/ Offshore Oil and Gas, page 13.

IV. Federal Agency Comments

The following Federal agencies submitted written comments on the draft of this chapter:

Department of Commerce
Maritime Administration

Department of Energy

Department of the Interior

Environmental Protection Agency

Federal Energy Regulatory Commission

U.S. Army Corps of Engineers

All comments from agencies, states, interest groups and the public were considered in the final revisions. Significant remaining disagreements with other Federal agencies are reflected in the summaries and excerpts from their comments below. All comments are on file at the Office of Coastal Zone Management and opportunity to review these documents can be arranged.

Department of Energy

Coal utilization, water quality impacts, page 199, recommendation 3. "ERA does not use an EIS to establish regulatory requirements. The EIS is used to evaluate the feasibility of conversion. If an order is issued based on this evaluation, the requirement imposed by DOE is to cease use of oil or gas. DOE does not establish specific performance requirements for such conversions, but leaves the interest receiving the order to develop the best program of compliance with officials responsible for air and water quality regulations. An FUA order can be finalized only if applicable environmental requirements have been met. We request that recommendation 3 be deleted from the report."

Outer Continental Shelf Oil and Gas Program. "DOE does not concur in forwarding any part of the review of the Outer Continental Shelf Oil and Gas Program to the Executive Office of the President. We are providing extensive comments on certain portions of this report. The impacts of our recommendations would substantially change this report. Further working group consultation should be held before a final report is prepared."

Environmental studies, page 204. This page states that "increased emphasis should be placed on environmental research and monitoring during postlease phases" of OCS operations. The paragraph and all following material through page 206 and recommendation number 1 on page 207 should be deleted or thoroughly redirected. The report recognizes that experience

under the present leasing program is limited. Operations in frontier areas have not gone beyond limited exploratory drilling .... To date, the program has been directed to support of scheduled lease sales and initial exploratory activities. We are confident that follow-up studies will come naturally when production operations have been initiated in frontier areas .... We would support a redrafted statement noting that there are no frontier OCS areas which have started production operations and emphasizing a need for continuing environmental studies when such operations have been started."

Biological task forces, page 207. "We would want an opportunity to review any integrated discussion of the role of biological task forces. We believe such groups can perform a useful technical advisory function, but must be carefully directed in order to be compatible with other advisory bodies, particularly the Regional Technical Working Group Committees."

OCS management system, page 225. "The report states that no mechanism exists to review the overall performance of the OCS management system to fulfill the objectives of OCSLAA. We find the discussion following this statement makes no comment on the Secretary of the Interior's OCS Advisory Board and the scope of the review functions of this Board. We believe the report statement should be deleted because the Board does have an overall review and policy advisory function. Any intent to make constructive suggestions regarding the activities of the Advisory Board should be specifically stated."

Department of the Interior

"We believe that the document should not be forwarded to the President in its present form. As we indicated in our reviews of previous drafts, the document is not responsive to President Carter's Environmental Message of August 2, 1979, in that it does not provide recommendations which would significantly improve the predictability of siting processes for major energy facilities. Instead, one-third of the text is devoted to recommendations which would encumber the OCS leasing program with additional procedural burdens. Furthermore, no analysis is provided as to costs which would ensue from such recommendations nor what value they would provide to the people of the United States. All three sections of the document: "Energy Facility Siting Process", "Accelerated Coal Utilization", and "OCS Oil and Gas Program" strongly emphasize environmental protection over the development of energy without ever comparing the benefits of this protection with the benefits which would be achieved from increased energy production."

"The text represents a misunderstanding of the overall OCS leasing process, the Biological Task Forces, and air quality and offshore discharges related to OCS activities. We emphatically do not support the recommendations related to these subjects."

Biological task forces, page 207. "If biological task forces were established on a regional basis, they would duplicate six existing advisory bodies, the Regional Technical Working Group Committees. Decisionmakers' needs are not well served by conflicting recommendations from advisory bodies with access

to the same information .... To be most useful, advisory bodies need to be composed of at least some non-Federal government members (there are at least seven private sector members on each RTWG). If there are non-Federal government members on an advisory committee, that committee must meet the requirements of the Federal Advisory Committee Act. The Act makes the creation of new committees very difficult, if not impossible."

U.S. Army Corps of Engineers

Tracking mechanisms, page 178. "The tracking/monitoring of permit applications for coal-fired power plants has provided no discernible benefits to the Corps of Engineers, while adding additional administrative workload. Since we cannot say that such monitoring has done anything to expedite Corps applications, we cannot endorse a recommendation to expand tracking to other facilities."

Chapter V: Improved Coordination for Planning and Permitting in Special Areas

CHAPTER V.

I. Introduction

President Carter's second environmental message to Congress established as an essential element of national coastal protection policy the goal of better coordinating and simplifying government decisionmaking to ensure proper and expedited management of the coastal zone. This portion of the Federal Coastal Program Review examines problems of coordination and conflict among Federal, state, and local regulatory programs that have overlapping jurisdiction in the coastal zone, particularly where complex natural resource and economic development issues must be balanced within limited geographic areas.

During the last two decades environmental legislation has dramatically increased protection for valuable coastal resources. At the same time, our systems for managing coastal development have become more pluralistic, complex, and costly. Although the large majority of coastal development projects are approved, this pluralistic system of regulatory review has, in some instances, contributed to protracted disputes and led to the need for increased coordination among Federal, state and local agencies, simultaneously assessing development proposals. Inconsistent interpretation of national policies, uncertainty in the permitting process, and other aspects of the current system can, on occasion, delay or prevent needed economic development or energy projects, lead to loss of valuable coastal resources, or cause excessive costs to both private investors and the public.

Coordination and simplification of regulatory programs are not issues unique to coastal programs. Many of the matters discussed in this review have much wider application. However, regulatory problems are intensified in the Nation's coastal zone, which contains 70 percent of the nation's remaining wetlands, 50 percent of its population, and 40 percent of its industrial complex. Our coasts contain many limited geographic areas where unique and valuable natural functions that serve fish and wildlife resources compete with economic functions such as port and urban development.

This review examines a number of techniques that have been and are being used to resolve some of the problems of traditional case-by-case review of development proposals by multiple government agencies. It focuses in particular on the potential role of collaborative interagency planning within geographic areas of special sensitivity in avoiding or resolving conflicts and balancing competing public values. This "special area management planning" process -- which is relatively new and has been

fully applied in only a few coastal areas-- seeks to improve coordination among regulatory programs by bringing all relevant parties to the negotiating table to establish policies and standards to guide development in limited areas in advance of permit applications for specific projects. The goal is to provide clear guidance to applicants, agencies, and the public to indicate how and why permit decisions will be made in the future, and reduce the time and costs of the process. It does not seek to replace the case-by-case review of specific project applications; rather, it seeks to establish a policy framework and process for conducting these reviews.

In conducting the review, we evaluated the Federal programs that have the most significant impact on efforts to apply and coordinate regulatory activities in sensitive areas of the coast. These programs are as follows:

-- The Army Corps of Engineers' Regulatory Program pursuant to Section 404 of the Clean Water Act, which regulates discharges of dredged and fill materials into U.S. waters; and Section 10 of the River and Harbor Act, which regulates structures or work in or affecting navigable waters.

-- The requirements of the Fish and Wildlife Coordination Act that Federal agencies proposing to control or modify any stream or body of water, consult with the Department of the Interior's Fish and Wildlife Service and the Department of Commerce's National Marine Fisheries Service to minimize the impact on fish and wildlife resources and their habitats.

-- Environmental impact statement activities of Federal agencies pursuant to regulations of the Council on Environmental Quality under the National Environmental Policy Act.

-- Activities of the Fish and Wildlife Service and the National Marine Fisheries Service under the Endangered Species Program to conserve endangered and threatened species and the critical habitat upon which they depend.

-- Office of Coastal Zone Management activities pursuant to the Coastal Zone Management Act to coordinate state and Federal regulatory activities in coastal areas.

-- Development of state plans to implement National Ambient Air Quality Standards established by the Environmental Protection Agency pursuant to the Clean Air Act.

-- EPA state and areawide water quality management programs pursuant to the Clean Water Act.

-- EPA's proposed program to define consolidated and consistent requirements for issuing permits under the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, and the Safe Drinking Water Act.

We also conducted detailed studies of attempts to apply interagency collaborative management planning techniques to coastal policy conflicts in Grays Harbor Estuary, Washington, San Franciso Bay, California, and the Lower Willamette River, Oregon.

Increasing the predictablity and consistency of regulatory processes is a goal that is widely supported, not only by applicants, environmental groups and other citizens, but also by local, state and Federal governments in coastal areas. There is widespread recognition that improvements are needed to anticipate, avoid and resolve conflicts, expedite the review of permits and lower the cost of the regulatory system. Increased predictability and consistency in coastal regulation does not need to be obtained at the expense of other important coastal management goals; rather, it can help assure that these goals will be met. For example, improvements in the regulatory system can also lead to long-term protection of significant coastal resources, while allowing for needed economic development in the most suitable coastal locations. Considerable experimentation and effort is already taking place in coastal states on methods of achieving these goals. The recommendations in this review are part of a continuing effort to encourage the various levels of government to work more effectively toward common goals in specific and sensitive coastal areas, after broader policies and procedures for managing development throughout a state's entire coastline have been agreed upon.

II. GENERAL CONCLUSIONS AND RECOMMENDATIONS

As we have increased the protection of valuable coastal resources during the past two decades, our regulatory system has become more complex. Most coastal development proposals are approved without undue problems. In coastal areas where complex natural resource and economic development issues must be balanced within limited geographic boundaries, the system of case-by-case review by multiple agencies often leads to delays, protracted disputes, loss of valuable habitats and considerable uncertainty for applicants, agencies, and interested citizens. Problems arise as a result of inconsistent policies among government agencies, lack of guidance to applicants and others about agency policies that will be applicable to specific permitting decisions, inability to address issues of cumulative impact, excessive costs to applicants and the public, and real and perceived misuses of case-by-case permit review procedures. Problems also arise when development interests fail to consider natural values early in project planning, especially in areas where local plans and zoning ordinances do not require such consideration.

Considerable work is being done at all levels of government on ways to alleviate these problems. Federal and state agencies are employing or investigating consolidated and joint application and review procedures, stratified and general permitting, mandatory consistency requirements, preapplication and permit tracking services, consolidation and delegation of permit authorities, and various time-limiting techniques. Nonetheless, more can be done.

Specific recommendations are set forth in Section VI of this chapter with respect to improvements in the Federal programs that have the most significant impact on a wide range of efforts to manage special areas of the coast. In general, a number of points stand out that apply to many of the programs analyzed. These general conclusions and recommendations are as follows:

A. Federal regulations governing permits for development in shoreline and wetland areas do not include sufficient substantive guidance with respect to key regulatory terms.

As indicated in Section IV, Federal regulations typically contain only very general statements of substantive regulatory policy, leading to a high degree of uncertainty in the permit process and inconsistent guidance to applicants. In special geographic areas of the coastal zone, where competition between resource protection and development tends to be intense, and where numerous Federal, state, and local agencies are involved in permitting decisions, advance substantive guidance is particularly necessary.

There is a critical need for Federal regulations and guidelines to clarify and define standards for the mitigation of adverse impacts of dredging and filling and structures in wetlands and intertidal areas, and for requiring water-dependent or water-related uses of shorelines and land created by the fill of such areas.

Federal resource agencies and the Army Corps of Engineers do not currently have standard approaches or requirements for requesting the mitigation of adverse impacts of development in wetland or intertidal areas. Mitigation policies developed for specific plans or permit conditions vary from one agency to another and from one part of the country to another within an agency. For example, wildlife agencies and the Corps in one region of the country may allow unavoidable wetland losses to be mitigated by limiting the magnitude of the proposed project. The same agencies in another region may require that losses be compensated for by replacing or providing substitute resources or environments. To many applicants, the operative agency practice seems to be, "get whatever you can" based on the latest technical conference paper or the political situation in the area. For example, a Port official commented on his problems in obtaining a clear policy on mitigation from Federal agencies for a dredging proposal;

> "At each meeting, one or more of the agencies demand something additional which they have thought of since the last meeting. They have taken the position that if these conditions are not met, they will revert back to their original objections to the permit. I hope it is apparent from [this example] that there are no bounds to mitigation requests. It seems to be 'all the traffic will bear!"

The Department of the Interior's Fish and Wildlife Service has recently taken steps to clarify agency policy for the mitigation of adverse impacts of Federal and federally permitted developments on fish and wildlife resources.

Agency interpretations of the extent to which proposed activities involving alteration of wetlands must be water-dependent or water-related also vary. For example, the Regulatory Program of the Army Corps of Engineers indicates that, when the District Engineer evaluates whether an alteration is necessary, he or she shall consider:

> "Whether the proposed activity is primarily dependent on being located in or in close proximity to the aquatic environment and whether feasible alternative sites are available. The applicant must provide sufficient information on the need to locate the proposed activity in the wetland and must provide data on the basis of which the availability of feasible alternative sites exists."

EPA's proposed regulations for Section 404(b)(1) of the Clean Water Act have similar provisions. However, neither set of regulations provides further guidance to agency personnel on the meaning of water dependency, and neither agency has nonregulatory guidelines on the subject. As a result, field personnel use their own judgments and attitudes on the issue on a case-by-case basis, and they may, or may not, be consistent in practice.

Recommendations

Federal resource agencies and the Army Corps of Engineers should develop uniform substantive guidance for field personnel with respect to key regulatory terms that affect permitting for development in wetland and shoreline areas. A number of states also have similar requirements that should be taken into account in developing substantive Federal guidance on these matters.

B. Federal regulatory agencies do not have uniform techniques for making key regulatory assessments related to development in shoreline and wetland areas.

Before substantive judgments can be made about matters such as mitigation requirements for a proposed project or water dependency, Federal regulators are commonly required to measure cumulative environmental impacts, assess relative project needs and alternatives, and estimate the effects of wetland or shoreline alterations. The methods and techniques for making these assessments are rarely specified in advance and often developed on a case-bycase basis, thus burdening applicants and agency representatives with the development of such techniques and leaving applicants and others uncertain how proposals are to be evaluated.

For example, one of the criteria used in evaluating every application for an Army Corps of Engineers permit for the alteration of wetlands is the relative extent of the public and private need for the proposed structure or work in the navigable waters of the United States. No permit will be granted to work in wetlands by the Corps unless the proposed alteration is necessary to realize benefits that outweigh the associated damages to the wetlands. These concepts of need and effect are also considered by the other Federal agencies that review Corps permit applications under the Fish and Wildife Coordination Act and other laws. Neither the Corps nor the Fish and Wildlife Service has written guidance for field personnel on techniques for assessment of need. It is addressed on an ad hoc basis in each individual case rather than in a systematic fashion.

Recommendations

A set of standard methods and techniques would be useful for making assessments in special coastal areas. The Council on Environmental Quality and the Environmental Protection Agency, in cooperation with the Corps of Engineers, should jointly develop and publish guidelines for assessment methods and techniques involving dredge and fill or other shoreline alteration decisions, pursuant to their roles in administering the National Environmental Policy Act and the Clean Water Act. These guidelines should be developed in close coordination with the Water Resources Council and other interested state and Federal agencies, and should be sufficiently flexible to allow for differences between regions and state practices.

C. Federal regulations do not provide sufficient authority and support for special area management planning.

In the 1980 amendments to the Coastal Zone Management Act, Congress adopted a new policy to encourage special area management plans. The term "special area management plan" is defined as: "a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone." Such plans are designed to be an integral part of comprehensive state coastal zone management programs. Typically they provide a detailed expression of the state's coastal policies and use standards for specific portions of the coastal area, such as an estuary, bay or port district.

As discussed in Section V, special area management planning can potentially lead to long-term improvements in the predictability and consistency of state and Federal permitting, provide long-term protection for specific resource areas, help avoid or resolve conflicts over specific permits, and provide substantial savings in time and money for applicants, interest groups and the public. Some modifications to Federal regulations are necessary if the process is to be used more widely. These changes should not modify the substance of existing environmental programs, only the procedures for implementing these requirements. Agency officials can implement more effectively the substantive requirements of existing Federal laws if they are authorized to use plans as a part of their regulatory process.

Full utilization of the special area planning technique will depend on whether Federal agencies are legally authorized to make binding policy commitments to such plans for use in subsequent review of permit applications. If agencies are prevented from making such commitments, the influence of such plans is likely to last only as long as participating representatives maintain their "informal" coordination and cooperation. As indicated in the discussion of the Grays Harbor Estuary Plan, while Federal agency representatives that participated in the planning process may be willing to endorse the Plan and use it as a major influence in their review and decisions on permits, they are not confident that the Plan would have any formal or legally binding influence over their actions. They cannot assure that the Plan could be used in a court test as an expression of agency policy in the area, or that a new agency administrator would not reject the commitments of previous agency representatives.

In addition, full utilization of the special area planning technique requires agency commitment to the concept of tiered or stratified regulation. Although CEQ regulations encourage Federal agencies to tier their environmental impact statements to avoid repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review, the concept has been applied primarily in the context of project-related actions such as highways, rights-of-way,

and major construction projects. Currently Federal agencies do not generally initiate environmental impact assessments or statements until specific project applications are submitted for review. The current regulatory system of these Federal agencies is unclear as to how or whether proposed area management plans accompanied by programmatic environmental impact statements can be approved and used as a basis for making limited regulatory findings for all prospective activities. As indicated in the Grays Harbor case study, discussed in Section V-B, the Office of Coastal Zone Management has addressed this problem by serving as lead agency for the programmatic environmental impact statement.

Finally, special area management planning processes can also require substantial amounts of professional staff time and funds for data collection, environmental analysis, planning, citizen participation, environmental assessment and associated activities. Some funds are available to state and local agencies for such expenses through Section 306 (program administration) and Section 315 (estuarine sanctuaries) of the Coastal Zone Management Act. However, significant additional assistance would become available if the agencies responsible for a variety of other Federal planning programs were to establish special area management planning as an eligible cost for planning assistance by appropriate recognition in agency regulations and guidelines.

Recommendations

Regulations should be changed for a number of programs that play key roles in the management of special coastal areas to enable agency representatives to develop and endorse formally or otherwise approve special area management plans for use in subsequent permit reviews. Those agencies should establish guidelines and conditions, upon which such development, endorsement and approval will take place; the forms of necessary agreements; and determine the effect of such approved plans on agency permit review comments and decisions. In addition, agency regulations and guidelines should be revised to ensure that special area management planning costs are eligible for planning assistance.

D. Federal agencies lack an appropriate forum for resolution of problems impeding collaborative planning efforts.

Experience to date with the application of special area management concepts by Federal agencies indicates that an interagency committee at the agency headquarters level would be useful in dealing with the opportunities and constraints identified by this review. No such forum currently exists for dealing with the problem of agency collaboration in special area management efforts. Such a committee could undertake the following activities:

- Develop an interagency consensus on key national policies, standards and definitions involved in the interpretation of Federal coastal regulations (e.g., mitigation and water-dependency).

- Develop standardized guidelines for the assessment of environmental impacts and the public interest involved in interpretation of Federal permit regulations (e.g., cumulative impacts, need, alternatives).

- Oversee the revisions to Federal regulations necessary to provide explicit authority for development and legally binding use of the special area management planning process, and develop nonregulatory guidelines and approaches for enforcing the results of such processes.

- Initiate and oversee a study of Federal financial assistance programs that could be used to fund the development of special area management plans and to implement the nonregulatory aspects of those plans.

- Exchange technical information on the development and implementation of special area management plans and provide technical assistance to Federal field personnel and state and local governments in utilizing the special area management planning process.

Recommendations

An interagency committee should be established to assist efforts to coordinate and simplify Federal regulations in special coastal areas. This committee should be chaired by a representative of the Council on Environmental Quality, and include voting representatives from the Environmental Protection Agency, the Fish and Wildlife S ervice, the Army Corps of Engineers, the National Marine Fisheries Service, the Office of Coastal Zone Management and the Water Resources Council.

Because of their potential interest in special area management planning (but less direct involvement in such plans on a routine basis) the following agencies should be involved on an informal basis in committee deliberations: the Department of Housing and Urban Development; the Department of Energy; the Department of Transportation; The Department of the Interior's Bureau of Land Management, Geological Survey, Heritage Conservation and Recreation Service, and National Park Service; the Department of Commerce's Economic Development Administration, Maritime Administration, and National Sea Grant Program; the Advisory Council on Historic Preservation; and the Office of Management and Budget.

The committee should be encouraged to involve other agencies, interest groups, state, regional, and local officials, academic and research institutions, ports and the public in its deliberations, as necessary. One approach might be to offer an open chair at the meetings of this committee to a local or state expert and/or decisionmaker, depending on the matter before the committee, as a means of incorporating such expertise.

III. PROBLEMS OF THE EXISTING REGULATORY SYSTEM

This section of the chapter discusses the evolution of the Federal and state environmental regulatory process during the last two decades, the typical types of conflicts generated by multi-agency review of development proposals, and the kinds of generic problems created by such review

A. Recent Evolution of the Regulatory Process

An important result of increased environmental awareness and concern during the 1960s was a flurry of legislative activity at both state and national levels, and judicial challenges that changed the way in which some existing laws were administered. Congress passed a number of laws that set standards and procedures for meeting national air and water quality requirements, and gave new authority to Federal agencies to implement them. Other Federal assistance programs were designed to encourage states to develop their own regulatory programs; states were encouraged to pass laws involving state agencies in regulating development in wetlands, beaches, and other sensitive natural areas that had historically been managed by local governments. In addition, laws were passed to assure full consideration of environmental values and fish and wildlife resources in Federal decisionmaking processes. Most of these new state and Federal laws and court decisions expanded the rights of citizens and interest groups to influence and participate in the regulatory process.

While these changes dramatically increased protection for valuable coastal resources, the systems for managing coastal development also became pluralistic, complex and costly. Development that once had been controlled primarily by local government through local planning and zoning permits, or not controlled at all, is now influenced by numerous Federal, state and local agencies, each with their own permits or separate review requirements. Developers and citizens are now faced with, not only the planning and zoning controls of local government, but also numerous single purpose performance standard programs, each requiring several reviews and permits. For example, routine dredging applications in San Francisco Bay typically require the review of five state agencies and four Federal agencies, in addition to the agencies of the local jurisdiction involved. According to local officials, over 700 permits were needed for construction and operation of the SOHIO oil port and transshipment facility in the Port of Long Beach. The company spent nearly $60 million on the development of this project prior to the withdrawal of its applications in 1979.

In spite of this complexity, the large majority of coastal development projects are approved. Many permits are conditioned to meet the requirements of state, local and Federal laws, but these conditions are seldom so onerous that projects cannot be completed. The conditions can involve added costs that must be balanced against public benefits of improved project design. For example, during the 4 years that the

California Coastal Commission approved permits for all coastal development under Proposition 20, 97 percent of more than 25,000 development proposals were approved. During the last 2 1/2 years of administering the Massachusetts Wetlands Protection Act, the state's Division of Wetlands reports that less than 10 percent of wetlands orders by local conservation commissions were appealed. At the national level, the Corps of Engineers reports that in Fiscal Year 1979 less than 1 percent of all permit applications were referred to its Washington headquarters for resolution of conflicts. Of the 16,000 permits or letters of permission processed by the Corps in that year, 72 percent were approved with no problems, and most of the remainder were handled at the district level.

Although these statistics do not reflect the costs incurred by those who withdraw applications prior to completion of the regulatory process due to delay, unacceptable conditions, or general frustration with the uncertainty of the outcome; the proportion of permit applications that raise significant problems of interagency conflict or coordination is very small, in comparison to those that are approved with no conflicts. The small percentage of permit actions that involve denials, appeals or conflict are typically larger projects which have a greater potential for significant impacts on natural resources or economic development. Conflicts over these projects can take large amounts of time and money for environmental analysis, litigation, administrative appeals, dispute resolution and other results of conflict and delay. However, it is recognized that in some cases conflicts between agencies with different mandates serve to identify and protect the overall public interest, and these expenditures are worthwhile.

B. Conflicts Generated by Multi-Agency Review

The pluralistic system of regulatory review that has developed over the last two decades has, however, contributed to protracted disputes in some instances and has led to the need for increased coordination among Federal, state and local agencies. A typical conflict situation may involve a developer, port authority, or public works agency that reaches agreement with one or more local governments on a proposed project, only to have the project denied after lengthy and costly proceedings by a state or Federal agency. In some cases both local and state approvals may be granted, but a Federal permitting agency may deny the project on the basis of its own requirements, other Federal agency comments or those from citizens or interest groups.

Such conflicts can occur within a single level of government. For example, local development projects which are proposed in order to carry out plans supported or approved by one Federal agency may subsequently be denied by another Federal regulatory agency. A state or local government may have invested considerable time and money in preparing a comprehensive land use plan, airport or highway plan, or economic development plan with Federal funding agency assistance and concurrence -- only to have projects needed to implement the plan blocked by a Federal regulatory agency that did not participate in such plans. State or

Federal resource agencies may also disagree among themselves on how projects should be developed. Several classic examples of such conflicts were cited by an agency official providing comments for this Review:

> "A water quality agency, in its review of a permit for a shoreline development, required that it be constructed on fill that would seal off leachate from an old woodwaste disposal area. A wildlife agency refused to approve the permit because the fill would remove some wetland and required that the project be constructed on a structure. Either way was acceptable to the developer, but the two agencies did not agree. The proposal, caught in this delay, lost financing and fell through. In other situations, agencies responsible for waterfowl tend to support marsh creation projects while agencies managing fish will resist any modification in aquatic areas. This conflict often frustrates mitigation proposals (since mitigation proposals often benefit one species at the expense of another) and enhancement proposals. Controversies over mitigation or enhancement proposals can be as great as development proposals. This conflict between 'environmental protection' agencies is often very confusing to local officials and is perhaps their greatest frustration in dealing with agencies."

Conflicts such as these can delay or prevent needed economic development or energy projects, lead to loss of valuable coastal resources, or cause excessive costs to both private investors and the public. The Port of Baltimore, for example, maintains that its dredge disposal costs have increased 400 percent over the last 4 years because of delays in obtaining necessary Federal and state permits largely due to intergovernmental conflict and environmental litigation over spoil disposal on two nearby islands. Too often, such conflicts emerge from the process after specific sites have been selected, land acquired, local permits obtained, and large amounts of money invested in engineering drawings, site investigations and environmental analyses.

These kinds of conflicts are often resolved in a way that leads to frustration with government. The uncertainty of the outcome and difficulties of the regulatory process has a chilling effect on some citizens' willingness to engage in it at all. In other cases, developers and local proponents may try to overturn negative Federal agency decisions on a project by political intercession rather than seek a more appropriate location or produce a design that would meet the agencies' requirements. In Grays Harbor, Washington, for example, 39 acres of valuable tidelands were lost when state and Congressional legislators intervened in a conflict between the local Port Authority and state and Federal resource agencies over the filling of land for an oil platform construction facility. Four years later, the filled area remains vacant and unused. In Monterey, California, the famous Cannery Row was excised from the State Coastal Commission's jurisdiction by the state legislature when efforts to resolve conflicts between development and preservation interests broke down. Such political intercession may foreclose opportunities for citizens, interest groups or property owners to influence the outcome of

regulatory decisions, or, at the least, cause them to perceive that they have not had an equitable chance to do so. The perception that narrow special interests are often the beneficiaries of such intercession damages the credibility of the entire regulatory process.

C. Generic Problems

The existing regulatory system is largely reactive. It fails to anticipate potential conflicts and provide mechanisms for avoiding them, or to provide for a clear and unified framework of public policy to guide the balancing of public costs and benefits of individual agency decisions. As a result, the following generic types of problems continue, underlying many of the conflict situations described above:

1. Inconsistent government policies

Inconsistent government policies can lead to unnecessary conflicts when development proposals are reviewed. For example, if local government plans designate wetland areas for housing or other nonwater related uses on zoning maps, property owners and prospective developers may be falsely encouraged to propose development that is likely to be denied, since it may be the policy of a state coastal zone management program or Federal agencies to discourage such uses of wetlands. In Marco Island, Florida, for example, the Deltona Corporation received local zoning and state approvals for the proposed development of thousands of dwellings in wetland areas, only to have its proposals denied by Federal regulatory agencies. The Corporation incurred substantial losses in the lengthy battle over these plans.

Approval of a project proposal at the state or local level without adequate review of Federal requirements often puts additional pressure on Federal regulatory agencies to approve projects, especially those considered to serve the local or state public interest. For example, in states with approved coastal management programs, developers often misinterpret the Federal consistency provisions of the Coastal Zone Management Act as requiring Federal agencies to accommodate local or state desires to allow development that is allowed by the approved state program. The problems created by this lack of understanding of the limits of Federal consistency were described by one Federal agency representative participating in this review as follows:

"On several occasions I have been present while developers, with local planners at their side, argue that since their development is consistent with the local Shoreline Master Plan, (the National Marine Fisheries Service) and (the Fish and Wildlife Service) must consent to (Corps of Engineers) permits. When they discover (the Coastal Zone Management Act) does not provide an automatic path through the permitting process, there is a sense of betrayal. They believe they had followed the proper procedures, and are surprised to discover that FWS guidelines can prohibit something approved in

their local program. Thus, it is frequently impossible for a developer acting in good faith to discuss a project with his local government and thereby get a complete picture of the regulatory hurdles he faces."

2. Uncertainty in the permit process

As a result of the "performance standard" approach to environmental regulation, most Federal permitting programs lack sufficiently specific policies to guide applicants. Federal regulations tend to mandate consideration of broad areas of concern, or require documentation of certain findings, but provide only very general statements of substantive policy that could guide specific planning decisions. Agencies rely only upon case-by-case review of development proposals, based on data collection and analysis of the specific proposed site and the detailed characteristics of the proposal. Even the broad planning considerations involved in projects, such as suitability and need at the proposed location, or consideration of alternative sites, typically are addressed only when an application for a permit is submitted.

Agency regulations typically set forth processes for making decisions that require consideration of alternatives, environmental impacts, or documentation of the need for development proposals. However, they do not provide specific substantive direction to administrators or the public on what documentation is sufficient, or even clear definitions of such matters as water dependency, mitigation requirements, or cumulative impacts. For example, Corps of Engineers' regulatory criteria, to be considered in the review of permits for dredging and spoil disposal, include factors such as "the relative extent of the public and private need for the proposed structure or work" and "the extent and performance 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." Because these criteria provide little substantive guidance, the Corps and other Federal agencies must develop more specific guidance tailored to specific projects or areas. For example, an association of property owners, with holdings adjacent to Belvedere Lagoon in California, attempted for more than two years to secure permits for dredging the Lagoon, permits that consultants said were necessary to preserve the Lagoon for fishing, swimming, boating and related recreational activities and to avoid future fish kills, mudflats, algae blooms and stagnation. After this delay, the Corps and EPA developed new technical criteria to determine whether the project would cause significant environmental impacts. Based on new tests using these more specific criteria, the Corps determined that the project complied with the general criteria.

Even in areas where national policies have been developed, they tend to be so general that administrators have almost unlimited discretion to interpret their meaning in the case of each permit application or plan. For example, Corps regulations provide that in determining whether a proposed alteration of wetlands is necessary, consideration must be given to whether or not the proposed activity for which the alteration is to be made is dependent on location in, or in close proximity to the aquatic environment. Because the concept of water dependency is not fully defined, each District

Engineer must interpret the criteria on their own, and this judgment may differ from that of other Corps officials and Federal and state agencies.

In contrast to the general procedural criteria of the Corps' regulations, EPA's revisions to regulations for Section 404(b)(1) of the Clean Water Act include significantly greater guidance with respect to determinations to be made in regional offices regarding discharge of dredged and fill materials in U.S. waters. For each area of concern, such as salinity or mud flats, EPA's proposed guidelines describe environmental characteristics and values, actions that might result in the loss of those values, guidelines for minimizing impacts, and other special considerations. These guidelines recognize that individual judgment must be exercised in each case, and do not prescribe quantified standards or thresholds by which every project or plan is to be judged; they do, however, provide an important measure of substantive guidance to field personnel regarding the standards by which such judgments are to be made. By law these two sets of regulations go together to control the discharge of dredged or fill materials under Section 404 permits issued by the COE.

Although the more general system allows permitting agencies to maintain maximum flexibility to consider all relevant factors and interests before making decisions, the uncertainty inherent in this approach can work against the interest of both applicants and conservation advocates. The risk of investments in development proposals is greatly affected by the predictability and timing of government regulatory decisions. Investors want to know what the policies and requirements are, where these apply geographically, how the agencies will make their decisions, and when they will receive answers. Uncertainty leads to greater costs for applicants in developing their proposals. Conservationists and other citizens also want to know what the agency's policies and requirements for development are, how these will affect valuable resources, and what parts of an area are to be protected from development over the long-term future. Property owners want to know how their neighborhoods are likely to change in the future so that their investments and quality of life are protected.

In addition, the uncertainties of the regulatory system have broader costs. As indicated above, they may lead to political intercession in specific decisions that undermines the public perception of the legitimacy of the governmental process. They also lead to intense frustrations with the process. As one commentor noted, "applicants are not mind readers." This reaction was articulated differently by another reviewer of this study, who claimed that applicants are forced to respond to repeated vague requests for project information or for the redesign of their projects until the personal expectations of the reviewer are met, causing considerable uncertainty, delay and added expense.

Finally, these uncertainties can also lead to inequities in the treatment of similar problems. For example, in a December 1977 study of the Corps of Engineers' regulatory program, the General Accounting Office reported that the Corps' "guidance for evaluating permit applications can be improved," and indicated that the Corps' headquarters should provide better guidelines and criteria to districts for evaluating permits

involving wetlands. GAO pointed out that of the five Corps districts it evaluated, each considered wetlands protection an objective of the Clean Water Act, Section 404 Program, but employed different methods to achieve that objective, and had quite different records of approvals and denials for similar actions involving wetlands. The report concluded that, "Differences in the application of wetlands protection measures caused unequal treatment of applicants desiring to perform work in wetlands areas."

3. Failure to address cumulative impacts

The cumulative impacts of multiple permit decisions often cannot be assessed adequately through the review of single applications. The long-term consequences of development in a given area are difficult to control through a case-by-case review of each project application. Protection of the natural functions of an ecosystem requires assessment of long-term cumulative impacts of many projects, not just those for which applications have been submitted. Balancing economic development and environmental concerns often requires that ecosystems be dealt with in their entirety.

For example, at the time a project is proposed, the natural interaction of various parts of an estuary, bay or watershed cannot be adequately considered when permitting agencies deal with only one application. In 1979, the Port of Coos Bay, Oregon, applied to local, state and Federal agencies for two permits -- one for a dock in the Bay's North Spit and another for a trawler basin associated with the dock. Both projects were part of the Port's long-range plan for industrializing an estuarine shoreline. Both also involved alteration of wetlands, a matter of considerable concern to the agencies involved because Coos Bay had lost 85 percent of its wetlands to fill since 1892. As a result of public and agency concerns about the impacts of the proposals, the Port withdrew its application for the trawler basin. This action left the agencies reviewing the application for the dock with an expectation of potential secondary or cumulative impacts of the dock proposal, but with no legal means to address those impacts, given the limitations of the dock application before them. The dock was ultimately approved with no mention of the broader implications of the project in the Corps' permit.

The 1977 GAO report on the Corps of Engineers' permitting program noted that, although the Corps' regulations require consideration of cumulative impacts, neither the regulations nor management directives specifically provide means for identifying and evaluating cumulative effects. This report indicated that an in-house Corps study in 1976 identified the evaluation of cumulative impacts of proposed works as a major district problem, due to the lack of methods or data to perform cumulative impact assessments. The Corps has recently responded to this need by requesting proposals from contractors to study the cumulative impact problem and to develop technical methods for cumulative impact assessment of permit activity.

4. The costs of case-by-case permit review

Case-by-case review of permit applications can involve excessive costs to applicants and the public. In many areas where development involves shoreline alteration, a number of state and Federal agencies review the same project proposals, and are concerned with the same or similar effects of these proposals on natural resources. Typically, the U.S. Fish and Wildlife Service, National Marine Fisheries Service and Environmental Protection Agency, as well as state fishery, wildlife, public lands, and water quality agencies, all review the applications for projects involving the discharge of dredged or fill material or wetland alteration. Each of these agencies may request or collect its own data, conduct a separate environmental analysis, and reach its own decision. In some cases, each of these agencies may collect and analyze data repeatedly for each permit application in the same area. Applicants for development in such areas may be required to submit information that has already been acquired by the agencies from previous applicants. Redundant, uncoordinated, and unpredictable agency data collection, analyses, and review procedures increase public taxes. Those who invest in property and development also bear added costs in the form of interest on borrowing, property taxes or option fees, professional fees and administrative expenses.

For example, before the Baltimore and Norfolk Districts of the Corps of Engineers revised their procedures for reviewing permit applications for dredging and fill in wetlands, the site of almost every proposed project was visited separately by the Fish and Wildlife Service or the National Marine Fisheries Service in these Districts as part of the application review. In the case of a proposed Corps harbor maintenance dredging project to serve a seafood processing plant on Maryland's Eastern Shore, the owner of the plant and the adjacent property where the dredged materials were to be disposed claimed that nearly 200 various government officials visited the site during the 6 years before the project was approved in 1979 (with conditions that minimized its environmental damage). A June 1980 GAO report on processing Corps permits for dredging projects indicated that overlapping roles and duplication of efforts were still contributing to permit delays. In the Corps' Districts it reviewed, both FWS and NMFS were receiving all public notices regarding dredging applications and often performing field reviews on the same project. Encouraging progress has been made by the COE in reducing this problem by development of interagency agreements and joint Federal-state review procedures, described in Section IV-A.

There are often substantial costs to natural resources associated with case-by-case review of completed project applications. Controversy or delay resulting from a wildlife agency objection to a project application, in which substantial investments may have been committed, often leads to political intercession on behalf of the applicant and loss of an environmental resource.

No complete estimate exists of the costs associated with redundancy, delays and conflicts resulting from a regulatory system that relies

primarily on case-by-case permit review. However, some of the comments received during this review suggest that the costs are substantial. These include the following:

- A port official noted that "A rule of thumb in the [port] industry is that delay alone [in regulatory proceedings] increases total project costs by 1 percent per month."

- The same official also noted that "There are also substantial environmental costs caused by delay. Millions of gallons of sewage have been dumped [into rivers and bays] during delays in getting agreement between agencies for waste water treatment system improvements."

- A conservation group indicated that "The Corps of Engineers spends $30 to $40 million per year on environmental impact studies, and millions more in litigation over their decisions. Tremendous cost savings could be realized by a new approach to these decisions...."

- A city official noted that "We spent between $130,000 and $150,000 producing a regional plan [to address regulatory conflicts] for the Baltimore Metropolitan Coastal Area. [By comparison,] the environmental assessment for one permit in this area cost $1.2 million. [For another example,] Bethlehem Steel Company claims that delays in obtaining permits cost an additional $500,000 to $1 million on recent construction projects in the area. I do not think you would have trouble attracting funds [for improving the regulatory system] from industry."

5. Misuse of case-by-case permit procedures

It is often alleged that there is a misuse of case-by-case permit procedures by those who wish to impede economic development, or by others who wish to circumvent sound requirements for environmental protection.

Those proposing projects frequently claim that permit review procedures provide too many opportunities for opponents of economic growth or new development to veto projects. They claim that information is withheld during the planning of projects, when it could be used to improve the project design; and then used against the project when the opponents' voices are most effective in the regulatory process, -- such as before administrators or commissions that are most responsive to environmental concerns. Project proponents often claim that since projects typically require several stages of approval through different agencies, they can be stopped by opponents by gaining cumulative concessions from agencies for conditions on projects by finding the "weak link" in the chain of regulatory decisions, by challenging projects in the court when opponents fail to get what they want in administrative procedures, or by so slowing the process with minor objections that the project becomes uneconomic. For example, late in the multi-year battle over Tellico Dam in Tennessee, environmental groups allegedly sought and found an endangered species -- the snail darter -- after failing to stop the project on

other grounds in the administrative proceedings. This led to Congressional intercession in the form of changes to the Endangered Species Act.

On the other side, citizens and environmental groups often claim that some public agencies view the public welfare too narrowly by reviewing projects in a manner that reflects only interests in business, economic development, taxes, or jobs and that environmental concerns are too often ignored. They claim that when legitimate environmental concerns or requirements are used to condition or deny development proposals, applicants often label the "bureaucratic permit process" as an arbitrary abuse of public authority, a taking of private property without compensation, or otherwise try to avoid complying with the law. They frequently allege that some development interests purposely avoid addressing environmental concerns through political intercession on projects or legislative challenges to legal requirements. Many coastal management laws have been challenged repeatedly in state legislatures on the basis of "horror stories" of delay or increased costs caused by regulatory procedures. For example, when Brown and Root withdrew a proposal in 1978 for an OCS platform fabrication facility near Astoria, Oregon, local officials and the press blamed state and Federal environmental permit procedures, particularly state mitigation requirements for wetland alterations. Later information revealed that while the agencies were working toward approval of the facility with conditions to safeguard the environment, the firm withdrew its proposal because the market was not favorable for its products in Alaska lease sale areas and antitrust actions had been commenced against its parent company.

Environmental and other public interest groups point out that proponents of projects are typically well-financed and have adequate legal representation for their private interests, while public groups have only limited (often volunteer) resources to participate in regulatory proceedings. This, they claim, accounts for those few situations when such groups avoid commenting in lower level (sometimes hostile) proceedings, in favor of commenting in later proceedings where they have the most influence. Citizen groups also claim that some developers purposely "wear down the opposition" by scheduling, then canceling, public hearings on proposals or making repeated minor revisions to proposals, and selecting an opportune time for processing applications when the initial controversy has subsided. However, small developers or private landowners often have less resources and expertise to use in this process than such "public" groups, and complain about the undue regulatory burden imposed by what they see as unrealistic zealots.

To some extent these generic types of problems of the existing regulatory systems are found wherever development is managed by government agencies with overlapping legal jurisdictions over the same projects or resources. However, they become intensified in the nation's coastal zone, which contains many limited geographic areas where unique and valuable natural functions that serve fish and wildlife resources compete with economic functions such as port and urban development. Any project involving work in the coastal waters of the United States will automatically be subject to review by at least four Federal agencies, typically

under five separate statutes. Many of the most sensitive areas in the coastal zone are enclosed ecosystems such as bays and estuaries, where development impacts are likely to spill over the boundaries of several local jurisdictions. Because the resources at stake are likely to be of more than usual significance, state agencies are also likely to have some control over proposed projects. Finally, these regulatory problems tend to become exaggerated in such areas when repeated conflicts cause normal avenues of communication and cooperation to become closed.

IV. TECHNIQUES FOR IMPROVED INTERGOVERNMENTAL COORDINATION

Federal, state, and local governments have attempted to address, through a variety of mechanisms, the problems of intergovernmental coordination created by the case-by-case regulatory systems in especially sensitive and controversial areas, with varying degrees of success. This section of the report discusses a number of the most common attempted solutions -- consolidated and joint application and review procedures, stratified and general permitting, mandatory consistency requirements, preapplication and permit tracking services, consolidation of permit authorities, delegation of permit authorities, and various time-limiting techniques. The next section of the report discusses a final approach which is still in its early stages of development -- special area management planning.

A. Consolidated or Joint Application and Review Procedures

This approach to improved coordination stresses reduction in redundant permit review and assessment activities by different agencies with similar responsibilities. The approach typically involves techniques such as joint application forms, joint hearings, formalized coordination and review procedures, consolidated regulations, coordinated or consolidated environmental assessments, "one-stop" permit processes and concurrent application processing schedules. An example of this approach is the Corps of Engineers institution of joint processing of permits involving dredging or filling of wetlands with 10 states as well as other Federal agencies such as in its Norfolk, Baltimore, and Detroit Districts. This is an informal procedure that usually involves representatives of the Corps of Engineers, EPA, the Fish and Wildlife Service, the National Marine Fisheries Service, and interested state agencies, who meet together periodically to review permit applications. According to some participants in the Norfolk process, staff time has been substantially reduced for processing permits, data collection and site visits have been combined, agencies are more effective in reviewing more projects, and conflicts have been reduced. However, GAO staff have recently reviewed processing times in several Corps districts and found that "in the joint processing procedures we examined, success in reducing processing time has been minimal and total processing time may even have been increased."

Another common example of this approach is the regulations of the Council on Environmental Quality for implementing the National Environmental Policy Act. These regulations require Federal agencies to cooperate with state and local agencies to the fullest extent possible to reduce duplication between NEPA and similar state and local requirements; the forms of this cooperation include joint planning processes, joint environmental research and studies, joint public hearings, and joint environmental assessments and impact statements.

While such procedural improvements have made government permit reviews more efficient and less costly, have provided for resolving conflicts among agencies, and have probably improved the quality and

consistency of decisions, they have not substantially improved the predictability of the review process. In addition, as joint processing and other consolidated procedures depend on specific project applications, they are unable to address adequately cumulative impacts of present and future permit decisions. However, the joint processing of several permits does help agency staff combine resources for data collection and research helping to address the cumulative impact problem.

B. Stratification of Permits and General Permitting

Stratification and general permitting techniques allow agencies to process permits for minor projects with simpler procedures than are used to process permits for major projects.

Florida's Environmental Land and Water Management Act of 1972 provides an example of the stratification technique. The Act allows the state to interpose a systematic state level review of community developments, such as large new communities and proposed major port facilities, which it determines will involve issues of more than local or regional concern; smaller scale routine development decisions of local significance continue to be processed at the local level. The Corps of Engineers' general permitting program demonstrates a similar technique at the Federal level. Under this program, a Corps District Office can issue a single permit, after public review and comment, to authorize many similar activities -- such as laying of submerged cables or construction of small private boat piers -- which are determined individually and cumulatively to have only minimal environmental impacts. When such a general permit has been issued for a category of activity, no individual processing is required to obtain a permit for a project in that category unless the District Engineer determines that the public interest requires a special review.

These techniques improve the efficiency and predictability of the permitting process, especially for minor projects. In its 1977 report on the Corps' permitting program, GAO reported that "The general permits resulted in less time and paperwork for the applicants and reviewing agency and demonstrated the effectiveness with which district operations can be carried out," and recommended that the program be expanded to all Corps Districts.

One of the COE districts has proposed the use of a general permit that would authorize certain activities if they are compatible with the approved coastal zone management program. The COE believes broader use of general permits in tandem with CZM plans may be a way of blending developmental needs with preservation needs in the coastal zone, while minimizing red tape and delays. The COE indicates that many general permits have been issued and are being proposed to address the cumulative impact problem, which will afford predictability for developments within

a specified area. However, they claim that the general permit program has been hampered by the statutory language of 404(e) authorizing general permits for 404 discharges, which limits their use to discharges that are similar in nature and have only minimal adverse individual cumulative impacts.

These techniques can create problems of consistency in the application of laws when their use is not guided by substantive policies or criteria. For example, the GAO study reported that while the Jacksonville District of the Corps issued a general permit covering an estimated 400 private piers built between October 1975 and September 1976 which received no individual evaluation or processing, the New Orleans District had no such general permit and was individually processing several hundred applications for private piers. As the GAO report also pointed out, these techniques rely in part on assessments of future cumulative impact even though satisfactory methods for assessing cumulative impacts may be lacking. Under general permitting techniques public notice and hearing procedures are waived in each individual case. Therefore, public access to the decisionmaking process is limited, and the public's ability to raise questions about impacts that differ from those originally anticipated is limited. Increased use of the general permit in tandem with special area management plans, discussed below, should be carefully studied before being implemented on a large scale.

C. Mandatory Consistency Requirements

Requirements for consistency between state and Federal actions have been included by Congress in the Federal Coastal Zone Management Act and by the Water Resources Council under the Water Resources Planning Act. These requirements condition Federal actions on consistency with related plans developed at the state or regional level.

Pursuant to Section 307 of the Coastal Zone Management Act, Federal agencies conducting or supporting activities directly affecting the coastal zone or undertaking development projects in the coastal zone must carry out those actions in a manner which is, to the maximum extent practicable, consistent with Federally-approved state coastal management programs. Any applicant for a required Federal license or permit to conduct an activity affecting land and water uses in the coastal zone must provide the licensing or permitting agency with a certification that such activity will be conducted in a manner consistent with the approved state program; in most cases, the state's coastal management agency must concur with the certification. Similarly, each River Basin Commission established under the Water Resources Planning Act is required to submit to the Water Resources Council for approval a "comprehensive, coordinated, joint plan" for water and related land resources development in the area, river basin or group of river basins for which the Commission was established. The Council has adopted a policy that water and related land resource projects of the Fish Fish and Wildlife Service, Corps of Engineers, and Soil Conservation Service, such as dams, water irrigation projects and dredging permits, must be consistent with the approved regional plans. The Council recently endorsed in principle a recommendation to broaden the consistency policy 278 to cover more Federal

agencies and Federal actions. A council work group is developing specific recommendations for consideration by the WRC in January 1981, with the intent that the expanded consistency policy be made a part of the principles, standards and procedures, thereby giving it the status of an executive order.

These mechanisms provide some substantial safeguards that actions of one level of government will not undermine the policies and interests of another level of government, and thus assure considerable consistency of government permit activities. However, they do not assure uniformity of government policies or responses to permit applications. They seldom work in an affirmative manner by requiring one level of government or agency to agree to a project if it is acceptable to other levels or agencies. In effect, these mechanisms assure that in a regulatory system involving possible multiple vetos, one veto at any level will be sufficient to stop a project. Thus they do not address the uncertainty caused by a multiple permit process unless combined with other kinds of more affirmative cooperation.

D. Preapplication Consultation, Applicant Referral and Permit Tracking Systems

A number of techniques have been designed to increase the information available to applicants and affected parties about regulatory requirements and procedures, and how, when and why permit decisions are made. Such techniques include open files of administrative and judicial records of precedent setting decisions, manuals for applications on program requirements and procedures, preapplication hearings or conferences, "ombudsman" agencies to refer applicants to all agencies which must review their projects and to guide applicants through the system, and mechanisms for tracking various permit processes so that affected parties and regulators know where in the system a proposal is currently being considered and where the process is being slowed by disputes.

For example, Oregon has established a small office for coordination of environmental permits which provides a registry or directory of permits and other information services, including a toll-free telephone line so anyone can get information on development requirements. Michigan has established a Coastal and Inland Waters Permits Information System which provides a computerized profile of each application file, a list and description of applications on file, the status of each active permit, and lists of open violation cases. These services improve the fairness of the regulatory process and, to a limited degree, increase its efficiency and predictability. Efficiency is improved by assuring that applicants know the applicable requirements so projects are likely to be better designed before they enter the regulatory process, and some proposals that could cause conflicts may be discouraged.

Tracking systems to help assure that permits are not indefinitely delayed at some step in the process, pending receipt of other new information or interagency agreements. There are obvious limits to these techniques in improving the quality, predictability, or efficiency of the process, because in general they do not attempt to influence either the way in which decisions

are reached or the process itself. Officials assisting applicants to understand the permit requirements for proposed projects seldom have the authority to expedite the processing of applications or the timing of decisions by the agencies involved, nor can they influence the substantive outcome of the permit decisions. Some exceptions to this limited authority exist in states that have centralized permit coordination agencies which can impose time limits on state and local permits, as described below; however, even in these states such programs have no influence over the timing of Federal permits.

E. Consolidation of Permit Authorities

Consolidation of permitting authorities into one agency is a technique for improving interagency coordination and resolving interagency conflicts typically used when major multi-jurisdictional issues are involved; it is often accompanied by investing the centralized agency with preemptive power over other levels of government.

For example, the State of Washington has established an Energy Facility Site Evaluation Council to consider the siting of major energy facilities on behalf of the state and local agencies that previously had authority over such projects. Representatives of these agencies and affected local governments have voting representation on this Council, but surrender their authority for making the decision on projects to the Governor, who is advised by the Council. The recently proposed Energy Mobilization Board is a Federal example of a similar response to the problems of the regulatory system that many have perceived as threatening the siting of nationally needed energy projects.

Not all consolidated authorities deal only with major facility siting. Four permits were required from different Virgin Islands agencies for shoreline alterations prior to passage of its Coastal Zone Management Act. The Act has created a single coastal permit process administered by the Department of Conservation and Cultural Affairs. Similarly, at the President's direction, EPA has recently consolidated several separate permit regulations into one permit process. The consolidated process covers requirements for hazardous waste management under the Resource Conservation and Recovery Act, underground injection controls under the Safe Drinking Water Act, National Pollution Discharge Elimination System requirements under the Clean Water Act, Prevention of Significant Deterioration regulations under the Clean Air Act (where EPA is the permitting authority), and state dredge and fill permits under Section 404 (Part A) of the Clean Water Act. Wherever possible, EPA will consolidate its review of all permits required for a single facility under these programs.

Such processes typically provide for the collection of the best technical information on project proposals, and provide a high level mechanism for the resolution of conflicts. By simplifying and centralizing permit procedures and authorities, they should save time and money for both applicants and the government. They should also reduce the chances of abuse of the regulatory processes by reducing the number of veto points in the system, and by requiring a full, balanced review of major coastal decisions. However, few of such state or Federal authorities have advance

planning or policy functions; they are typically reactive processes that can still be highly unpredictable. Also, there is no clear evidence that the procedures resulting from such centralized authorities will necessarily expedite the review of permit applications, or, that when statutory time limits on such authorities decisions are set, good decisions will result.

F. Delegation of Permit Authorities

Delegation of permit authorities from one level of government to another is a typical method for reducing redundancy and inefficiency in the case-by-case permitting process. In most cases, this involves the development of state or local programs, plans or ordinances in response to standards or guidelines of the delegating agency, followed by delegation of regulatory responsibility when such requirements have been met. The role of the delegating agency is then reduced to monitoring performance and occasional intervention into selected decisions of major significance.

Federal examples of this approach include Sections 404 and 402 of the Clean Water Act. The former allows states to apply to EPA to regulate dredge and fill activities in all non-navigable waters within the state and the latter allows states to take over the EPA permitting function for effluent discharges. EPA also allows delegation of permit authority to states, pursuant to approved state programs, for hazardous waste management, underground injection control, and prevention of significant air quality deterioration. At the state level, coastal zone management programs often require the development of local coastal management programs based on state policies, and provide for the retention of some direct state role in local permitting decisions until local programs are approved. Such programs are being administered in California, Oregon, Washington, Maine, North Carolina, and several other states.

This approach reduces the number of agencies directly involved in permit decisionmaking, and reduces the potential for inconsistent agency policies and resulting conflicts. It can significantly reduce the uncertainty of the process, without sacrificing concepts of equity and due process. If the process also assures the use of the best available technical information and includes policies, techniques, and mechanisms for considering cumulative impacts of multiple permit decisions and for resolving conflicts, it can deal satisfactorily with most of the problems of the case-by-case regulatory system. The extent to which this technique can be pursued depends on the extent to which Federal legislative and executive authorities perceive that local and state governments will be willing to make balanced permitting decisions with the same degree of objectivity as Federal authorities. Significant debate on this issue during the last decade has indicated considerable support for maintaining some measure of multi-level checks and balances in the regulatory process.

G. Time-limiting Techniques

Several techniques have been developed to address the timing of final decisions on permit applications. The most prominent are statutory time limits within which specific steps in the decision process must be completed, and which limit legal standing to challenge decisions in the courts to persons directly affected by a proposed action or who have participated in the administrative process leading to the decision being challenged.

The State of Washington's Environmental Coordination Procedures Act establishes voluntary procedures for a master application for state permits, which requires state agencies to indicate within 15 days of an application whether they have an interest in the proposal and allows a panel of agency representatives to determine a common deadline for decisions. Any agency failing to meet the deadline is deemed to have approved the project. At the Federal level, Title V of the Public Utility Regulatory Policies Act of 1968 provides an expedited application procedure for Federal permits, licenses, and approvals required to construct and operate crude oil transportation systems from the west coast. The Act establishes time limits for applications, environmental assessments and reviews by responsible Federal agencies, and Presidential selection of a project alternative, as well as for expedited review of permits and other approvals for project construction and operation. It also includes procedures for the waiver of Federal laws by Congress, as determined to be necessary by the President; and a 60-day time limit on any action seeking judicial review of decisions by the President and the agencies.

These techniques can speed the process of final permit decisions. Because they are based on reducing the costs of delays in the process, they can be efficient in an economic sense. However, they can also limit the quality of information available to decisionmakers, reduce public participation in the regulatory process, and bar from the process advocates of public interests that may not be represented by adjacent property owners, applicants, or local interest groups. The end result may be poorer decisions, greater long-term environmental degradation, subsequent litigation, and substantial citizen backlash. Used in combination with other improvements to the process that will assure the availability of appropriate information, opportunity for full consideration and balancing of competing views, and adequate and consistent standards and policies, time-limiting techniques can make an important contribution to the solution of overall permitting problems. However, strong national or state interests must be at stake over the timing of particular decisions before these techniques are considered acceptable if used alone.

V. COLLABORATIVE INTERGOVERNMENTAL PLANNING FOR SPECIAL AREAS

During the last decade, Federal, state, and local agencies have begun to experiment with another approach to resolve regulatory problems of uncertain, inconsistent, and often conflicting regulatory procedures in limited areas of complex resource and economic issues. This process -- called "special area management planning" -- seeks to improve coordination among regulatory programs by establishing uniform policies and standards to guide development in specific areas in advance of specific applications for projects. It recognizes the shared responsibilities of each level of government, and seeks to bring all relevant agencies to the negotiating table for the purpose of developing a comprehensive land and water use plan for a limited geographic area that provides for natural resource protection and reasonable economic growth. Through a consensus building process among all parties with an effective veto over permits that might be applied for in such an area, this process seeks to anticipate potential intergovernmental conflicts and avoid them, and to provide detailed policies, standards, and criteria for resolving conflicts when they do occur.

This section of the report discusses major features of the special area management process, some areas in which it has been utilized in the past, and the constraints on its further use.

A. Key Features of the Special Area Management Planning Process

The goals of special area management planning include more uniform and consistent government policies among governmental agencies at all levels that control development, increased predictability of government decisions on specific plans and permit applications, balanced and comprehensive consideration of long-term environmental and economic needs, enhanced long-term protection of valuable coastal resources, and expedited review of applications for development permits or conservation proposals. To achieve these goals in an area experiencing regulatory conflicts, the area must be carefully identified, and a process of intergovernmental cooperation must be carefully constructed. The following paragraphs describes the key features of these requirements.

1. Identification of a "Special Area"

An area is "special" when complex resource and economic development issues must be balanced within a limited geographical zone. Normally such areas have a long history of regulatory conflicts due to overlapping responsibilities of a variety of Federal, state and local agencies that affect the outcome of development proposals, so that traditional planning processes have proved to be unsatisfactory. Typically, diverse and competing interest groups exist in such areas, which historically have been

unsuccessful in reaching compromises over development or conservation goals for the area. An area may also be "special" because of outstanding resource values which warrant collaborative interagency preservation efforts in advance of specific resource use conflicts.

Estuaries, bays, river headlands and the shoreline and coastal fringe of similar water bodies, in which unique and valuable natural functions that serve fish and wildlife resources compete with economic functions such as port and urban development, often have these complex characteristics. Examples include Grays Harbor, Willapa Bay, the lower Columbia River, Yaquina Bay, Coos Bay, San Francisco Bay, Elkhorn Slough, and San Diego Bay on the Pacific Coast; Galveston Bay, Lake Charles, Lake Ponchartrain, Mobile Bay, Apalachicola River and Bay, and Tampa Bay on the Gulf coast; and Winya Bay, parts of Chesapeake Bay, upper Delaware Bay, Long Island Sound, Narragansett Bay, Buzzards Bay, Boston Harbor, and Casco Bay on the Atlantic Coast.

More limited areas of shoreline may also be suitable for special area management planning. In some cases a major economic use such as a port or an energy facility must compete with numerous water-related urban uses and natural features, and the use may have a zone of impact that regulatory agencies will have to consider. Examples include the Port Angeles, Washington, area proposed as a terminal for a west-to-east crude oil pipeline, port expansion areas in San Francisco Bay (e.g., Benecia, Oakland, and Richmond), and the Ports of Houston, Galveston, Mobile, and New Orleans. In areas where natural hazards, such as hurricanes or floods, have damaged property and the natural environment, collaborative replanning to alleviate human suffering and avoid future losses may benefit from the special area management approach. Examples of such areas include Mobile, Alabama, the lower Columbia River area near Mount St. Helens, and several barrier islands subject to development pressures along the Gulf and Atlantic coasts. Finally, areas where obsolete port facilities are being converted to water related recreational and commercial uses in an urban setting, involving many city, state and Federal public works and permitting agencies, can be planned using the special area management approach. Examples include San Francisco's northeast waterfront, Baltimore's metropolitan coastal area and inner harbor, and the Detroit waterfront.

The geographic area must be determined by the nature of the interagency conflicts that need to be resolved. It must be small enough to permit analysis sufficiently detailed to allow the participants to understand and resolve the major problems and to develop policies in the plan that are specific in their application to individual land areas, uses and potential projects. The area should also be large enough to allow problems to be addressed on an ecosystem basis when possible (recognizing the difficulties of determining where one ecosystem begins and another ends), or to represent a geographic or physiographic unit that is recognized and accepted by the constituencies of the participating agencies.

Finally, the special area management process may be appropriate or desirable only in selected areas where conditions are ripe for its use. According to one reviewer of this report involved in such a process, these conditions usually occur where some external stimulus exists to local government (such as state planning requirements or Federal conditions blocking permits until plans are completed), a broad policy framework (such as state coastal zone management policies) has been imposed to guide plan development, a high level of fatigue or frustration exists with the existing regulatory process by local governments and private development interests, and the affected parties recognize that bargaining and compromise with other opposing interests is necessary to achieve individual goals. Where these or similar conditions are not present, other planning models may be more appropriate and useful in resolving regulatory conflicts.

In some cases, the basic premise for developing a special area management plan may be the special ecological characteristics of an area, such as a biological preserve, estuarine sanctuary, or wilderness area on the coast, rather than conflict resolution. In such areas of special natural value, this type of collaborative forethought to long-term protection may be called for, with no immediate conflict on the horizon. In such cases, collaborative planning processes might be used in combination with the sanctuaries programs administered by the Office of Coastal Zone Management. In general, this report emphasizes the use of collaborative planning processes in conflict situations because most of the early examples of such planning evolved from such experience. In the absence of conflicts, local and state governments may be less likely to invite Federal representatives into direct collaboration for planning long-term protection for pristine natural areas, unless they are seeking additional financial resources or Federal legal controls over development, or unless Federal property is a part of the planning area.

Potential special areas where processes might be initiated can be identified in a number of ways. They may be areas already designated as "geographic areas of particular concern" or "areas for preservation and restoration" in state coastal zone management programs pursuant to the Coastal Zone Management Act. They may be areas suggested for collaborative planning by Federal, state, or local agencies in order to anticipate or resolve major permit disputes, or to address cumulative impacts. They may be areas suggested by environmental groups, where major natural resources are threatened. Or, they may be areas identified by port authorities or other economic interests in response to permitting problems, or to obtain a unified agency and public response to development proposals before major investments are made.

In general, the process works best when such areas are identified and designated from the "ground up" or at the "grass roots" level, where the existing regulatory system creates problems on a routine basis. This concept was widely supported by reviewers of this report, and has been cited in at least one study leading to a locally initiated special area management planning process in Florida:

> "Although resource protection is a function carried out by state and Federal governments, Federal and state management alone will not solve the resource problems of the Apalachicola Basin. 'Grass roots,' local, county problem solving is a thrust of Florida's Local Government Comprehensive Planning Act...."

Such a planning process is likely to be initiated most quickly and result in the most successful outcome where broad multi-level support exists for recognition of a specific area and initiation of the planning process, because of the heavy demands upon agencies and interest groups for participation once the process begins. State or Federal agency efforts to conduct coastwide or regional inventories of potential special areas, or to designate such areas through some systematic planning effort, are not likely to be useful or appropriate in advance of situations that are widely perceived to be problems at the local level.

2. Key Features of the Process

The special area management planning process results in a geographically specific plan with designated uses, policies, standards and conditions for development, and conservation activities in the planning area. In some respects such a plan is similar to familiar master plans, local land use plans, or regional coastal management plans. However, several features of special area management planning, in combination, distinguish it from other planning models, and are keys to its use in achieving improvements in the regulatory system.

a. A Collaborative Intergovernmental Process

Special area management planning is a collaborative process involving voluntary participation by representatives of all key Federal, state, and local agencies that have legal authority (and an effective veto) over development projects in an area, or otherwise have an important role to play with respect to those projects. For example, if the special area includes "navigable waters of the United States," any planning to guide development proposals which might involve dredging, filling, or other works in those waters should involve the Army Corps of Engineers, the Fish and Wildlife Service, EPA, and the National Marine Fisheries Service, as well as state and local agencies which must respond to such proposals. Similarly, if a port authority or urban redevelopment agency has proprietary control over large land and water segments of the special area, or an energy siting agency has authority over the siting of proposed facilities in the area, these agencies must be represented in order for the resulting plan to be implemented effectively. Although some reviewers of this report have suggested that participation by Federal and other key agencies be made mandatory, experience to date indicates that forced participation is not as likely to lead to constructive cooperation and full commitment to implementation as is voluntary participation where the benefits of collaborative planning are perceived by all participants. With demonstrated effectiveness of early prototypes in achieving the goals of this type of planning, voluntary participation is expected to be high.

In some cases, the process may include participation by agencies with no direct land or water management responsibilities; i.e, those that have technical information and expertise that is useful to management agencies. Such participation could be through a technical advisory committee or as an integral part of the planning body.

Care should be taken in the formation of collaborative planning groups to assure that a proper balance of interests is maintained and to prevent some groups from dominating or threatening the interests of others whose support is necessary to implement the plan. In such a process, it should be recognized that coalitions of interests may form before and during the planning process which could encourage the type of political armtwisting and delays that the planning process is designed to prevent.

b. Agreement by Consensus

Special area management plans are arrived at by consensus among the participating governmental agencies. Consensus approval means that no participating agency objects to the provisions of the final plan and that each participating agency is committed to adhere to the plan so long as the conditions under which the plan was developed have not substantially changed. Such consensus assures, for example, that if all agencies agree (after appropriate citizen participation and administrative and environmental procedures) that certain portions of a harbor are suitable for a particular use in light of mitigation or other trade-offs and other alternative uses, those agencies will abide by the consensus on this matter in approving, denying, or conditioning subsequent permits for specific projects in the area. This consensus is articulated in a written form, such as agency memoranda of agreement, that can serve as a comprehensive, concise record of the information on which it was based, planning alternatives considered, means to avoid or minimize environmental harm, programs adopted for mitigation, and decisions of the participating regulatory agencies.

c. Integration of Federal, State, and Local Legal Requirements

To help alleviate the problem of conflicting government policies with respect to development and environmental protection, special area management plans are developed to conform with the variety of local, state, and Federal laws applicable to the area, except where the plan itself is designed to result in changes to those laws (such as existing local plans and zoning ordinances). The plan explicitly describes the laws applicable to development in the area, and the extent to which the plan itself meets the criteria and required findings embodied in those laws.

For example, if a special area includes wetlands classified as "navigable waters of the United States," the plan would explicitly describe how Section 404 of the Clean Water Act will apply to any proposed development or activity in those wetlands. If the parties developing the plan have agreed to allow certain uses in the wetlands, the plan would describe the conditions under which they will be allowed, and those conditions will have been negotiated to be consistent with not only

Section 404 but also applicable state and local laws. The plan would also include a number of findings that could form the basis of findings required in subsequent applications for permits in the area -- on issues such as the extent to which the need for such allowed uses had been established, water-dependency, whether the location of the allowed uses represents the only feasible alternate, and the extent to which the adverse impacts of such uses are acceptable in balance with other provisions of the plan such as mitigation or long-term preservation of other wetland areas.

Not all of the criteria and findings to be made in future permitting proceedings can be met by the plan in advance of specific project applications (such as the permissible toxicity of the dredge spoil to be disposed of); in such cases, the plan provides a reference to the legal requirements that must be satisfied at the permit application stage.

d. Use of a Neutral and Independent Mediator.

In most cases, a neutral and independent mediator is used to help the parties achieve a consensus on a special area management plan. The mediator has no authority to impose a settlement. Rather, his or her role is to help the parties define the framework within which they will negotiate, to facilitate the substantive negotiations, and to assist the parties' creation of the means to implement the agreements they reach. In some cases, the mediator is called in only to help the parties resolve a particular dispute after an impasse has been reached. In others, the mediator may not only help the parties achieve broader consensus, but may also serve as a technical planning consultant for designing the planning process, preparing analyses of specific issues and areas, and recommending alternative plans.

e. Meaningful Public Involvement.

Special area management plans are adopted with full involvement, not only of the parties directly affected by the plan, such as property owners in the area, but also those members of the general public with a substantial interest in the resources and economic uses in the area the plan proposes to govern, such as environmental and economic interest groups. Participation of these public interests is necessary if the plan is to be fully implemented, as they have a variety of legal and political means to affect the adoption and implementation of the plan, whether or not they are directly involved in its development. For example, most Federal, state, and local environmental and planning laws will require the involvement of the public in the subsequent regulatory process. If citizens and interest groups are not satisfied with the outcome of a collaborative planning process, opposition to each permit application or proposed project in the planning area is likely to impair the usefulness of the plan. On the other hand, widespread public support for the plan will be likely to discourage development proposals inconsistent with its terms.

f. Specified Mechanisms for Implementation.

Regulatory, nonregulatory and other institutional measures are specified as part of the special area management plan to ensure that it is enforceable, predictable, and consistent with other legal mechanisms for controlling development in the area. Regulatory measures can take such forms as memoranda of agreement by state and Federal agencies, changes to comprehensive plans and zoning ordinances by local governments, adoption as part of state coastal management or land use programs, and one or a combination of the regulatory mechanisms discussed in Section III above. Nonregulatory mechanisms can include land acquisition for public purposes as part of the plan, imposition of restricted use easements, transfers of development rights, land banking or exchanges for mitigation purposes, and land trusts.

The range of other possible institutional mechanisms is broad. In some cases, new intergovernmental organizations or agencies can be established to implement a special area management plan, such as the San Francisco Bay Conservation and Development Commission (discussed as one of the following case examples). In states such as Florida and Minnesota that have laws for the designation and management of "critical environmental areas," patterned after the American Law Institute's Model Land Development Code, special area management plans might be institutionalized through such processes. National status or special designations may be conferred on all or parts of the area to assist plan implementation, such as designation as a National Estuarine Sanctuary under Section 315 of the Coastal Zone Management Act, designation by the Army Corps of Engineers under Section 404(b) of the Clean Water Act as a possible future dredge spoil disposal site, or designation by EPA under Section 404(c) of the Clean Water Act as an area that cannot be specified as a disposal site or in which such disposal will not be permitted.

g. Stratified Regulatory Decisionmaking.

The special area management process encourages agencies to eliminate repetitive consideration of regulatory decisions on broad planning issues that have been resolved by the plan when permit applications for specific projects are reviewed. If, for example, the plan can be used as a basis or partial basis of findings on issues such as acceptable adverse impact, project need, water dependency, suitability of alternatives, allowable uses, and mitigation requirements, the agencies involved can focus attention on the detailed issues specific to the permit action. The concept fits well with the "tiering" provision of the regulations of the President's Council on Environmental Quality with respect to preparation of environmental impact statements, encouraging federal agencies to eliminate repetitive discussions of the same issues and to focus on the issues ripe for decision at each level of environmental review.

Variations of one or more of these general features may be possible and appropriate to achieve the desired results in specific areas. For example, if certain Federal agencies that review development permits rely primarily on counterpart state agencies for implementation of their program objectives, direct participation in the planning process by these

Federal agencies may not be necessary. In some situations, agreement by consensus may not be required, such as where a strong lead agency or administrator (e.g., a coastal commission, an energy siting council or a Chief Forester) has sufficient authority to implement a plan, or where small segments of a plan for which consensus cannot be reached can be deferred for resolution during the permit application process. An independent mediator may not be required if a lead agency representative is accepted by participating parties as an objective facilitator of multi-agency agreement on a plan. In some special areas, even the concept of tiered or stratified regulatory decisionmaking may not be essential when acquisition and other nonregulatory forms of management are the primary means for plan implementation.

B. Case Studies

The following cases illustrate conflicts created by the case-by-case regulatory review procedure in areas with complex resource and economic development issues, and attempts to resolve those conflicts through special area management planning, incorporating several of the features described above.

Even though the conceptual basis for special area management planning has only recently emerged from these cases, and experience in multi-agency implementation of such plans is limited, these examples demonstrate that a process embodying the features referred to above can work. They show that all levels of government can work together to resolve problems in governing coastal resources that the case-by-case permitting system is poorly equipped to handle; that direct collaboration among diverse interest groups can result in a proper balance between conservation and development in a given area; that permit decisions can be expedited in a more predictable manner if a plan resolves some of the more general questions raised by ambiguous or conflicting government policy; and that plans resulting from such processes can maintain the natural functions of ecosystem areas, while allowing for needed development.

In the process of striving toward meeting special area management goals, most of those participating in such planning efforts have also found that the high level of interagency communication has improved the long-term working relationships among levels of government and participating interest groups. One Port official described this benefit as follows:

"A long-term benefit which goes beyond the plan itself is improved communication between the Port and the regulatory agencies. Through the process of debating policies and programs regulatory agencies, state and Federal, developed a better awareness of the problems facing a viable Port. The Port, in turn, has become more keenly aware of the factors limiting the agencies. The end result has been a

markedly improved credibility between the various parties and an establishment of clear lines of communication that will continue well beyond the planning process. This develops a more effective Port program, and provides an early measure of feasibility on projects placing the Port in an adversary role. This is a major departure from the classic regulated and regulator roles and puts the Port and the resource agencies into a more cooperative frame to solve a mutual problem with appreciation for the other's constraints."

1. Grays Harbor, Washington

The Grays Harbor estuary, on the central coast of Washington State, includes 62,000 acres of water, tidal marsh and partially developed shoreline, and the State's largest port outside of Puget Sound. It is one of the few large coastal bays and estuaries remaining on the west coast. The estuary supports more than 50 species of fish, large populations of clams, oysters and crabs, and 325 species of birds (one-third of all bird species found in Washington State). The economies of six towns depend upon shorefront industries such as ports, timber processing, fishing, and recreational boating. A 23-mile navigation channel has required periodic maintenance dredging by the Army Corps of Engineers, which historically has supplied much of the shoreline fill upon which large parts of the communities and these industries have been built.

Since the beginning of the century, the towns of Aberdeen, Houquiam, Cosmopolis, and Montesano have been exporting wood products from facilities located on land created by dredged spoils deposited in marshes. Between 1940 and 1975, maintenance dredging for industrial sites involved alteration of about 3,850 acres of intertidal habitat. After Federal laws were passed giving more direct authority over these actions to Federal agencies and requiring full consideration of fish and wildlife values in their exercise of this authority, conflicts among many agencies arose and gained national attention.

In 1974, the Grays Harbor Regional Planning Commission, together with the local communities around the estuary, prepared a local Shoreline Master Program that was adopted by the State Department of Ecology in 1975 under the State Shoreline Management Act, the heart of its Coastal Zone Management Program. However, even though the local Program involved broad citizen and agency participation, it was unable to resolve major interagency conflicts. Federal resource agencies claimed that the plan was prepared without adequate resource information, provided inadequate guidance for aquatic activities, and was too general. The Port and some local units of government felt that the plan unduly restricted development because, among other things, it designated 2,100 acres of Port-owned tidelands and wetlands as conservancy areas.

Conflicts over development proposals by the Port to fill 39 acres of wetlands for the Kaiser Steel Company to assemble offshore drilling platforms, a proposed waterfront motel and restaurant in the City of Aberdeen, and a proposed Boise-Cascade Corporation sawmill requiring bulkheading,

involved local, state and Federal agencies in controversies and permit delays lasting up to 2 years.

Political intercession on behalf of the Port on the Kaiser proposal, and lengthy delays or rejection of other projects, frustrated all parties in the decision process. With the encouragement of Senator Henry Jackson, the Fish and Wildlife Service and National Marine Fisheries Service urged that a more specific plan be prepared that could address the cumulative effects of future development proposals. They indicated that they would recommend rejection of all subsequent development proposals in the estuary until all parties had developed an overall plan for the estuary. The Port of Grays Harbor also urged the development of such a plan, because 2,200 acres of port-owned riparian tidal lands were directly affected. The situation was ripe for more effective collaborative planning involving all parties to these disputes.

As a part of its Coastal Zone Management Program approved in 1976, the State designated the estuary as an area of special concern and funded the Grays Harbor Regional Planning Commission to establish a collaborative intergovernmental planning process. Each unit of local government, state agency and Federal agency with legal jurisdiction over the use of the estuary was brought together with the Port and the Regional Planning Commission to form an Estuary Planning Task Force. This group and its consultants have worked for more than 4 years to develop a long-range management plan for the estuary.

Two key features of the Grays Harbor planning process were establishment of the need for consensus on the plan among all participants, and use of consultants who served as technical resource and planning experts as well as environmental mediators. Consensus was required because each of the participating agencies had some legal authority over development proposals in the planning area, and thus the capacity to impede or expedite implementation of the plan through its actions on permit applications. All disagreements over the detailed provisions of the plan were therefore to be resolved during the planning process. The consultants were selected on the basis of their abilities to carry out both technical and mediation roles. They were not identified with any of the positions held by Task Force participants, and were hired and paid by the Regional Planning Commission.

The first detailed draft plan prepared by the Task Force proposed to allow limited expansion of the Port and the communities around the estuary, while preserving the remaining tidal wetlands. It established eight management categories by which the various portions of the entire 55,000 acres of the estuary are classified -- natural, conservancy natural, conservancy managed, rural agriculture, rural low intensity, urban residential, urban mixed, and urban development -- with intensity of allowed use increasing from natural to urban development. General guidelines were established for each management category, as well as a set of standard uses which are either permitted or potentially permitted based on subsequent conditional use review. In addition, 44 smaller sub-management units were established, for which the plan describes management

objectives, permitted activities, and special conditions in terms which can also form the basis for later necessary regulatory findings. As a result of the successively greater detail in the plan, the plan's policies became quite specific, leaving little doubt as to what uses and activities will be permitted in an area or will be subject to conditional review.

Proposed changes in the draft plan in October 1980 suggest alternative means to mitigate long-term impacts of expansion of Port and local government lands in areas requiring tideland filling. Protective easements on remaining Port-owned tidelands and other protection measures are proposed, including incorporation of requirements of Section 404(b)(1) of the Clean Water Act.

Although the process is not complete and has been a difficult and time consuming experience for most of those involved, each of the major parties in the bargaining process gained a strong awareness of the interests and concerns of the others, and each expects to achieve a compromise solution to its own problems of coastal management in the estuary. For example, the officials of the Port of Grays Harbor have been promoting the planning process as a model for resolving the conflicts among ports, environmental agencies, and citizens at several national and international conferences of port authorities.

Successful implementation of the plan will depend upon the extent to which local, state, and Federal agencies will be committed to it as a guide for permit and project review decisions, and the extent to which the general public accepts the results of the planning process. At this time, most of the local governments appear to be committed to revising their Shoreline Master Programs and planning and zoning ordinances to conform to a final plan. The state will amend its coastal zone management program accordingly. Although state and Federal agencies may agree to the plan in principle, no legal mechanism has yet been identified to require future agency administrators to abide by the planning commitments made by their agencies in formulating the plan. The state could prevent Federal agency activities, permits, financial assistance, or direct development projects that are inconsistent with its amended coastal zone management program, through the Federal consistency provision of Section 307 of the Coastal Zone Management Act, but this would not provide the same kind of legal commitment that local and state agencies are expected to provide. Similar planning efforts in Yaquina Bay and the Lower Willamette Valley in Oregon, demonstrate to those involved in the Grays Harbor process that the Federal resource agencies will abide by their commitments to a consensus plan, but the lack of a binding legal commitment leaves a gap in the predictability sought by most of those involved.

The concepts of tiering regulatory decisions on permits using the findings and conclusions set forth in the final management plan document, and tiering environmental impact statements related to the plan by using a programmatic environmental impact statement (PEIS) to accompany the plan, have been accepted in principle by the Federal agency representatives in the process. However, some of the parties are not yet entirely sure how the tiering concept will work without more explicit legal authority in some agency regulations. For example, when the agencies

determined that a PEIS would be needed before the agencies could make commitments to the plan, none of the agencies was sure it could initiate or assume lead responsibility for the statement in the absence of a specific project application. The Office of Coastal Zone Management ultimately accepted the lead agency role, and is now preparing a joint PEIS with the cooperation of the Army Corps of Engineers, EPA, the Fish and Wildlife Service, and the National Marine Fisheries Service. The PEIS will address the proposed action to amend the Washington Coastal Zone Management Program to include a final plan, and the proposed actions of the other participating agencies to adopt the plan through memoranda of agreement for use in the review of subsequent permit applications.

Although organized citizen participation has been part of the development of the plan from the beginning, some interest groups have faulted the extent and nature of this participation. For example, environmental groups were not allowed voting representation on the Task Force. Some groups have opposed early drafts of the plan that were distributed for public review, claiming that the boundary was inadequate, that resource information was faulty, and that the proposed drafts were inconsistent with Federal laws.

In response to these criticisms, the Task Force invited local and national representatives of environmental and citizen's organizations to present their concerns about the plan at its December 1980 meeting. As a result, a new subcommittee was established to study alternatives and mitigation proposals presented by these groups, which will be considered by The Task Force at its March 1981 meeting.

2. San Francisco Bay California

The saving of San Francisco Bay through a collaborative process involving dedicated citizen groups, an Army Corps of Engineers study describing the rate and trends of filling in the Bay, and an interagency commission formed for the long-term protection of the Bay, has been well documented. The success of this earliest coastal management program served as important evidence of the need for the Coastal Zone Management Act in 1972, and now serves as a prototype for special area management planning.

The unique natural features of San Francisco Bay provide a resource of major value to the State of California and the Nation. For example, the San Pablo Bay National Wildlife Refuge, between the Petaluma River outlet to the Bay and the City of Vallejo, is the winter home of approximately 40,000 canvasback ducks -- more than half the population of the Pacific Flyway -- as well as great numbers of loons, grebes, cormorants and terns. Seventy percent of all shore birds using the Pacific Flyway at some time during the year are dependent upon the South Bay. The Bay also has significant value for international commerce and industrial development in the west. In 1978, bay ports handled 52 million tons of cargo, and the Port of Oakland is the second largest container handling port in the country. The Ports of San Francisco and Oakland alone provide more than 20,000 jobs to Californians.

These values are obviously interdependent and often in conflict. In 1850, San Francisco Bay's surface at mean high tide included approximately 680 square miles. About a century later, this surface had been reduced to approximately 430 square miles. Between 1940 and 1965, the Bay was being filled at an average rate of 2,400 acres per year, and its marine productivity was steadily declining.

Documentation of these trends in 1959 by the Department of Commerce for the Army Corps of Engineers, and specific project proposals to fill massive additional amounts of wetlands in the Bay, triggered citizens' actions to halt the filling under the leadership of a group called Save the Bay. The citizens' campaign led to passage of state legislation in 1965 establishing the San Francisco Bay Conservation and Development Commission, which was charged with preparing the San Francisco Bay Plan (the first special area management plan in the United States) and controlling further piecemeal filling of the Bay while the plan was being completed.

After the temporary Commission had prepared a San Francisco Bay Plan, a permanent Bay Conservation Development Commission (BCDC) was established in 1969 by legislation which also adopted the plan. The 27-member Commission of citizens and state, local, and Federal officials administers the Bay Plan through permits controlling all development within 100 feet of a line 5 feet above mean high tide. The Plan consists of a series of findings with respect to the resources, problems, and needs of the Bay, detailed policies to address these findings, and a series of maps for segments of the Bay containing detailed land-use designations, policies, and standards for use of the shoreline and water area within each segment. The Bay Plan policies cover virtually all aspects of development within the BCDC jurisdiction and adjacent areas, and serve as the basis for all permits within BCDC's jurisdiction.

One of the main objectives of the Commission is to control development in the Bay area for water-related purposes. Since 1965, the total amount of fill allowed in the Bay has been 350 acres, for which BCDC has obtained, in mitigation the opening of about 350 acres of diked wetlands. At the same time, BCDC has allowed development to proceed around the Bay. For example, in 1976, BCDC allowed $42 million in development, while creating 2 miles of new public access areas on the Bay. The Port of Oakland has grown to become the second largest container port in the Nation since BCDC was established.

More detailed special area plans for segments of the San Francisco Bay Shoreline have been completed through collaborative planning processes involving all levels of government, citizen groups, and industry, which have resolved many other conflicts between private and public objectives for the Bay. Detailed plans for the northeast waterfront of San Francisco, the Port of Benicia, Suisun Marsh, and the South Richmond Shoreline have been completed, and will become a more detailed part of the Bay Plan and local government plans when fully adopted by each local government. These Bay Plan refinements guide permits issued by BCDC and by the Federal agencies represented on BCDC (EPA and the Army Corps of Engineers).

3. The Lower Willamette River, Oregon

The Willamette is one of Oregon's major rivers. Most of the state's population centers and much of its prime agricultural lands are located in the Willamette Valley. The Lower Willamette River represents a particularly valuable resource, because it contains an area of semi-delta freshwater marshlands, interspersed with uplands, sloughs, and small cliffs, while flowing through Portland, the major metropolitan area in Oregon. The lower Willamette has historically served maritime shipping with a deepdraft navigation channel to the Pacific, with gravel mining and other industrial activities, while providing a quality freshwater environment to support a major salmon run, sport fishing, and other water-related recreational activities.

Over the years, river land filling and expansion began to create development that was well intended but unplanned from a total water use aspect. In December of 1972, the Port of Portland approached state permitting agencies with preliminary plans for riverfront development involving a fill of approximately eight acres located in an existing marine cargo terminal complex. The Port encountered resistance because of the lack of an overall water use or harbor management plan that considered the cumulative impact of this and other previously approved fills which had the potential for major impact on waterway resources. The proposed 8-acre fill permit application, though for a needed port steel off-loading dock, did not consider the effects upon the river, upstream or downstream from the proposed site. Due to growing government agency resistance to projects along the lower Willamette River, Oregon's Division of State Lands permits and Federal U.S. Army Corps of Engineers' permits for waterway construction were taking 90 to 120 days to process. Because of a lack of overall agency coordination and local planning, the permit process included little, if any, consideration for the cumulative impacts of waterway projects.

The Port's formal application for necessary state and Federal permits for the project was made in the fall of 1972. Even though some resource agencies were dissatisfied with the impact of the proposal, few policies or standards had been promulgated on which to base a denial. However, the agencies were able to convince the State Lands Board to restrict further development in the area involving state owned submerged lands until a specific management plan could be completed for the lower parts of the River and its shorelines. In March 1973, the State Land Board directed the Division of State Lands, the Port of Portland, and various state and local resource agencies that had legal jurisdiction over development to serve as an interdisciplinary technical team of consultants for the formulation of the plan.

The Oregon Division of State Lands served as lead agency to facilitate the development of the plan by the committee. The Port of Portland agreed to play a major role in developing the plan by providing technical staff support and funding. The committee involved staff from the Port of Portland, the City of Portland, four state resource agencies, the Oregon Department of Transportation, the Division of State Lands, the Oregon "Greenway" Project, and the Army Corps of Engineers. In addition,

periodic public meetings were held, as well as reviews with other government agencies, property owners, and special interest and user groups. A special committee representing major interest groups was formed to review and monitor the progress and content of plan drafts.

A draft plan was completed in January 1974, and was then subjected to an extensive one-year review process. The Lower Willamette River Management Plan was a limited prototype for the Grays Harbor Plan. It established a series of guidelines for use of all waterfront property. It divided the shoreline into segments and established general use categories, guidelines for development, and activity standards for each segment. It attempted to create a balance between Port-related industrial development and other uses and long term conservation of valuable natural areas. The draft plan was adopted immediately by the State Lands Board, thus controlling development in the area until the final plan was completed.

As soon as the plan was placed in operation, the permitting process was improved. By July 1974, permit applications that had been taking 90 to 120 days to process prior to adoption of the plan were being processed in 15 days. In 1975, the State Lands Board's review committee reported in its monthly review of the Plan that:

> "We found the Plan to be a workable and effective tool for use in managing the submerged and submersible lands of the Lower Willamette River. It provides an excellent, systematic means for making policies and guidelines available to landowners, developers, and the agencies which manage the use of the Willamette River. We perceive that management decisions for this waterway area are now much more consistent than before the Plan was developed. Further, processing of applications which are in conformance with the Plan has been expedited to the advantage of both applicant and agency."

In April 1978, the Port of Portland reported to the Oregon Public Ports Association that Portland was able to obtain all permits for a major shipyard expansion project in 5 months, a process that would have normally taken several times this period under the previous system. Reporting on the Plan, one Port Officer indicated that:

> "The key to the successful permit acquisition process was the early involvement of the resource agencies in the project planning. Preliminary design coordination with representatives of the permit agencies was begun by Port staff far in advance of actual permit application dates. The guidelines set out in the plan are used by the agencies, by industry and the Port in planning and designing projects, preparing permit applications and processing of permits. In other words, an industry or Port planning a waterfront project, by referring to the plan, knows what type of construction is acceptable to the permit and resource management agencies, in which sections of the river it is acceptable in and at what time of the year. The agencies when evaluating a permit application for a project on the Lower Willamette, refer to the Plan, and if the plan guidelines are followed, they have a basis for rapid approval."

4. Other Areas

Based on the apparently successful use of special area management planning techniques discussed above, several other areas have initiated similar processes and are actively exploring these techniques.

In response to Oregon's statewide goals and guidelines for land use and coastal planning, which each county and municipality must use in mandatory revisions of its local comprehensive plans, the Coos-Curry Council of Governments has formed an interagency task force and several functional and citizens advisory groups for the preparation of an Estuary Management Plan for the Coos Bay Estuary. Numerous interagency permit problems preceded the formation of this task force, including a major controversy over a proposal to expand the North Bend Airport in an area that would require filling of wetlands. The planning process is patterned after the Grays Harbor process, with expanded and more direct involvement of citizens and interest groups and a more deliberate process of incorporating state and Federal legal requirements. Planning for the Estuary has been underway since November 1979, and an initial discussion draft is scheduled to be completed by March 1981.

Kawainui Marsh, the largest freshwater marsh in the State of Hawaii, provides an important habitat for four endangered waterbird species and a variety of migratory waterfowl, and serves as a flood control basin and sediment trap protecting Kailau Bay's inshore waters, beaches, and reefs. Conflicts among various resource objectives have often existed as a result of its proximity to densely urbanized communities and present urban district zoning for portions of the marsh. Several state, local, and Federal agencies have legal jurisdiction and functional responsibilities related to the marsh area. The Hawaii Coastal Zone Management Program has formed a Technical and Policy Advisory Committee to bring together state, local, and Federal agencies as well as affected landowners and public interest groups. This Committee will study the resources of the marsh and formulate a management plan, guided by the state's coastal zone management objectives and policies. The scope of work for a scientific baseline study has been formulated, and the state is seeking guidance and financial support for continued special area management planning.

Over the last several years, the Apalachicola River and Bay system has been the subject of several interrelated planning efforts involving the Federal government, numerous agencies in three states, local governments, and citizens. The Apalachicola River and its tributaries drain 19,600 square miles in Alabama, Florida, and Georgia; the large volume of water carried by the River (averaging 14 billion gallons a day) maintains a delicate balance of nutrient-rich brackish waters in Apalachicola Bay, Florida, one of the most productive bays in the gulf region. The basin has been subject to controversial, large-scale development proposals that would substantially alter its predominately rural characteristics and significantly affect its natural resource values. Few of the local governments in the Florida portion of the basin have the resources or capabilities to deal with the forces for change on their own. The state has formed a committee that includes an elected official and representatives of economic and conservation interests from each of the area's 6

counties, as well as 12 state agency representatives and others, which is working closely with Federal agencies to perform specific coordination and planning functions. It has developed state objectives for the basin, begun an overall management plan for the bay and river aided by state planners, and facilitated the designation of an Apalachicola River and Bay National Estuarine Sanctuary covering a 193,000-acre area to be administered by the State with the advice of a broad-based management committee.

Similar planning processes are also being considered or conducted in a number of other areas, including: Cleveland-Cuyahoga County, Ohio; Sitka, Kenai, and other communities in Alaska; Lake Pontchartrain, Louisiana; Winya Bay, South Carolina; Yaquina Bay, Oregon; the Lower Columbia River between Washington and Oregon; Gulfport, Mississippi; and the port master planning process in San Diego.

C. Major Constraints to Improved Coordination

The special area planning experiences discussed above have also focused attention on a number of problems agencies are encountering in using a joint planning approach to improving coordination of regulatory decisions. The major problems are summarized below:

1. Agencies May Lack Resources to Participate Fully

Permit coordination and joint planning requires funds for data collection, research, planning and participation. Joint planning with other Federal, state, and local agencies and interest groups also requires extensive amounts of time by agency representatives. Adequate representation of agency interests in such processes often requires an extensive understanding of the planning issues, and technical skills in planning, negotiation and conflict resolution. Most regional offices of Federal permitting or environmental review agencies have limited budgets and staff assigned to planning issues or to review project applications, and may lack staff with all the necessary qualifications to participate effectively.

For example, during the period in which regional Federal officials are being asked to review revisions to County Comprehensive Plans in all coastal counties in Oregon, they are also expected to spend at least 3 days per month in meetings and many more hours reviewing technical and planning documents for preparation of the Coos Bay Estuary Management Plan. Most of these agencies have only one technical staff person assigned to coastal planning activities in several states and usually these persons have many other duties, such as reviewing permit applications for coastal development. The Environmental Protection Agency representative has had to inform the Coos Bay Task Force on several occasions that budget limits for travel between Seattle and Coos Bay would prevent his participation in important Task Force planning meetings.

Lack of resources for such planning has been especially critical in California, where more than 60 local coastal programs are being developed concurrently, under state guidelines requiring consultation with Federal agencies.

2. Insufficient Resource Information May Be Available

Lack of sufficient resource information to formulate specific plans to guide development is a problem that is linked directly with the problem of inadequate resources. Agencies may not have adequate resources to acquire data that will be sufficiently detailed to document anticipated impacts, expedite the permit process or make long term conservation and development trade-offs. If jointly prepared, plans are to be used as a basis for meeting documentation requirements and for resolving conflicts in advance of permit applications. This information must be sufficiently detailed to meet these needs. For example, the Columbia River Estuary Task Force (CREST) has been preparing a general plan for the Lower Columbia River between Oregon and Washington for the past several years. However, the lack of data on critical feeding areas for benthic invertebrates and migrant anadromous fish species in the Lower Columbia prevents the plan from being useful for assessing impacts of major permits in this area of concern. This problem became apparent when agencies attempted to use all available data, including the CREST planning and environmental work, for comments on a proposed Brown and Root facility for oil platform construction near Astoria. Because of this general paucity of data, the Columbia River Estuary Data Development Program (CREDDP) has received a research grant of $6.6 million through the U.S. Water Resources Council to obtain additional information.

Applicants for permits typically provide much of the environmental resource data used to evaluate their projects, either in the form of permit application fees which are used for data collection, or by supplying data requested by the agency. In areas that have been studied intensively in anticipation of large development proposals (or because of other research activity), sufficient information may be available for planning in advance of project applications. In areas where prospective applicants for large development proposals are dependent upon resolution of regulatory conflicts, such as port expansion areas, they may be willing to supply or pay for the required information. In other cases, agencies participating in such planning will have to collect the required data, or acquire it through planning and research funds made available for these efforts. For example, prior to 1976, the Army Corps of Engineers had conducted extensive analyses in Grays Harbor on dredge materials and alternative disposal sites in support of their operation and maintenance program for the Harbor. However, the Office of Coastal Zone Management supplied more than $60,000 in FY 1976 to support the first year of planning for the Grays Harbor Estuary, much of which was needed to fill gaps in, or interpret available resource information.

Some parties to a joint planning process may insist that agreement be reached on the adequacy of resource data before they are willing to reach agreement on specific issues, particularly if the plans are expected to

satisfy regulatory requirements. One reviewer of this report, a consultant who has had great influence over the development of the special area management concept, cautioned that "Getting agreement on the adequacy and significance of data may be as difficult as reaching agreement on the issues themselves." He also indicated that agreement on data is not always a prerequisite to compromise on the contents of the plan:

> "We must realize that in special area management planning, decisions will often be a form of compromise. Accepting a resource loss ... may be acceptable within a special area management process simply because of the guarantees for resource protection gained elsewhere. Data will shape decisions differently for each participant in this type of planning process. Accepting that data is nonetheless required in the process, it should then be specifically directed toward the type of decisions that need to be made. Just as we talk about a tiering of decisions, the data to support these decisions must be tiered."

3. Agencies Are Used to Single-Purpose Planning and Regulation

The existing tradition of single purpose functional planning and regulation by Federal, state, and local agencies may be one of the most significant obstacles to improving coordination in the regulatory system.

If conflicts in the regulatory system are to be resolved through advance planning, all participants must recognize the legitimacy of the competitive concerns of other agencies or interest groups. In a process that depends upon consensus among the competing parties to a dispute, each participating agency must be willing to compromise its single interests to the common plan, and must seek to accommodate the goals of others as much as legally possible without sacrificing the integrity of its own goals or requirements. For example, during the Grays Harbor Estuary planning process one representative of the Fish and Wildlife Service, an ardent environmentalist, found himself defending the port's compromise proposal for filling a part of the harbor for port expansion, while local and port officials were found supporting state and Federal demands for protection of the harbor to maintain fish migration routes and habitat.

Most Federal agency personnel, however, are experienced primarily in seeking implementation of narrower-purpose programs through the case-by-case review of permits. One reviewer of this report stated the problem as follows:

> "[T]he specific standards or criteria for development may vary from agency to agency depending on their basic sense or purpose. For example, a fishery agency would develop standards directed toward the fishery, a game agency may develop criteria primarily directed toward fauna, a city may base its standards on a priority need to remove urban blight, and a port may develop its program on a need to create jobs."

Such a narrow perspective is often a legitimate response to statutory responsibilities. For example, under the Fish and Wildlife Coordination Act, the National Marine Fisheries Service, the Fish and Wildlife Service, and state wildlife agencies are to be consulted by other Federal "action" agencies that propose to undertake or approve activities in water bodies. Such consultation, however, is with respect to fish and wildlife concerns; the action agencies are also expected to consult others for expressions of competing interests. No explicit incentive or responsibility is provided to the fish and wildlife agencies to review projects comprehensively or to balance other concerns in the overall public interest, and some concern exists that any attempt to do so will simply dilute the impact of those agencies' recommendations. The responsibility for "balancing" the competing interests of several agencies has thus typically fallen on the Army Corps of Engineers, when shoreline or wetland alteration is involved, or more recently on state coastal zone management agencies that have such responsibility.

Thus, to the extent that agency representatives view comprehensive planning for a special area as deemphasizing or diluting the purposes of their programs in the process of balancing other interests, they may resist direct involvement in such planning. Some officials may consider direct involvement in consensus planning or bargaining processes such as described above as an abdication of their own official responsibility to balance conflicting points of view and to decide what is in the best interests of the public and the Nation. Others may resist such planning because past attempts at open planning for public works projects have failed to produce consensus among opposing parties, or failed to produce a consensus that supported their preferred alternative. Unless care is taken to create an appropriate balance of interests, some environmental agencies may sense that the membership of a proposed collaborative planning group is too dominated by development or local government groups to ensure a reasonable balance in the plan.

In some cases agencies may resist direct participation in special area management planning because of the concept that land use planning should be the sole responsibility of state and local government. Where they have direct legal jurisdiction over permits, they fail to recognize that they are indirectly involved in land use and water planning as a result of their influence over project decisions. Even where portions of special area planning efforts extend beyond the geographic areas where Federal agencies have direct legal jurisdiction, such as upland areas beyond navigable waters, the uses of these lands affect nationally significant resources of concern to the agencies.

Direct involvement of interest group representatives, such as environmental and development organizations, property owners and other citizen groups, will also be necessary to assimilate their concerns into a specific plan. These representatives may resist special area management planning for many of the same reasons that agency representatives do, until such processes can demonstrate that, on balance, these groups can realize more of their objectives through advanced planning and consensus with others, than through single purpose challenges to proposals on a

case-by-case basis in the permitting process. However, consensus may be difficult to achieve from groups polarized on what are viewed as ideological issues. On the other hand, the failure to include these groups precludes effective plan implementation. In Coos Bay, Oregon, this issue is addressed by allowing at-large citizen membership on the planning team, allowing interest groups on technical advisory committees, and routine opportunities for citizen comment on plan proposals during the planning process.

4. Legal or Administrative Constraints May Prevent the Full Use of Plans for Determining Partial Compliance with Federal Regulations

If special area plans are to be effective in increasing the consistency and predictability of the Federal regulatory process, the plans must be used by regulatory agencies and given great weight in agency decisions. Local and state agencies and interest groups must be assured that the products of collaborative planning partnerships with Federal agencies will endure beyond the terms of office of the individual representatives of these agencies who participated in the process. If the local and state agency representatives to collaborative planning processes for special areas are expected to implement fully the products of these partnerships through state and local laws, they in turn will expect the Federal representatives to implement fully the plans through binding agreements that are enforceable under Federal law. For example, a port authority may be reluctant to legally dedicate certain lands for long-term natural preservation as part of a plan if participating Federal agencies are unable or unwilling to provide some long-term commitments to port-related development needs in the plan.

However, under existing law, regulation, and administrative policy, some agencies may not be sure they have the legal authority to provide binding commitments to plans, even if they have participated fully in the development of such plans and the results meet all of their expectations or concerns. For example, because of the "public interest review" requirement established in the regulatory program of the Army Corps of Engineers described in Section V, some Corps representatives suggest that it must remain neutral regarding any plans as an expression of agency policy governing permits. Corps regulations indicate that "officially adopted plans ... shall be presumed to reflect local factors of the public interest and shall be considered in addition with the other national factors of the public interest." (Emphasis added.) However, other Corps representatives have indicated that so long as a plan is reviewed and adopted following the same "public interest review" procedures as a permit application follows, the Corps could endorse such plans and use them in its subsequent review of permits. These legal constraints are not found in the substance of existing laws, which need to be preserved; rather, the procedures for implementing substantive standards may inhibit the use of plans in the case-by-case review of projects.

A related problem for all Federal agencies is the uncertainty over the type of instrument needed to provide legally binding commitments or formal expressions of agency support for special area management plans. For

example, although case law is very limited in this area, memoranda of understanding are typically used only for establishing procedural agreements or understandings among agencies, and substantive agreements may not be enforceable unless authorized by statute or regulations of the participating agencies following required administrative procedures.

VI. REVIEW OF FEDERAL PROGRAMS AFFECTING SPECIAL AREAS

This section of the report contains a brief analysis of the key Federal programs that review or control the impact of development in special areas of the coastal zone. It focuses on eight programs: the regulatory program of the Corps of Engineers; Fish and Wildlife Coordination and Endangered Species activities of the Departments of the Interior and Commerce; National Environmental Policy Act activities administered by the Council on Environmental Quality and EPA; Coastal Zone Management Act programs administered by the National Oceanic and Atmospheric Administration; and EPA programs to develop state implementation plans for the Clean Air Act, to consolidate EPA permits, and to develop state and areawide water quality management programs. Generally, the significance of each of these programs to special area management planning is greater for those programs that are evaluated first.

A number of other Federal programs can also have important impacts on the regulation of special areas in certain circumstances. These include programs such as Heritage Conservation and Recreation Service activities under the National Historic Preservation Act, comprehensive planning assistance by the Department of Housing and Urban Development under Section 701 of the Housing and Community Development Act of 1974, programs administered by the Departments of the Interior and Commerce under the Marine Mammal Protection Act of 1972, and state and regional water resources planning activities administered by the Water Resources Council under the Water Resources Planning Act of 1965. In general, however, these programs do not have as significant an impact on a wide range of special area management efforts as those discussed in the following pages. However, changes now being proposed in consistency provisions under the Water Resources Planning Act are expected to result in a stronger role for comprehensive state and regional water resources plans in improving the management special areas.

A. Regulatory Programs of the Army Corps of Engineers (COE)

The regulatory programs administered by the COE of primary concern to management of special coastal areas are permit programs under Section 404 of the Clean Water Act (for discharges of dredged or fill materials into U.S. waters) and Section 10 of the River and Harbor Act of 1899 (for structures or work in or affecting navigable waters of the United States). No discharge of dredged or fill materials can be authorized in U.S. waters without a COE permit under Section 404 of the Clean Water Act. Section 10 of the River and Harbor Act of 1899 prohibits the construction of any structure in or over the U.S. navigable waters, the deposition of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters, unless the work has been approved by the COE. The instrument of authorization for all such projects is an individual permit, general permit, or letter of permission.

COE permitting activities are highly decentralized. COE staff, totalling more than 800 employees, located in 38 District Offices throughout the country, process tens of thousands of permits each year

(in 1979, they handled approximately 20,000 permits). Any development activity proposed to occur in the waters of the United States -- ranging from the construction of a small boat dock on an inland creek to the building of an artificial island for a nuclear power plant -- must obtain a COE permit or letter of permission before it can be undertaken lawfully; the value of the developments involved totals billions of dollars each year. In addition, each of the other Federal agencies that reviews COE permits has regional offices with substantial staffs involved in this activity. Although it is difficult to estimate the total numbers of Federal agency personnel involved in such reviews because many of them have other responsibilities as well, the effort involves nearly 2 million employee hours every year for COE employees alone.

These permitting activities can, on occasion, be very controversial, involving environmental impact statements, extensive public hearings, appeals to higher level administrators and litigation over a period of several years. For example, an application to the Corps of Engineers for permits to construct and operate the Pittston Oil Refinery in Eastport, Maine, has been the subject of such appeals and litigation since the early 1970s. A National Marine Fisheries Service official estimated that his agency has spent nearly a quarter of a million dollars in evaluating and appealing decisions on this project, including at least $100,000 for the adjudicatory hearings of EPA for a final Federal determination on the project.

COE regulations provide that no Section 404 authorization will be granted unless the COE finds the proposed project to be in the public interest, based on an evaluation of the project's probable impact and a balancing of all other factors relevant to the proposal. General regulatory criteria considered with respect to every application include project need, alternatives, beneficial and detrimental effects, and cumulative effects. This "public interest review" is conducted only on applications for permits filed with the COE, not in advance of such applications.

In undertaking its review of an application, the COE gives great weight to the views of Federal wildlife agencies under the Fish and Wildlife Coordination Act (discussed in more detail in the next section), to historic, scenic, and recreational values as reflected by applicable state, regional, or local land use classifications, determinations and policies (or by similar Federal controls or policies), and to applicable state laws or programs for classification and protection of wetlands. The COE's processing of an application normally proceeds concurrently with the processing of other necessary regional, Federal, state, or local authorizations or certifications. In some areas, however, incompatible state review procedures or other state policies result in dual processing schedules. In addition, the COE sends copies of all permit applications to all Federal and state agencies that have expressed an interest in such projects, even if they have no regulatory responsibilities.

If a required Federal, state, or local authorization has been denied, the application for a COE permit will be denied without prejudice to the right of the applicant to reapply after other approvals are obtained. Unless the public interest review has identified overriding factors of

national interest, a COE permit generally will be issued following receipt of a favorable state determination on the project, provided the requirements of the COE regulations and other Federal statutes have been followed.

Under Section 404(b)(1) of the Clean Water Act, EPA has the authority in conjunction with the COE to issue guidelines for the discharge of dredged and fill materials in U.S. waters, in addition to regulations issued by the COE, and to review applications and draft COE permits to assure compliance with those guidelines. In general, under both Section 10 and Section 404(b)(1), EPA reviews and comments on proposals in the same consultation process as other Federal and state environmental agencies, and the COE considers and balances EPA comments as a part of its public interest review. EPA (in conjunction with the COE) has developed permitting guidelines that set forth the necessary conditions of compliance; the required determinations for evaluation and testing; and information on the values of, potential threats to, and measures to protect special aquatic ecosystems or functions. These cover general physical, chemical and biological factors, physical and chemical components of the aquatic and wetlands environment, special aquatic and wetlands sites, communities and populations or organisms dependent on water quality, human use characteristics, habitat development and restoration of water bodies, and general provisions including consideration of cumulative and secondary impacts on the aquatic ecosystem. Some of these factors must be considered for every permit application, while others are pertinent only in specific instances. The COE can override the EPA guidelines under Section 404(b)(2) if there is adverse economic impact on navigation or anchorage. However, EPA maintains final veto of a proposed permit under Section 404(c), described below.

Under Section 404(c) of the Clean Water Act, the Administrator of EPA can also prohibit or restrict the use of any defined area as a disposal site for dredged materials, or can prohibit disposal on any site, if he or she 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 affect on municipal water supplies, shellfish beds and fishery areas, wildlife or recreational areas. EPA has used this authorization only once to call up for review and prevent the issuance of a COE permit for a North Miami (Florida) landfill.

Memoranda of agreement have been signed pursuant to Section 404(q) of the Clean Water Act among the Secretary of the Army and the Secretaries of Commerce, the Interior, Agriculture, and Transportation, and the Administrator of EPA, to minimize duplication or needless paperwork and delays in the issuance of Section 404 permits. These memoranda of agreement provide that decisions on permit applications can be made in the most timely manner at the lowest level of agency authority and encourage the resolution of differences at the field level. They also encourage preapplication consultation with applicants and decisions on most permits within 90 days of public notice of filing of an application. Three classes of permit applications are established, which correspond to three different review procedures for objections to permit applications. If objections cannot be resolved at the District level, higher level

officials in the agency that disagree with the COE District Engineer can appeal to successively higher levels of authority in the COE until the dispute is resolved or reaches the level in the COE where a decision can be made; the level depends on the type of project or if the objections are not resolvable at the previous level. For projects involving environmental impact statements (NEPA) or activities of concern to agencies, the sequence of appeals is through the Division Engineer, the Chief of Engineers, the Assistant Secretary of the Army for Civil Works, and to the Secretary of the Army. For projects involving emerging policy issues, alleged violations of policy, precedent setting cases, or projects with substantial impacts (individually or cumulatively), such disputes can be reviewed through the Division Engineer, the Chief of Engineers and to the Assistant Secretary of the Army for Civil Works. All other cases would be reviewed by the Division Engineers. All MOA agencies have the right to elevate to the next level if they disagree with the decision.

The COE does not have a procedure for approving general plans in advance. Each District staff is available to advise potential applicants of studies or other information foreseeably required for later Federal action on specific permits. Whenever a District Engineer becomes aware of planning for work which may require a COE permit, he is responsible for contacting the developers to advise them of COE permit requirements, the need for an environmental review document and the nature of the COE public interest review. For example, the COE's Seattle District has recently been having preapplication discussions with Atlantic Richfield Corporation about the company's plans for a large marine terminal facility in northwest Washington. These meetings have been held jointly with state regulatory agencies, and have involved discussions of permit requirements, joint Federal-state environmental impact statement procedures, and information needs. The COE has now proposed a comprehensive revision to its permit program regulations that will include guidelines for preapplication planning.

Special area management plans are considered in COE permit processing in the sense that COE permits will not be issued where Federal, state, or local certification or authorization of the proposed work has been denied. In addition, because of the Federal consistency provisions of the CZMA, the COE is bound by such plans to the extent that the plans are part of a state's approved coastal zone management program. However, because of COE's long history and experience with the existing case-by-case public interest review, and the lack of explicit COE authority to "adopt" a plan in advance in a binding fashion, some COE officials may resist inclusion of regulatory criteria in plans, formal endorsement of plans, or binding commitments to special area plans as a part of their consideration of permit applications.

The latest draft of EPA's proposed Section 404(b)(1) guidelines (dated September 18, 1979) recognizes a limited role for planning and for providing certain advance information to meet Section 404 requirements. However, the required evaluations, tests, and determinations are not described in a sequence or form that indicates how plans for special

management areas could meet these requirements as part of a tiered concept of decisionmaking. For example, the draft regulations suggest that detailed examinations must be made of actual materials to be dredged and specific candidate disposal sites before any general regulatory determinations and findings can be made about candidate disposal sites and potential uses of those sites in advance of specific applications. EPA is currently reviewing agency comments on its draft regulations.

Recommendations

The COE and EPA should take the following actions to simplify and better coordinate permitting activities in specially sensitive areas of the coastal zone:

1. COE District Engineers do not currently have standard approaches or requirements for requesting mitigation of adverse impacts of development in wetland and intertidal areas, or for determining the extent to which proposed alterations of wetlands must be for water-dependent or water-related development activities. Failure to provide substantive guidance to them on these issues results in significant uncertainty in the permit process for applicants and other interested parties, as well as inconsistent guidance and practice in dealing with these issues. The regulations for the COE Regulatory Program and EPA's guidelines under Section 404(b)(1) of the Clean Water Act should be revised to include more specific substantive guidance for defining what activities are "primarily dependent on being located in, or in close proximity to, the aquatic environment" and for mitigating unavoidable adverse impacts to the aquatic environment from wetland alterations.

2. Lack of specific authority to participate in collaborative management efforts for special areas can reenforce reluctance to do so for other reasons. COE regulations should be revised to authorize District Engineers more explicitly to participate in, adopt, and use plans for special geographic areas that represent a consensus of participating agencies and the public. COE regulations with respect to public interest review criteria [33CFR320.4(a)] should indicate that criteria such as project need, desirability of alternatives, beneficial and detrimental effects, and probable impact can be assessed in part with special area plans when such plans are prepared with the involvement of the COE and affected Federal, state, and local agencies and contain sufficient accompanying documentation (such as programmatic environmental impact statements.) This would not obviate the need for a COE permit for activities allowed by such a plan. Permits would continue to be required, but some review criteria may have been addressed adequately by the plan. COE policies regarding the deference to be afforded other Federal, state and local requirements [33CFR320.4(j)] should be modified to recognize management plans which represent a consensus of these levels of government. Preapplication planning provisions of proposed amendments to the COE regulations should also recognize and endorse the concept of collaborative advance planning as a means to guide permit applications.

3. Similarly, permit simplification and coordination in special areas of the coastal zone could be furthered by revisions to EPA regulations and guidelines to ensure that field personnel can fully utilize collaborative planning techniques. As discussed above, the current proposed revisions of EPA's Section 404(b)(1) guidelines contain some provisions that would inhibit the use of tiered or stratified decisions and documentation, and should be revised so that interim general determinations and findings can be made for some criteria. EPA regulations for Section 404(b)(1) [40CFR230.70] should also be revised to recognize the collaborative planning process as a method for identifying areas that will be considered as possible future disposal sites and areas that will not be available for such purposes, and as a satisfactory written record of the decision. And EPA regulations for implementation of Section 404(c) [33CFR231] should be revised to recognize collaboratively developed plans identifying sites unsuitable for dredged spoil disposal, for subsequent withdrawal of such sites by the Administrator of EPA, and EPA should then utilize this authority for withdrawal of such sites as a method of providing long-term, legally binding implementation of such plans.

B. Fish and Wildlife Coordination Act (FWCA) Activities

The FWCA is administered jointly by DOI's Fish and Wildlife Service and NOAA's National Marine Fisheries Service. It requires Federal "action" agencies which propose or are authorized to undertake the impoundment, diversion, deepening, or other control or modification of waters of any stream or other body of water, or which are asked to approve any such activity, to give wildlife conservation equal consideration with other factors throughout the agencies' planning and decisionmaking processes. Such agencies must try to minimize losses to wildlife resources as a result of such projects, to require features which compensate for any such losses, and to enhance wildlife resource values when planning or approving projects. To ensure that these requirements are fully met, action agencies must consult with the National Marine Fisheries Service and the Fish and Wildlife Service, and with state wildlife agencies, to ascertain which project facilities, operations, or measures may be considered necessary by those agencies for such mitigation, compensation, and enhancement.

Pursuant to the FWCA, the National Marine Fisheries Service, the Fish and Wildlife Service and state agencies review a wide variety of proposals for projects including those subject to permits issued by the Coast Guard and the Army Corps of Engineers under Sections 9 and 10 of the Rivers and Harbor Act, and Section 404 of the Clean Water Act; projects subject to National Pollution Discharge Elimination System permits issued by EPA and state water quality agencies under Section 402 of the Clean Water Act; DOI lease sales for oil and gas development on the Outer Continental Shelf; energy and hydro-power projects that require licenses issued by the Nuclear Regulatory Commission, the Federal Energy Regulatory Commission, and the Rural Electrification Agency; and water resource development projects constructed and operated by the Army Corps of Engineers, DOI's Water and Power Resources Service, and the Department of Agriculture's Soil Conservation Service. The discussion of the FWCA below focuses on permits issued by the Army Corps of Engineers pursuant to Sections 10 and 404, because they constitute the majority of the permits reviewed by other agencies under the FWCA, significantly impact the coastal zone, and generally also involve direct state and local permitting of proposed projects.

FWCA consultation activities of the Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) are highly decentralized to Regional Directors and Area Managers. For example, Regional Directors of NMFS and Area Managers of FWS provide final recommendations to the Army Corps of Engineers on behalf of their agencies with respect to all applications for all Section 10 and 404 permits to the Corps pursuant to the Regulatory Program described in the preceding section. Each such application is described in a 1- to -4 page "public notice" which is sent by the Corps to appropriate Regional Directors of the FWS and NMFS and to state wildlife agency directors and other interested agencies and groups and the public. The Corps generally requests that comments on the applications be returned by those agencies within 30 days of the public notice. However, these time limits are often extended at the request of the

reviewing agency, either because the public notice has not been sent out promptly from the Corps' District Office or because the agency needs more time to complete its analysis. For large projects accompanied by an environmental impact statement, agency comments typically follow the schedule required for EIS review, and resource agencies withhold final comment on the project until they can review the draft EIS or, in some cases, the final EIS.

Considerable staff time is devoted in both the National Marine Fisheries Service and the Fish and Wildlife Service to FWCA activities. In 1979, NMFS received 11,916 public notices under Sections 10 and 404, and provided substantive recommendations on about 87 percent of them. It has about 45 professionals assigned to project reviews, and expands its capability by contracting with private and state biologists and joint processing with other agencies. The FWS estimates that it will expend 24,098 employee-days of effort on such reviews during the 1980 Fiscal Year. It received 19,126 public notices in 1979, and a 1980 GAO report on the review process cites an FWS estimate that no comment is provided on approximately 56 percent of the permit actions received for review due to funding and manpower constraints.

Permit applications vary from routine to highly controversial. An example of the former is a request that an applicant who wishes to bulkhead a small portion of his or her property place the bulkhead at or above the mean high tide line, rather than in wetlands. An example of the latter is the comments of the National Marine Fisheries Service on an application by the Vermilion Parish Police Jury to dam the mouths of 6 tidal streams in wetlands in coastal Louisiana to prevent saltwater intrusion west of Vermilion Bay. NMFS recommended in October 1973 that the permit not be issued for the proposed locations, based on evidence that substantial fisheries values of the Bay would be jeopardized by the conversion of 5 square miles of intermediate marshes and bayous previously subject to tidal flushing into freshwater marshes, and recommended that the barriers be relocated. NMFS contended that the District Engineer had failed to consider other alternatives to the proposal and the application was referred to the Chief of the Corps, who agreed and instructed the New Orleans District Engineer to reassess the project against other alternatives. Upon reassessment, the District Engineer again proposed to approve the project, based on the cost of alternative solutions. NOAA has reappealed the decision to the Assistant Secretary of the Army for Civil Works, further consultation has occurred, and a final decision is imminent.

Because the FWCA requires Federal action agencies to consider fish and wildlife conservation equally with other public values, but does not require full acceptance of the recommendations of Federal wildlife agencies with respect to fish and wildlife issues, differences in agency purposes and perspectives can lead to protracted delays in permitting decisions. A decision by a COE District Engineer not to accept a wildlife agency recommendation can and often does result in appeals to the COE Division Engineer or Headquarters pursuant to the appeal procedure described in the previous section.

Both FWS and NMFS have found that the "joint processing" of permit applications with the COE, EPA, and state resource agencies has greatly diminished the number of problems caused by inconsistent agency responses to applicants and the number of redundant permit review activities, and has also increased the efficiency of the review process. For example, each month the Norfolk District of the COE convenes a meeting to review 60 to 100 permit applications with each of the agencies involved in review under the FWCA and the Clean Water Act. The meetings are a quick way for the agencies to obtain agreement on information requirements, resource management issues, and in many of the least significant cases consensus of government positions. According to a FWS representative, the agency has reduced the time for permit review in the District from 1 1/2 employee-years for the review of about 500 applications to 24 employee-days for about 600 applications. At the same time it has reduced the proportion of permits on which it was taking no action because of lack of staff from 55 percent to less than 5 percent.

The FWS and NMFS do not have common policies or guidance for field personnel regarding required mitigation of wildlife losses involved in wetland or shoreline alteration. FWS guidance is limited to a December 1974 position paper with respect to fish and wildlife losses (which establishes a general principle that "losses should be prevented, or if not possible, mitigated (lessened in severity) or compensated for, in that order of priority") and 1975 guidelines entitled "Review of Fish and Wildlife Aspects of Proposals in or Affecting Navigable Waters" and "Oil and Gas Exploration and Development Activities in Territorial and Inland Navigable Waters and Wetlands." The 1974 guidelines are general and do not provide decisionmaking guidance; the 1975 guidelines are specific with regard to mitigation methods but do not include an overall mitigation policy.

NMFS guidance is limited to Southeast Region guidelines and criteria for field and contract biologists with respect to proposed wetlands alterations affecting habitat of the living marine resources for which NMFS is responsible and a Southwest Regional Habitat Protection policy. They are intended to expedite the permit review process by serving as an early reference regarding potential environmental problems that should be taken into account in project planning. However, while extremely valuable in habitat protection efforts, the guidelines are directed solely at addressing the NMFS mandate to protect and where possible enhance and restore habitat for living marine resources, and do not take socio-economic factors into account in determining the public interest in connection with proposed projects. Although the guidelines address considerations similar to those in the FWS guidelines (such as the extent of alternative sites available and water dependency), the guidelines are not the same as those of FWS in either specificity or substance, and may not be applicable to other NMFS Regions.

Thus, both the FWS and the NMFS may review the same project proposal, conduct the same or similar investigation, and provide different recommendations to the Corps. In some cases this may occur appropriately because the agencies are reviewing the proposal from different perspectives (e.g., wildlife rather than fisheries impacts, or marine mammal

rather than endangered species concerns). In 1980, GAO reported that "FWS and NMFS officials indicated that processing delays may occur when one agency offers no objection to a proposal while the other agency objects. In such instances, the Federal position appears conflicting since two agencies which review similar factors disagree on potential adverse impacts related to those factors. This problem was discussed during public hearings and confirmed during our analysis of dredging permits."

Concerns have been raised that the system which has evolved has not fully implemented the goals of the FWCA. For example, in 1974 GAO investigated 28 water resource developments typical of those which have had a major impact on wildlife resources. The report noted, for instance, that anadromous fish have essentially lost access to about 76 miles of spawning and nursery grounds on the Cape Fear River in North Carolina and its tributaries, because five navigational dams act as barriers which the fish can only pass during boat lockages or when high water allows them to swim over the dams. Game fish in North Carolina have reportedly suffered estimated losses of 90 percent following channelization of portions of watersheds in areas like the Neuse River Basin. GAO concluded that wildlife conservation had not been considered equally with other features in planning these projects; that procedures were needed for Federal agencies to observe in carrying out the coordination requirements of the FWCA; and that criteria should be established for determining the justification for mitigation, or enhancement measures related to water resource developments.

In response to these problems, President Carter issued a Water Policy Memorandum on July 12, 1978, directing the Secretaries of Commerce and the Interior to promulgate regulations defining the requirements and procedures applicable under the FWCA. Proposed regulations were published jointly by the Departments of the Interior and Commerce in May 1979. They included provisions regarding the requirements for equal consideration of wildlife resource values in project planning, consultation procedures, reporting requirements for Regional Directors of the wildlife agencies, and action agency findings with respect to wildlife resources.

For example, under the proposed regulations, action agencies would be required to prepare written findings on which measures recommended by wildlife agencies with respect to the selected project plan and its alternatives are or are not believed to be justified, based on substantive economic, environmental, and other criteria. Loss mitigation and prevention assessments and evaluation techniques would be required to be based upon wildlife habitat values, with monetary values permitted to measure the cost effectiveness of alternative mitigation plans, but not to justify refusal to adopt mitigation measures. Thus, for example, the monetary cost of implementing a wildlife agency's recommendation for mitigation of the adverse impacts of a proposal (such as returning diked wetlands to their natural condition by removal of the dikes) could not be used alone to reject the mitigation alternative in favor of alternatives of lesser natural value.

The proposed rules would also define the term "equal consideration" and identify some of the kinds of improper reasons for rejecting mitigation recommendations. Recommendations could not be rejected because wildlife conservation is not a "purpose" for which a Federal project was or can be authorized, because the action agency may not have adopted a habitat-based wildlife impact assessment and evaluation procedure, because the measures do not have a favorable monetary cost-benefit ratio, because project beneficiaries are not willing to bear the costs necessary to compensate for wildlife resource properties, or because compensation measures are outside the immediate project boundaries.

Based on several hearings and substantial written comment on the May 1979 proposed regulations, the Departments of Commerce and the Interior are developing revised proposed regulations which were issued in December 1980. This version of the FWCA regulations would govern other Federal agencies' procedures for implementing the FWCA, but would provide only interpretive guidelines for those agencies' substantative decisionmaking criteria, as the Departments of the Interior and Commerce have determined they do not have legal authority to adopt substantive rules under the FWCA that would bind other agencies' substantive decisionmaking. The proposed rules are generally the same as the proposed May 1979 rules. However, decisionmaking criteria of action agencies such as the Army Corps of Engineers will not be determined by the substantive interpretations of the FWS or NMFS in carrying out the FWCA.

The reproposed regulations for the FWCA sets forth uniform implementation procedures designed to reduce delays while ensuring full consideration of fish and wildlife values in Federal planning for specific projects. For example, the proposed rules not only require Federal action agencies to provide prompt written notice of applications to appropriate wildlife agency officials, but also require action agencies to encourage applicants for specified major developments to consult with wildlife agencies prior to making formal applications. Until recently, wildlife agencies were providing preapplication consultation in only a limited number of cases, because of limited agency resources (a single consultation can take up to 2 days of staff time) and the absence of any guidance or mandate for such preapplication consultation to either the applicant or field personnel. Memoranda of agreement recently signed between the Secretary of the Army and the heads of these agencies pursuant to Section 404(q) of the Clean Water Act, as described in the previous section of this report, provide encouragement for such preapplication consultation with wildlife agencies. The newly proposed FWCA regulations reinforce these agreements.

Under the newly reproposed FWCA procedures, wildlife agencies must also report within agreed-upon time frames on project-related effects upon wildlife resources as well as alternative means and measures to conserve wildlife resources, and must coordinate and combine FWCA reports with other environmental reviews to the maximum extent possible. Wildlife agencies must provide in their reports to action agencies specified types of information (such as wildlife problems and needs, the positive and negative impacts of alternative plans, and the plan they prefer from

the standpoint of wildlife conservation), and must invite public participation in development of FWCA reports and recommendations when significant wildlife resource issues are involved.

On September 9, 1980, the FWS issued a notice of availability of draft guidelines on FWS mitigation policies designed to "ensure consistent and effective FWS recommendations, allow Federal and private developers to anticipate FWS recommendations and plan for mitigation needs early, and reduce FWS and developer conflicts as well as project delays." In developing this policy, FWS examined 365 examples of FWS field level mitigation recommendations, and consolidated the principles used in these recommendations into an overall policy statement. Its primary focus is on mitigation of habitat value losses. The guidelines establish a range of mitigation approaches for five classes of resources, based on the principle of avoidance or full compensation for the most valued resources and no required mitigation for resources of no value to important species. The degree of mitigation required corresponds to the importance and scarcity of the habitat at risk. The guidelines indicated that FWS:

> "Will require as a condition for support that projects be designed to avoid or minimize losses, including 1) adoption of features that will cause no significant disruption of the structure and function of the larger ecosystem of which the project will be a part, 2) selection of the least environmentally damaging practical alternative, and 3) assuring that the proposed activity is water-dependent if it is a work, structure or activity that will be within or affect waters of the United States. In addition, if the project design cannot rectify all losses or reduce or eliminate them over time, then the service will require that the public be compensated for such loss consistent with the appropriate mitigation goal for that fish and wildlife resource as a further condition for support."

This draft policy is a major step in the direction of consistent mitigation policy that could improve the predictability and uniformity of FWS comments on plans and projects and is currently being reviewed by other agencies concerned with wetland habitat mitigation.

Recommendations

The National Marine Fisheries Service and the Fish and Wildlife Service should take the following actions to simplify and better coordinate permitting activities in specially sensitive areas of the coastal zone:

1. NMFS and FWS field personnel do not currently have standard approaches on requirements for providing consultation advice to Federal action agencies under the FWCA on matters such as the amelioration or mitigation of project-related losses to wildlife resources. Although the rules proposed by those agencies pursuant to the FWCA in May 1979 generally describe the categories and types of information to be provided by wildlife and action agencies and by applicants, and the resource management considerations to be addressed in project planning, the proposed criteria do not contain substantive policies that can provide clear

predictable direction for applicants and other interested parties. The newly issued FWS draft mitigation policy is a notable exception to this situation. The proposed FWCA regulations should be revised (or new regulations promulgated) to provide specific substantive guidance with respect to wildlife agency recommendations regarding mitigation and amelioration of adverse project impacts, or the recent FWS guidelines should serve as the first step in a joint FWS/NMFS/EPA/COE effort to establish common Federal policies for such mitigation.

2. The FWCA requires full involvement of Federal wildlife agencies throughout the project planning, approval and implementation process, and provides the primary authority for NMFS and FWS participation in collaborative planning for special coastal areas. Without specific authority to participate in such collaborative management efforts, and, even if wildlife agencies have participated directly in the formulation of an area plan, have provided full consultation in accordance with the procedures of the FWCA, and have determined that the plan fully compensates for losses of wildlife resources productivity and that trade offs made between wildlife conservation and other plan features are justified, no certainty exists that the findings documented in the plan will bind subsequent administrators to similar findings during the review of Corps' permit applications for projects that are fully consistent with the plan.

The reproposal of new regulations pursuant to the FWCA will provide an opportunity to incorporate special area management planning concepts. The FWCA regulations should be revised to provide explicit authority and encouragement for Federal and state wildlife agencies to participate in and adopt special area management plans, as a means for making broad findings and meeting decision criteria for subsequent project applications in planning areas. This guidance should establish how wildlife agencies can utilize such planning for preapplication consultation and guidance to applicants and other government agencies, the form and nature of approval of such plans by wildlife agencies, and the legal effect of such approvals on subsequent reviews by the agency. It should also provide additional encouragement for joint processing of permit applications.

C. National Environmental Policy Act (NEPA) Activities

NEPA is administered by the Council on Environmental Quality (CEQ) and EPA. It requires that all Federal proposals significantly affecting the quality of the human environment be accompanied by an environmental impact statement (EIS). The EIS provides decisionmakers and the public with a full and fair discussion of significant environmental impacts of the proposal and reasonable alternatives that would avoid or minimize those impacts or enhance the quality of the human environment.

Any Federal agency that proposes to undertake a major action must determine whether such action will significantly affect the human environment and thus require the preparation of an EIS. If the agency decides not to prepare an EIS, it must make its assessment and "finding of no significant impact" available to the public. If it determines that an EIS will be necessary, it must work with other Federal agencies that are also involved in the same or similar actions to decide which agency will have lead responsibility for preparing the EIS.

The lead agency must conduct a "scoping" process to identify the significant issues related to the proposed action and to determine the scope of the issues to be addressed in the EIS. This scoping process is a public process which must involve affected Federal, state, and local agencies, indian tribes, the proponent of the proposed action, and other interested persons. The EIS is then prepared in two stages -- draft and final -- so that interested agencies and other persons have the opportunity to fully review and comment on the document and to see the changes in the document (or other responses to their comments) before final action by the agency on the the proposal. Public hearings on the draft EIS are normally held in the area to be affected.

The EIS must describe the purpose of and need for the proposed action, other alternatives to the proposed action (including no project), the environment that will be affected by the action, the environmental and other consequences of each of the alternatives, and information about the preparation and distribution of the document. The final EIS must also describe the comments received on the draft EIS and indicate how those comments have been addressed. Agencies are required to indicate the availability of all EISs to EPA, which publishes a notice of all available documents on a weekly basis. No decision can be made by an agency to proceed with a proposed action that is the subject of an EIS within 90 days of the EPA notice of availability of the draft EIS or within 30 days of the EPA notice for final EIS, except in limited circumstances. The agency official making the final decision on the proposed project must consider the final EIS as a part of his or her decision process.

NEPA has firmly established a comprehensive decisionmaking process in the Federal system which ensures that environmental issues are explicitly considered. Draft and final EISs have become the focal point for interagency and public comment and dialogue (and in many cases litigation) on proposed Federal actions significantly affecting the environment. In addition, the passage of NEPA has prompted at least a dozen states to enact environmental laws requiring the preparation of similar environmental impact documents for public and private development activities.

Between 1,200 and 1,400 draft and final EISs are announced each year by EPA for significant Federal actions. Most of them are produced by EPA and by five Departments -- Housing and Urban Development, Transportation, Defense, Interior, and Agriculture. The Army Corps of Engineers produces about 70 percent of the Defense Department's EISs, many of which involve regulatory decisions affecting coastal resources. The costs of these EISs can vary significantly, from less than one hundred to several million dollars. For example, the costs of EPA's wastewater treatment facility EISs, which have been closely monitored by EPA, have ranged between thirty thousand and two-hundred thousand dollars. In general, CEQ claims that EIS preparation costs tend to average between one-fourth of 1 percent and 1 percent of total project costs.

The NEPA process has not been without critics. These were summarized in 1977 in CEQ hearings, a report of the Federal Paperwork Commission and a GAO investigation of the implementation of NEPA by Federal public works agencies. EISs had become too lengthy and failed to highlight key options and major issues; EISs were being prepared when agencies had already selected preferred alternatives rather than during the planning process; EISs were being prepared for projects with wide geographic and programmatic impacts that could not be addressed in the context of a single project; Federal agencies were unduly failing to modify alternatives and decisions to accommodate the views of state and local governments and concerned citizens; parties to disputes tended to use EISs as the basis for litigation, and other ways of resolving such disputes needed to be developed; state and Federal impact statements overlapped unnecessarily often and could be further coordinated and streamlined; and environmental analyses too often did not meet acceptable professional standards.

A number of improvements in the NEPA process were made by CEQ in regulations, effective July 30, 1979, to reduce paperwork and improve the coordination and quality of Federal decisions. These new regulations, which are still in the process of being implemented by Federal agencies, specifically address the relationships between NEPA and agency planning in order to integrate the NEPA process into early planning, emphasize cooperative consultation among agencies before an EIS is prepared, provide for the swift and fair resolution of lead agency disputes, identify at an early stage the significant environmental issues, and provide a mechanism for putting appropriate time limits on the EIS process. Changes made to improve coordination include allowing an agency to adopt all or part of another agency's approved Federal EIS, combining NEPA documents with other agency documents, and designating other agencies with legal jurisdiction over a proposed project or special expertise as cooperating agencies to assist in preparation of the EIS.

CEQ regulations require Federal agencies to cooperate with state and local agencies to reduce duplication between NEPA and state and local environmental review requirements, unless the agencies are specifically barred from doing so by law. These joint activities include planning processes, environmental research and studies, public hearings, and environmental assessments. Federal agencies are directed to cooperate with state and local agencies "to the fullest extent possible" in the process, including the preparation of joint environmental impact statements with joint Federal, state, or local lead agencies, so that one document can be prepared that will comply with all applicable environmental review laws.

Many aspects of the collaborative planning process for management of special areas described in Section V of this report parallel key features of the NEPA process. For example, NEPA regulations call for an early and open process for determining the nature and scope of significant issues to be addressed in connection with a proposed action. This is directly analogous to the process of issue identification carried out in the earliest stages of special area management planning. CEQ regulations encourage agencies to stage their EISs to eliminate repetitive discussions of the issues addressed at earlier levels of environmental review. Similarly, the special area management process encourages agencies to tier decisions -- to eliminate repetitive consideration of regulatory decisions on broad planning issues that have been resolved and agreed to in the body of the plan, thus allowing regulatory agencies to focus on the detailed issues specific to the permit actions. CEQ regulations require an agency to prepare a concise public record of its decisions. Special area management plans, including agency memoranda of agreement or other forms of approval, also serve as a comprehensive record of decisions of the participating regulatory agencies regarding provisions of the plan that will meet their regulatory requirements, alternatives considered, means agreed upon to avoid or minimize environmental harm, and mitigation programs adopted.

Because of the similarity of these key features, NEPA can serve as a mechanism for structuring the planning process for special coastal areas and for relating the planning to major Federal and state decisions that may be required. Although this similarity has not been fully tested to date in a special area management planning project, a programmatic EIS being prepared jointly by the Federal and state agencies participating in the Grays Harbor Estuary management planning process will be a partial test of the concept. The EIS, which is being prepared after the terms of the plan have been determined, covers proposed state and Federal actions to amend the Washington Coastal Zone Management Program to incorporate the plan, state action to adopt local Shoreline Master Programs needed to implement the plan, and proposed memoranda of understanding among Federal agencies to use the plan as a basis for subsequent Federal agency decisions on permit applications within the planning area.

Recommendations

CEQ should take the following actions to further simplify and better coordinate permitting activities in specially sensitive areas of the coastal zone:

1. CEQ can provide substantial guidance to Federal regulatory agencies to simplify and better coordinate permitting activities in specially sensitive areas of the coastal zone. In particular, they can support concepts of joint planning and environmental assessment and tiering of regulatory decisions and documentation which are necessary to fully realize the benefits of collaborative planning for improved predictability and efficiency in the regulatory process.

Administrative guidance to clarify current CEQ regulations could eliminate some uncertainty about the relationship of the two processess. Current NEPA guidelines suggest that "scoping" be performed after agencies decide to prepare an environmental impact statement. In a typical special area management planning process, the decision to prepare an EIS will not be made until the nature of the various Federal agency commitments to the resulting plan can be determined, which will be late in the process, when consensus is reached with other agencies on the provisions of the recommended plan. Postponement of the scoping process until consensus is reached on the plan would deprive the parties to the process of the views and discussion of the issues that should result from an earlier scoping meeting. If a scoping meeting is conducted at the early stage of the planning process, a second meeting prior to formal commencement of EIS preparation would be superfluous. CEQ administrative guidelines should thus clarify the scoping process to recognize the validity of early scoping meetings conducted as part of the special area management planning process.

2. Although current CEQ regulations provide for the concept of tiering of agency actions and related environmental impact statements, they do not clearly indicate whether the tiering concept applies to agency regulatory decisions. In the absence of such explicit guidance, agencies may be willing to tier actions related to capital project decisions, such as water resource conservation structures, but may resist tiering agency actions related to permit applications in advance of the receipt of specific project proposals. CEQ regulations implementing NEPA should be clarified by administrative interpretation to allow and encourage agencies to adapt the tiering concept of NEPA environmental impact statements to a tiering of agency regulatory actions -- to adopt special area management plans which meet agency review procedures and regulatory criteria, based on a programmatic EIS, and relate subsequent permit decisions to the adopted plans.

D. The Endangered Species Program

The Endangered Species Program was established by the Endangered Species Preservation Act of 1966, and was substantially expanded by the Endangered Species Conservation Act of 1969 and the Endangered Species Act of 1973 (as amended in 1978 and 1979) (ESA). The Program is administered primarily by the Department of Commerce's National Marine Fisheries Service (for most marine species) and the Department of the Interior's Fish and Wildlife Service (for all other species). The Department of Agriculture's Animal and Plant Health Inspection Service is responsible for enforcing Program export and import controls.

As set forth in the ESA, the statutory purpose of the Program is "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...." The Fish and Wildlife Service has elaborated on this by establishing as one of its operational goals to "Prevent endangerment and extinction of plant and animal species caused by man's influence on existing ecosystems, and return such species to the point where they are no longer threatened or endangered." A June 1980 FWS program management document indicates that the "ultimate success for this program is the removal of endangered or threatened species from the list (of such species) because their recovery has been accomplished and their future is reasonably secure."

The ESA requires that the Secretaries of Commerce and the Interior determine whether species are endangered or threatened, specify any habitat of such species (which is then considered to be "critical habitat"), and "list" all endangered and threatened species and the critical habitat within the range over which it is endangered or threatened. The FWS has estimated that 20,000 U.S. species may be "endangered" or "threatened" as these terms are defined in the ESA. By August 1980 it had listed 231 endangered and 47 threatened species.

In the June 1980 FWS program management document, 5 of the 6 highest priority fish and wildlife recovery problems involved endangered or threatened species in coastal areas, including endangered species in South Florida Wetlands and Keys, rails and terns in California's coastal wetlands, endangered birds in the Texas Gulf Coast, migratory waterfowl and other migratory birds in the Lower Mississippi River, and the Peregrine falcon in the North Slope of Alaska.

The ESA requires the development and implementation of "recovery plans" for the conservation and survival of endangered and threatened species, and authorizes the use of land acquisition. It executes cooperative agreements with states for the management of endangered and threatened species which reside within the state. Requirements for state conservation programs are accompanied by Federal financial assistance.

The heart of the Federal Program, however, is Section 7 of the ESA, which requires all Federal agencies to ensure that "actions authorized, funded or

carried out by them are not likely to jeopardize the continued existence of endangered species and threatened species or result in the destruction or adverse modification" of their critical habitat. Section 7 requires all Federal agencies to consult with FWS or NMFS on any such project or action that may affect listed species well before the exercise of agency discretion that would result in contracts for construction, actual construction activities or other activities which would foreclose the formulation or implementation of any reasonable or prudent alternative measures. FWS and NMFS are required to advise other agencies about the consequences of their proposed actions, and to help those agencies utilize their authorities to conserve endangered and threatened species.

The ESA and applicable NMFS and FWS regulations allow this interagency consultation process to proceed in stages. It may begin with informal discussions between the FWS, NMFS, and a Federal agency on questions involving endangered or threatened species potentially affected by a proposed project or activity in which the agency will be involved. If a construction project is involved, the Federal agency should request information from NMFS and FWS as to which species listed or proposed to be listed as endangered may be in the affected area (species list). Within 30 days of the request, FWS or NMFS will advise the agency whether such species may be present. The Federal agency shall then conduct a biological assessment to determine the nature and extent of the impact the proposed project may have on listed and proposed species. This assessment should be completed within 180 days or a time mutually agreed upon. Upon completion, the biological assessment should be submitted to FWS and/or NMFS.

If it is determined that the proposed activity or program may affect an endangered or threatened species or a designated critical habitat, the Federal agency must initiate formal consultation. FWS and NMFS may also initiate formal consultation by request to the Federal agency if the activity or program has not been subject to prior formal consultation. Formal consultation requires the agency to transmit to FWS or NMFS a description of the project or activity, the area and species affected, how the project may affect listed species including an assessment of cummulative impacts, reports such as a biological assessment, and other relevant information. Within 90 days (or longer, if the agencies agree) the FWS and/or NMFS must provide the agency with a biological opinion as to whether the impact of the proposed activity or program is likely to jeopardize the continued existence of endangered or threatened species or adversely modify or destroy designated critical habitat. An opinion which identifies jeopardy to a species must also discuss reasonable and prudent alternatives to the program or activity. If the FWS or NMFS biological opinion concludes that the proposed activity or program is likely to jeopardize the endangered or threatened species or adversely modify critical habitat (e.g. a "jeopardy opinion"), the Federal agency must either cease the activity or program, adopt one of the alternatives specified in the opinion or make its own determination whether to proceed with the activity or program. In the case of a jeopardy opinion, the Federal agency should submit in writing their determined course of action. This completes the consultation process.

The 1978 amendments to the ESA established a mechanism for review of agency decisions and exemptions from application of the ESA. Applications for

exemption must be made to the Secretary of the Interior or Commerce, within 90 days following termination of the consultation process or in the case of an agency license or permit within 90 days after a Federal agency takes final action on a proposed permit or license. Application may be made by a Federal agency, by the governor of the state in which the proposed agency action may occur, or by a person whose application for a permit or license has been finally denied. Upon receipt of an application a three-member review board is appointed. (One member of which is appointed by the appropriate Secretary, one is a presidential appointment based on the governor's recommendations, and one is an administrative law judge appointed by the Office of Personnel Management.) Following appointment of the board, the Secretary submits a copy of the application to the board. Within 60 days of receiving the application, the Secretary submits his or her views on the application to the board. Within 60 days after its appointment, the board conducts a "threshold review" to determine whether a required biological assessment was conducted, whether irreversible or irretrievable commitments of resources have been avoided, whether consultation responsibilities have been carried out in good faith and reasonable and prudent alternatives have been considered, and whether there is an irresolvable conflict. If a review board makes a negative determination on any threshold, it notifies the applicant of its findings and reasons, which, upon receipt by the applicant, terminates the exemption process. Upon such termination, consultation can be reinitiated or a new application can be made if the deficiency is subsequently corrected. If a review board makes a positive finding on each of the threshold determinations, it shall notify the applicant and all other parties that it qualifies for consideration by the Endangered Species Committee and the matter is referred to the Endangered Species Committee. The board has 180 days to prepare a report and submit it to the Committee.

The Endangered Species Committee consists of the Secretaries of the Interior, Army, and Agriculture, the Administrators of EPA and NOAA, the Chairman of the Council of Economic Advisors, and a representative of each affected state. Within 90 days of receipt of the review board's report, the Committee must grant or deny an exemption from the ESA within 90 days based on determinations of whether reasonable and prudent alternatives to the proposed action exist, whether the benefits of the action outweigh the benefits of alternative actions consistent with the conservation of the species or habitat, whether the proposed action is in the public interest, and whether it is of regional or national significance. The ESA requires the Committee to establish reasonable mitigation and enhancement measures to minimize the adverse effects of exempted actions.

The FWS conducts activities connected with listing and consultation for endangered and threatened species and critical habitats from its Washington Office and regional offices, and is in the process of further decentralizing these activities to area offices. A July 1979 General Accounting Office report identified 328 FWS staff involved in the Endangered Species Program (of which 18 were assigned primarily to the listing process) in October 1978; FWS headquarters staff recently reported that only 197 full-time permanent staff were involved in the program, with other staff employed on a seasonal or part-time basis. The FWS Program budget for fiscal year 1979 was based on estimates that 90 percent of the ESA consultations would require an average of one hour

to complete, 5 percent would require an average of 8 hours, and 5 percent would require an average of 90 hours to complete. FWS estimates that it held 3,710 consultations in fiscal year 1980.

NMFS has a smaller volume of Endangered Species Program activities. Informal consultation and information requests are handled by 5 Regional Offices and 4 Research Centers. Formal consultation is conducted by both the Regional and Headquarters Offices, and NOAA's Assistant Administrator for Fisheries approves all ESA biological opinions. Two professional staff in Washington, D.C. and 15 in the Regional Offices handle the Program with part-time assistance from Research Center staff. NMFS processes between 50 and 70 formal consultations per year.

Endangered species questions can be among the most controversial of environmental issues. For example, in June 1978 the Supreme Court upheld the ESA and blocked completion of the Tellico Dam in Tennessee when it concluded that the ESA applied to the proposed project. The project would jeopardize the continued existence of a 3-inch long perch, the snail darter, and an injunction was warranted to protect the species. Congressional reaction to this court action and public concern that the ESA could hurt other projects and programs regardless of the public benefits they would provide led to the 1978 amendments creating the Endangered Species Committee review procedure. When the Committee reviewed the Tellico Dam case, it voted to block completion of the Dam on the basis that the alternative to completion -- development of the Little Tennessee Valley without the reservoir--was feasible, compared favorably with the benefits and costs of the Dam, and would not jeopardize the snail darter. The Committee voted unanimously not to grant an exemption to the ESA on economic grounds because they determined that the remaining costs of the Dam continued to exceed the economic benefits. Notwithstanding this decision, Congress subsequently exempted the Tellico Dam from the ESA by legislation.

Recent amendments to the ESA should allow FWS and NMFS to deal with some of the major sources of past concerns. For example, prior to the amendments Federal agencies could make irreversible or irretrievable commitments of resources which were likely to jeopardize the continued existence of species that were proposed for listing, before a final decision was reached with respect to ESA issues. Such commitments of resources are no longer permitted. Federal agencies are now required to confer on proposed species which may be jeopardized by the proposed activity. Similarly, critical habitat must now be determined for every species at the same time it is listed as endangered or threatened when prudent. Prior to this change, critical habitat determinations were optional. In some instances (such as Tellico Dam) critical habitat was not defined until projects were challenged based on the existence of a listed species. Finally, GAO reported that of the 42 consultations initiated in FWS Regions I and IV during the first 4 months of 1978, 57 percent were not rendered in 60 days (as then required by ESA regulations) due to inadequate staff resources and inadequate information provided by other Federal agencies. This problem should be alleviated by the requirement that Federal agencies involved in the proposed construction project

conduct the biological assessment needed to identify listed or proposed species likely to be affected, and by lengthening the consultation period to 90 days or a time mutually agreed upon by the NMFS or FWS and the Federal agency. The information to be submitted with the formal consultation request for nonconstruction projects is basically the same.

Of the remaining issues with respect to implementation of the ESA (such as improving species recovery efforts), by far the most significant for coastal area planning is the tension between strict application of the law and substantial vested public and private commitments to specific projects. A 1979 GAO evaluation of FWS Endangered Species Program activities documented a number of instances where existing FWS policies and procedures were not being applied consistently under the ESA for fear of the political consequences for the continued existence of the ESA. For example, in reviewing delays in the listing of a spiderlike invertebrate called the "cave harvestmen" in an area to be flooded by the nearly completed New Melones Dam in California, GAO quoted the FWS Endangered Species Program Manager as stating, "I make bio-political decisions every day. Right now my main concern is saving the ESA. The harvestmen populations will not be listed. I am not about to lose the ESA because of a couple of spiders."

Although the amendments should reduce the problem of ESA concerns being raised late in the process of developing Federally sponsored projects, it will not deal with the issue for private projects that require Federal permit actions. Because the process continues to rely primarily on case-by-case Federal permit applications or other specific proposals to trigger the Federal ESA consultation requirements, these problems will continue. For example, the Army Corps of Engineers typically does not request information or initiate the consultation process with the FWS or NMFS until it receives an application for a permit under Section 404 of the Clean Water Act, even though it may be aware that specific areas under its jurisdiction, such as wetlands where endangered or threatened species are known to exist, may be subject to substantial development pressures. By the time a permit application is filed, the applicant may have acquired land, obtained local zoning approvals, and invested substantial funds in preparing a development proposal. If NMFS or FWS then determines that the proposal is likely to jeopardize the continued existence of an endangered or threatened species, considerable inequities may exist and considerable political controversy may result.

Most planning for non-Federal lands and waters remains in the hands of state and local governments, which are not subject to the consultation requirements of the ESA. The major Federal connection with such advance planning is through the requirement for Federal approval of state and local plans designed to meet Federal requirements such as State Implementation Plans under the Clean Air Act, Water Quality Management Plans under the Clean Water Act, and Coastal Zone Management Plans under the Coastal Zone Management Act. However, NMFS and FWS have not been successful in persuading Federal agencies to request information or initiate consultations on approvals of such state or local plans. Most such plans that are designed to meet Federal requirements establish general policies, procedures, and performance standards guiding development, but do not provide

for geographically specific land and water use designations which might jeopardize specific species or habitats. It is difficult for agencies to determine how such plans would affect endangered or threatened species until the broader policies are translated into specific actions, permits, or more geographically specific local or regional land use policies or designations. For example, state policies giving priority to water-dependent development cannot be reasonably assessed in terms of impacts on endangered species until these policies result in the allocation of specific sites for water-dependent industrial uses, or marina development that might affect the critical habitat or a listed species.

Endangered species issues can be important even when detailed collaborative planning efforts are undertaken in advance for specific coastal areas. In planning for Grays Harbor, Washington, the Estuary Management Task Force did not become aware of concerns about an endangered species of peregrine falcon until after tentative consensus had been reached on a preliminary draft management plan based on 2 years of interagency and public effort. Information was then requested from NMFS and FWS and a biological assessment was commenced; the results could delay completion of the Grays Harbor Plan by substantially affecting and requiring renegotiation of the mitigation agreements that are one of the key factors in the Plan.

Regulations being drafted by FWS and NMFS will allow requests for formal consultation to encompass a number of similar individual activities within a given geographical area, administrative unit, or segment of a comprehensive plan. It is not clear, however, whether final consultation can be initiated on a number of activities, such as Federal permits, within a geographic area or plan in advance of specific project proposals.

Recommendations

Amendments to the Endangered Species Act in recent years, together with refinements of ESA regulations underway, will do much to reduce opportunities for conflicts created by commitments of substantial public and private investment prior to final resolution of ESA issues. However, more could be done to encourage early incorporation of endangered species concerns into planning for Federal projects and combined Federal, state, and local decisions. FWS and NMFS should take the following actions to simplify and better coordinate permitting and planning activities in specifically sensitive areas of the coastal zone:

1. Through the requirement for Federal approval of state, areawide, and local plans designed to meet Federal requirements for programs such as state implementation plans under the Clean Air Act and water quality management plans under the Clean Water Act, FWS and NMFS have an opportunity to initiate early, informal consultation with other Federal permitting agencies on endangered species issues that may affect the kinds of development and protection measures incorporated into those plans.

Regulations being drafted by FWS and NMFS with respect to the Endangered Species Program should encourage Federal agencies contemplating approval of such plans to request information and initiate consultation procedures early where such plans will guide future Federal actions. Regional personnel should be instructed to follow and participate in the development of such plans.

2. In some particularly sensitive areas, problems created by the case-by-case Federal permitting approach of the Endangered Species Program and other Federal regulatory programs are resulting in collaborative management planning efforts of the type discussed in previous sections of this report. In such cases, ESA regulations should authorize regional FWS and NMFS personnel to participate in such planning in order to integrate endangered species requirements in the resulting plans from the earliest stages. If the plans provide sufficient information, FWS and NMFS should also be authorized to issue biological opinions on the effects of the proposed plans on endangered or threatened species or their critical habitats, or a conference report on proposed species which can serve as the required opinions for subsequent Federal activities covered by the plans unless new information on species or critical habitats is made available or a new species is listed that may be affected which would require revision of the opinions.

E. The Coastal Zone Management Program

The Coastal Zone Management Act of 1972, as amended in 1976 and 1980 (CZMA), is administered by the Office of Coastal Zone Management (OCZM) in the Department of Commerce's National Oceanic and Atmospheric Administration. The CZMA provides for Federal grant assistance to coastal states and territories for the development and implementation of comprehensive state coastal zone management programs, and for grants and loans to plan for and ameliorate the impacts of a wide variety of coastal energy activities.

To date, 25 states and territories covering 78 percent of the United States coastline have developed coastal management programs approved by OCZM as meeting the requirements of the CZMA. In order to receive such approval, the program must specify: coastal zone boundaries; permissible land and water uses which have a direct and significant impact on coastal waters; coastal areas of particular concern; means of state control over land and water uses; guidelines on priorities of use in certain areas; an organizational structure to implement the program; a planning process for the protection of and access to public beaches and other coastal areas of special value; and a planning process for assessing the effects of and controlling shoreline erosion. The state must also demonstrate that: the program provides for adequate consideration of the national interest in facilities (including energy facilities) which are necessary to meet requirements that are other than local in nature; the program provides for the preservation and restoration of specific areas; the program has been developed with an opportunity for full participation by Federal, state, and local governments and other interested parties; the program has been coordinated with other plans affecting coastal areas, and an effective mechanism for continuing coordination has been developed; and the state has sufficient authorities to carry out the program.

As a result of the great natural and economic diversity of the Nation's coastal area, and the wide variation in state laws and government institutions, no two coastal programs are the same. State programs typically consist of overall policies and standards for coastal development and conservation, which in turn serve as guidance for administration of "performance standard" environmental statutes and regulations. However, these state programs include a variety of administration arrangements -- highly centralized arrangements that authorize a single state agency to make virtually all permitting decisions with respect to development in the coastal zone, programs that rely on state offices to ensure that those laws are coordinated and administered in accordance with overall state coastal management objectives, and programs that rely on local administration of locally developed coastal management programs that meet state standards.

In the U.S. Virgin Islands, for example, a new coastal management law replaced a number of environmental statutes. All coastal permitting is now done by the Department of Conservation and Coastal Affairs, and no other territorial or local authority shares jurisdiction over natural resource issues. In Michigan, the Department of Natural Resources has promulgated a series of specific state policies to promote the wise use and protection of coastal resources, covering matters such as natural hazards, ecologically sensitive natural areas, recreational and cultural areas, areas of natural economic potential, and areas of intensive or conflicting use. These policies are implemented by a variety of agencies through a series of environmental statutes, including a Shorelands Protection and Management Act, Great Lakes Submerged Lands Act, Natural Rivers Act, Soil Erosion and Sediment Control Act, Wilderness and Natural Areas Act, Farmland and Open Space Preservation Act, and Inland Lakes and Stream Act. Administration of these statutes in accordance with the general state policies is overseen by a Natural Resources Commission, a Standing Committee on Shorelands and Water, an Inter-Departmental Review Committee, the Michigan Environmental Review Board, and the Governor's Cabinet Committee on Environment and Land Use.

California, Oregon, Alaska, and other states rely on a collaborative process of state and local planning and regulation to implement coastal policies. Statutes passed in these states establish coastal policies and a process of interim state control over coastal development using existing or new permit authorities; then allow transfer of most of the authority for permits to local governments, after local coastal programs are completed and approved by the state.

Participation in the Federal coastal zone management program is voluntary. Development of approvable programs was funded with a total of $69.7 million in 80 percent (66.6 percent prior to 1976) Federal matching grants until 1979, when the development phase of the program terminated. Several other states that do not yet have approved programs (such as Florida, with 9 percent of the nation's coastal shoreline) are still proceeding with state funding. Upon approval, states are entitled to 80 percent matching grants for administration of their programs. Since the first program was approved in 1976, $85.9 million has been awarded for program administration. Of the 25 states now in the program, only half have been implementing approved programs for more than two years. State grants for implementation range from $250,000 per year for Guam to $4,250,000 per year for Alaska; appropriations for Fiscal Year 1981 administration grants total $48 million.

Two important incentives are provided in the CZMA for state participation in the program, in addition to financial support for program administration -- Coastal Energy Impact Program (CEIP) loans and grants, and Federal consistency authorities.

The CEIP was added to the CZMA in 1976, and provides for loans and grants to states which have (or are working toward) a Federally approved coastal management program, to assist them in facing the impacts of coastal

energy development. The broad purposes of the CEIP are to encourage rational, orderly and fully planned siting of important coastal energy facilities, redress recreational and environmental losses stemming from coastal energy development, provide front-end financing to communities faced with "boomtown" effects from rapid energy development, and extend limited compensation to states adjacent to outer continental shelf (OCS) oil and gas development.

A variety of CEIP assistance is available. CEIP "formula grants" are available to states involved in OCS activities based on a statutory formula that weights factors such as OCS oil and gas production off their shores, OCS oil and gas landings, and regional oil and gas activity. Since 1976, $61.7 million in formula grants has been awarded, 76 percent of which has gone to states in the Gulf of Mexico, where OCS activity is greatest. These funds have largely been used for municipal facilities and services, such as water and sewer projects, parks and recreation, street and roads, and port development.

A variety of other CEIP grant programs assist in planning efforts. Since 1976, $12.3 million has been awarded to states for planning grants, $3.5 million for environmental and recreational mitigation grants, and $2.5 million for participation in the Department of the Interior's OCS leasing process. In addition, the CEIP has awarded credit assistance to state and local entities totalling $121 million for municipal facilities and services required by coastal energy development. The Gulf States and Alaska have been the largest recipients of these loans, for purposes ranging from hospital construction to solid waste management and park and recreation projects.

The second major CZMA incentive for state participation in the coastal zone management program is the "Federal consistency" provision of the CZMA, which requires Federal actions to conform to the requirements of approved state programs. Pursuant to this provision, any applicant for a required Federal license or permit to conduct an activity affecting land and water uses in a state's coastal zone must provide the licensing or permitting agency with a certification that such activity will be conducted in a manner consistent with the approved state program. The state's coastal zone management agency must concur with that certification before the activity may be approved. State objections may be appealed to the Secretary of Commerce. States also have authority to block or condition the approval of Federal financial assistance to state or local agencies for coastal zone projects when such assistance is inconsistent with the approved state coastal management program. Finally, in 1976 the CZMA was amended to provide coastal states with an opportunity to review OCS exploration, development and production plans which affect coastal resources, for consistency with their coastal zone management programs.

Coordination, simplification and consistency of state permitting processes for managing coastal resources, as well as among state, Federal, and local management processes, is one of the objectives of the CZMA. NOAA regulations for state program approval include the requirement that "Government process policies should address such matters as the roles and responsibilities of different levels of government, or clarification and simplification of regulatory and permitting procedures." States have

conducted a variety of activities under their coastal management programs to improve coordination and simplify permit activities, including the following:

-- Twelve states have established joint processing procedures with the Corps of Engineers for dredge and fill permits. In Michigan this has reduced processing time for normal permits from 150 days to 20 days.

-- Eight states have consolidated various state permits into single permits, and 5 states have developed computerized permit tracking systems or permit clearinghouse systems. Prior to the development of a coastal zone management program in the Virgin Islands, for example, 4 permits were required from different agencies for coastal construction; now only a single coastal permit from the Department of Conservation and Cultural affairs is required.

-- Massachusetts, Michigan, Rhode Island, and Wisconsin have all experienced a noticeable decrease in time and effort required to process permit applications, as a result of the use of coastal zone management funds to staff permit offices. In Wisconsin, for example, the average length of time needed to review water quality permits has dropped from 60 to 16 days; the average time required by the Rhode Island Coastal Resources Council to review coastal permits has decreased to 30 days.

-- Washington, Alaska, Massachusetts, and Oregon have adopted an option for applicants to file a master permit application that meets the requirements of a number of state environmental permits. And Louisiana is establishing a "one-window" permit system as a key part of its coastal zone management process.

-- Coastal zone management funds have been used to support preparation of special area plans within specific segments of San Francisco Bay (such as the San Francisco waterfront and the Ports of Richmond and Benecia), and were the principal sources of funds for the Grays Harbor, Coos Bay, and Kawainui Marsh plans discussed in part V-B of this report.

Implementation of the Federal consistency requirements has also helped ensure that Federal agencies take state concerns into account in administering their programs, and has provided a useful mechanism for improving early communication among government agencies in reviewing permit requirements, thereby avoiding conflicts at later stages of project development. For example:

-- Michigan has entered into a Memorandum of Understanding with the Corps of Engineers, Coast Guard and Department of the Interior that provides for early informal identification of any modifications to a proposed activity that would be in the interest of any of the participating parties. This informal process has made the formal review and approval process move much more rapidly.

-- Maine's coastal program staff was able to obtain early state involvement in the planning of Federal activities and federally supported projects to prevent late reaction by state environmental agencies to such proposals, previously a problem.

-- In Hawaii, Federal agencies have become more closely involved in the state's coastal program, and have established a coastal management committee of the Federal Executive Board to improve coordination among the coastal-related activities of Federal and state agencies.

CEIP activities have also led to improved coordinating and permitting. In California, for example, utilizing OCS participation grant funds the state has reviewed a number of OCS exploration plans and worked with lessees to provide for additional on-site equipment to contain and clean up oil spills. State review, consultation, and plan approval through the Federal consistency process has generally taken less than 30 days. A September 1980 Department of Commerce evaluation of the CEIP indicated that among its most important achievements were "the use of CEIP funds to staff permanent state offices with professionals who were capable of helping state and local officials resolve complex energy issues in a timely fashion, and could draw upon colleagues in other states and in the Federal government for further expertise." The CEIP was also credited with assisting in "a shift of emphasis in many states in recent years from outright opposition to reasoned negotiation on the details of (OCS) tract selection and lease stipulations."

An early concern about the state programs being approved by OCZM pursuant to the CZMA was the extent to which they contained policies that were sufficiently predictable. The American Petroleum Institute and the Western Oil and Gas Association sued NOAA in 1977 to block approval of the California program on the ground that it was not sufficiently detailed to provide guidance or predictability for individual projects. The District Court rejected this contention, indicating that:

> "Congress never intended that to be approvable ... a management program must provide a 'zoning map' which would inflexibly commit the state in advance of receiving specific proposals to permitting particular activities in specific areas. Nor did Congress intend ... to require that such programs establish such detailed criteria that private users be able to rely on them as predictive devices for determining the fate of projects without interaction between the relevant state agencies and the user."

Nevertheless, concerns about the predictability and specificity of state coastal zone management programs has continued. For example, in connection with congressional hearings on reauthorization of the CZMA in 1980, the Coastal Alliance, the National Resources Defense Council, and other environmental groups cited as concerns the lack of a clear statement of national coastal policy which protects valuable coastal resources, insufficient delineation of Federal responsibility for coastal resource management, and lack of clear standards for state programs. These groups,

supported in part by the National Advisory Committee on Oceans and Atmosphere, recommended major revisions in the CZMA to establish a "third phase" of coastal zone management in which special areas of the coastal zone would be delineated for protection, development, and case-by-case decisions. The Coastal States Organization, consisting of many state coastal managers, issued a report in January 1979 which indicated in part that "changes are needed in the future (which) should take the form of more specificity in the national policies and in the state programs" and noted that "the general policies of many programs do not allow predictability in questions of siting, and therefore require sharpening."

A greater emphasis on planning activities was also cited as necessary. For example, a Conservation Foundation report on "Coastal Zone Management 1980" questioned the value of establishing strict national standards or policies for future implementation of the CZMA:

> "An impressionistic survey of state action to date suggests that CZM programs in fact have much to offer through planning and coordination (emphasis in the original). These are not activities that appeal to people eager for rapid, visible solutions to coastal resource problems and jurisdiction. These procedures may -- as the sponsors of the CZMA appear to have recognized -- be the only feasible ones."

The report identified special management planning studies for areas such as Grays Harbor as one of the ways in which state coastal zone management programs were uniquely able to respond to coastal needs. This same recommendation was made by the Coastal States Organization report, which indicated:

> "It is time to begin use of special area management as a part of the CZM program. Areas for special management should include significant or vital coastal resources and sites especially suited for the development of water-dependent facilities. Special areas would receive focused and specific management attention to achieve predetermined objectives."

Application of the Federal consistency requirements of the CZMA has also been a concern. Federal agencies continue to maintain their discretion to deny a license or permit under their own statutory authorities, even if a state certifies that the proposed project is consistent with its coastal zone management program approved by OCZM. As a result, the stricter of the Federal or state standards controls project applications. This has caused some confusion and false expectations, particularly at the local level, as to the impact of Federal approval of the state's coastal plan, and some suggestions that the CZMA be modified to provide a more absolute form of consistency -- with affirmative state decisions as well as with negative ones.

On the other hand, Federal fish and wildlife agencies such as the National Marine Fisheries Service and the Fish and Wildlife Service have been concerned that OCZM approval of state coastal zone management programs will result in added political pressure on the Federal regulatory process to approve projects in wetlands that may be consistent with state programs, but inconsistent with stricter Federal wetlands policies. For example, when OCZM approved the incorporation of the Hackensack Meadowlands District Master Plan as part of the New Jersey coastal zone management program in September 1980, the state's program document indicated that notwithstanding OCZM approval, wetland modification in the Meadowlands would require Federal permits under Section 404(b)(1) of the Clean Water Act, and the Department of the Interior made clear its position that Federal approval of such permits in the Meadowlands was unlikely, regardless of state approval. On the other hand, in some states such as California and Florida, air or water quality standards are more stringent than Federal requirements.

Finally, some concern exists about the efficacy of the provisions in the CZMA allowing the Secretary of Commerce to mediate disputes between state and Federal agencies in cases where Federal agencies elect to proceed with actions notwithstanding state consistency objections. To date only one such mediation has been held, involving a dispute between the State of California and the Department of the Interior. This dispute was related to DOI's belief that certain prelease activities associated with OCS exploration and drilling off the coast of California do not warrant a consistency determination under the CZMA because they do not "directly affect" the state's coastal zone. The mediation did not resolve the dispute, and OCZM is now in the process of developing regulations to further define the term "directly affecting." In mid-1980, the General Services Administration refused to participate in a mediation of a dispute with the San Francisco Bay Conservation and Development Commission with respect to the applicability of Federal consistency provisions to disposal of certain Federal surplus lands.

Recommendations

The CZMA was reauthorized by Congress in October 1980 for a period of 5 years. Among the amendments adopted were a listing of 12 specific policy objectives to be achieved by state coastal zone management programs, including "the coordination and simplification of procedures in order to ensure expedited governmental decisionmaking for the management of coastal resources," and encouragement of "the preparation of special area management plans which provide for increased specificity in protecting significant natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, and improved predictability in governmental decisionmaking." The amendments also encourage coastal states to provide for "the inventory and designation of areas that contain one or more coastal resources of national significance, and specific enforceable standards to protect such resources."

NOAA is now in the process of developing regulations and guidelines to indicate how Federal coastal zone management funds will be made available to carry out these objectives. Such regulations and guidelines should be developed promptly, in close cooperation with state coastal program managers; Federal, state, and local regulatory agencies; environmental and planning groups; port and development authorities; and other interested parties. In addition, NOAA should prepare technical assistance documents on special area management planning for use by state and local officials who wish to explore the use of this technique to resolve permitting and planning problems in specially sensitive areas of the coastal zone.

NOAA should convene an informal interagency working group of staff from agencies listed under Section II.D. to initiate discussions of Federal support for special area management planning. NOAA should provide necessary financial support in appropriate cases under Sections 306 and 315 of the CZMA to encourage the preparation of special area management plans by state coastal zone management agencies. In limited cases, where a programmatic environmental impact statement is necessary for Federal adoption of a special area management plan, and other participating Federal agencies are unable to assume lead agency responsibility for its preparation, NOAA should fulfill this role.

F. Clean Air Act Programs

The process of implementing Clean Air Act requirements is administered by EPA through state, local, and areawide air quality agencies. The Clean Air Act, as amended in 1970 and 1977 (CAA), has a substantial effect on development in the coastal zone and on the predictability, timing, and coordination of regulatory decisions affecting such development.

The primary CAA impacts on coastal development arise from National Primary and Secondary Ambient Air Quality Standards established for 7 pollutants, New Source Performance Standards set for 27 categories of emission sources, State Implementation Plan requirements for Nonattainment Areas and for Prevention of Significant Deterioration of Air Quality in the other areas, and restrictions on new pollution sources in nonattainment areas. In addition, new requirements of intergovernmental consultation in meeting the CAA requirements and conforming Federal agency activities with State Implementation Plans will affect the way in which air quality and other planning requirements are integrated. The following discussion focuses on requirements for Prevention of Significant Deterioration, requirements for nonattainment areas, and coordination issues. Prior to such discussion, however, some background information is set forth on the general requirements and structure of CAA programs.

The 1970 amendments to the CAA required EPA to establish National Ambient Air Quality Standards (NAAQS), including primary standards at levels sufficient to protect public health; and secondary standards at levels sufficient to protect public welfare with respect to matters such as protection against damage to vegetation and materials. By 1979, EPA had set NAAQS for 7 pollutants: ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, total suspended particulates, hydrocarbons, and lead. Each of the standards is specified in terms of an allowable concentration over a particular time period.

The 1970 amendments to the CAA required that within 9 months after the establishment of any NAAQS by EPA, states must develop a plan to implement that standard and submit the plan to EPA for approval. The State Implementation Plan (SIP) must provide for attainment of the primary NAAQS by December 31, 1982. Under certain circumstances EPA may extend the attainment deadline, but not later than December 31, 1987. A national secondary standard must be also attained within a "reasonable time" after SIP approval.

Although the SIPs must meet certain general requirements, states have considerable flexibility regarding the manner in which they choose to meet the NAAQS. This flexibility and the differences in the nature of the air pollution problem from area to area may result in wide variations among the contents of state SIPs. For example, some states may emphasize van pooling or fast lanes for buses in order to reduce auto emissions, and

others may emphasize controls over the location and growth of parking facilities for the same purpose. Ventura County, California, has been recognized for an innovative emmissions-density zoning approach to managing growth of automobile use. Other areas have often adopted an offset policy which relies on a first-come, first-serve approach and a case-by-by review for control of emissions.

By 1977, it had become apparent that many states were unable to meet basic air quality standards. The 1977 amendments to the CAA therefore extended attainment deadlines, for up to 10 years. In addition, the 1977 amendments added new state responsibilities for the "prevention of significant deterioration" in areas with good air quality and for implementation of "nonattainment" requirements in areas where the air is still unacceptably polluted. SIPs must be modified to meet these new responsibilities, which are discussed in more detail.

EPA provides grants totalling approximately $112 million per year to state, regional and local governments to help them implement CAA requirements. EPA responsibilities are carried out through an extensive network of staff in 10 regional offices, a national air quality planning and standards office in Durham, North Carolina, and a headquarters policy and planning staff in Washington, D.C. responsible for the overall program. The equivalent of about 816 full-time staff work on air quality implementation programs at the EPA Regional Offices. Each of the Regional staffs is organized into 3 program elements: air quality management staff who work with states on implementation of NAAQS (about 312 employee years), ambient air quality monitoring staff (about 84 employee years), and enforcement staff (about 420 employee years). However, the bulk of the government staff and resources for implementing CAA requirements is at the state and local levels. EPA estimates that about 8,000 people are involved in implementing air quality standards in 54 state and territorial programs and about 105-110 local programs.

Nonattainment Requirements

The 1977 CAA amendments require that for all nonattainment areas identified by the states and included in a list published by EPA, where air quality is poorer than the primary NAAQS standards set to protect public health, states must revise their SIPs to provide for attainment of all primary NAAQS by December 31, 1982. Most urban areas in excess of 200,000 people and many nonurban areas of the country are classified as nonattainment areas for ozone or other air pollutants. If a state demonstrates that attainment of the primary NAAQS for ozone and carbon monoxide is not possible by 1982, despite the implementation of all reasonably available control measures, EPA may extend the attainment deadline through December 31, 1987. However, the state must provide for annual reductions in emissions sufficient to constitute "reasonable further progress" towards attainment prior to the attainment deadline. SIP revisions that do not provide for attainment of the ozone and carbon monoxide standards until after 1982 must also meet additional requirements that include vehicle inspection and maintenance programs. No extension beyond the 1982 attainment date is provided for other pollutants.

Failure to submit or carry out a SIP which provides for attainment within CAA deadlines can result in severe sanctions including a cut off of Federal highway and sewage treatment construction funds and a prohibition on construction and operation of all major new pollution sources in the nonattainment area. For example, California's failure to enact legislation to implement an annual vehicle inspection program in the fall of 1980 prompted EPA to initiate procedures to cut off $850 million in Federal aid to the State.

Some of the major elements required in the SIP revisions for nonattainment areas that could influence new coastal development or the coastal planning process are as follows:

- Annual incremental reductions in aggregate emissions sufficient to assure attainment by 1982 (or 1987, as the case may be).
- An emmissions inventory for each nonattainment area, taking into account planned future emissions from new sources.
- A permit system requiring all major new polluting facilities to meet the "lowest achievable emissions rate."
- For regions not attaining ozone or carbon monoxide standards until 1987, permit applications for major new polluting facilities must contain alternative site and production process analyses demonstrating that benefits of the facilities outweigh environmental costs.
- For regions not attaining ozone or carbon monoxide standards until 1987, additional control measures (beyond those currently "reasonably available") must be identified and included in the SIP not later than 1982.

Prevention of Significant Deterioration Requirements

The 1977 CAA amendments embody a policy known as "prevention of significant deterioration of air quality" (PSD) by requiring states that now have satisfactory air quality to take steps to maintain that quality. EPA first promulgated a PSD policy in 1975, in response to a court order in a suit brought by the Sierra Club. The 1977 requirements differ from this earlier policy in a number of respects, most notably by establishing smaller allowable pollution increases and granting states exclusive authority over the air quality reclassification of clean air areas.

The 1977 CAA amendments required that each clean air area be placed into one of three classes. For each class an allowable annual emissions growth increment for sulfur dioxide and particulates is provided, measured against a baseline which is essentially the ambient concentration at the time of the first PSD permit application affecting the area. Virtually no further degradation of air quality is allowed in Class I areas, a requirement which in effect also makes some areas near Class I areas unsuitable for location of new pollution sources. Moderate air quality degradation is permitted in Class II areas, which may limit industrial growth in such areas as a result of the annual permitted emissions growth increment. Fairly heavy air quality

degradation is permitted in Class III areas. In no event is air quality allowed to deteriorate beyond the applicable NAAQS.

The CAA designated certain pristline Federal lands as Class I, including national parks over 6,000 acres; existing national wilderness areas; international parks; and national memorial parks over 5,000 acres. For such areas, states must adopt methods to prevent future visibility impairment as well as to prevent deterioration of pollution levels.

The mechanism for preventing significant air quality deterioration is a permitting system for all major new sources of air pollution and all modifications to existing air pollution sources that would result in significant new emission increases. To obtain a PSD permit, the applicant must apply the best available control technology to the pollution source; conduct an ambient air quality analysis to demonstrate that the new pollution emissions will not violate the applicable NAAQS or exceed the available PSD increment for the area; analyze impacts to soils, vegetation, and visibility by direct emissions and emissions from secondary sources associated with the proposed project; submit the proposal to adequate public scrutiny; and commence construction in a timely manner. The permitting requirement applies to 28 categories of industries that have the potential to emit 100 tons or more per year of pollutants regulated by the CAA, and to any other source with the potential to emit 250 tons per year.

States are required to develop SIP revisions for PSD pursuant to EPA regulations issued in August 1980. If EPA approves a state's proposed PSD plan, the state can then implement its own PSD program through the issuance of PSD permits. In the absence of an approved plan, EPA will implement the regulations itself, by preparing SIP revisions for the state and issuing PSD permits through the EPA Regional Administrator (or delegating such authority to the state).

Congress designated all areas that were not considered Class I under the CAA amendments as Class II unless reclassified by the states following prescribed procedures. Before an area may be reclassified as Class I or Class III, the state must hold public hearings and make available an analysis of the environmental, economic, and social effects of the reclassification. Congress designated certain Federal lands as mandatory Class I Areas in the 1977 CAA amendments; states proposing to reclassify other Federal lands must first consult with the Federal agency managing those lands. No area may be reclassified as Class III unless the local governments representing a majority of the residents of the area and the relevant committees of the state legislature agree to the reclassification. Furthermore, no area may be reclassified as Class III if such reclassification would cause air quality violations in neighboring areas. EPA may disapprove the reclassification of an area only if it finds, after notice and opportunity for a public hearing, that such reclassification does not meet the procedural requirements of the CAA.

The reclassification process has some potential for use as a growth management technique: by reclassifying areas to Class I in order to control growth in pristine areas and reclassifying areas to Class III to allow additional development in already developed areas. Some states are starting to explore this potential in connection with coastal-related issues. For example, the State of New Jersey passed its Pinelands Protection Act in 1979

to establish a framework for comprehensive planning and regulation of development in the approximately one million acres of fragile, highly valued pinelands that reach across central and southern New Jersey. The State is receiving planning funds for a National Reserve in the Pinelands from the Department of the Interior, and is considering reclassification of the Pine Barrens area from Class II to Class I to preserve air quality and control growth that might threaten this newly established preserve. In Hampton Roads, Virginia, local governments are investigating the need to reclassify the community within the influence of a proposed major new oil refinery from Class II to Class III to accommodate needed economic development in addition to the major proposed refinery in the area.

Coordination of Planning and Regulation

In many cases, achieving NAAQS for nonattainment areas and complying with PSD requirements require close integration of state air quality management policies. Cooperation among various Federal, state and local agencies is thus essential both in the planning and implementation of SIPs, and is required by the 1977 amendments.

Section 121 of the CAA requires a "satisfactory process of consultation" in connection with state preparation of SIP revisions required by the 1977 amendments, particularly those associated with nonattainment requirements and PSD requirements. Section 174 of the CAA anticipates that local governments or regional planning organizations will play an integral part in SIP revisions and implementation with respect to nonattainment requirements. The CAA requires that coordination procedures include a process for determining conformity between the SIP and other plans and programs substantially affecting or affected by the SIP.

EPA promulgated regulations to implement these provisions in June 1979. The regulations require establishment of a continuing intergovernmental consultation process which provides an opportunity for joint resolution by affected governmental organizations and individuals of key issues in the development of the revised SIPs, such as the selection of mobile and stationary source control strategies. The consultation process must ensure consultation during the preparation of procedures, preconstruction review of major stationary sources of air pollution (such as allocation programs for allowable emission increments for PSD areas and growth increments for nonattainment areas) and procedures related to transportation-related planning and control measures. The process must ensure the involvement of specified organizations and individuals, including agencies responsible for coastal zone management and water quality management programs.

EPA regulations also recognize that SIPs and the SIP process will affect other state plans. The regulations require that the organization responsible for SIP elements coordinate with other planning and management programs substantially affecting or affected by SIP elements to ensure "incorporation of appropriate air quality criteria as a factor in other planning and management programs" and inclusion of "a process for determining conformity between state implementation plans and other plans and programs, such as those pertaining to transportation, land use, solid waste, water quality, or community development, substantially affecting or affected by the implementation plan."

Section 307(f) of the Federal Coastal Zone Management Act requires the incorporation of CAA requirements, and any requirements established by Federal, state or local agencies thereunder, into federally approved state coastal zone management programs. Typically, state coastal management programs explicitly incorporate CAA requirements as state coastal policies. Pursuant to Section 176 (c) of the CAA, each Federal agency also has an affirmative responsibility to assure the conformity of its actions with each approved SIP. EPA regulations intiated in April 1980 to implement this provision identify applicable Federal actions as including "all activities engaged in, supported or financially assisted, licensed, permitted or approved by, any ... agency ... which have potential affects on air quality, including new or modified development projects, federally licensed and permitted activities, federally prepared or approved plans, leases of Federal lands, Federal grant assistance for state or local activities or other Federal grants and contracts."

EPA regulations to implement these coordination and conformance requirements do not clearly indicate whether or to what extent air quality decisions of state and local agencies (or EPA administrators where permit authority has not been delegated to such agencies) can be made in states using a plan for a specific area. For example, they do not indicate whether collaborative plans which incorporate air quality standards explicitly and provide the required analyses for partially meeting nonattainment or PSD permit requirements, can be approved by air quality agencies for partial compliance with these requirements for subsequent projects consistent with the plans. In the absence of such explicit guidance on how plans can be used in the regulatory process for air quality, development proposals that are fully consistent with all other aspects of collaboratively developed plans for special coastal areas may receive expedited review by state, local and Federal permitting agencies, but may be substantially delayed or denied on the basis of air quality considerations alone.

For example, in 1976 the Port of Los Angeles sought Federal funds for a project to deepen its channels and turning basins, and received state authorization to proceed with the project when it became a part of its collaboratively developed port Master Plan required by the California Coastal Act. However, after state approval of the Plan and its final environmental impact statement in February 1980, the California Air Resources Board raised objections to the emissions from diesel oil-burning dredge machines, because of the unique air quality problems in the Los Angeles basin which require strict control of emissions from automobiles and industry. The Board suggested that catalytic converters be installed, or that electric dredges be used to perform the work. The applicant for the dredging permit for the project (which was consistent with the Plan) estimated that the conversion would cost $1.7 million and delay the project by 7 months, but finally agreed to the purchase of electric dredge machines rather than suffer further losses due to delays.

Recommendations

Air quality requirements must be integrated with state, local and Federal planning and permitting with respect to the Nation's coastal zone. SIPs for nonattainment and PSD areas may include a variety of restrictions on growth and siting of pollution sources, and coastal plans and development will affect

and be affected by CAA goals. Unless common projections of population growth, assessments of regional growth patterns, and estimates of the impacts of growth are used by state, local and Federal planners, the lack of common underlying assumptions will complicate permitting and planning activities in the coastal zone.

The CAA amendments of 1977 and EPA implementing regulations have substantially reduced the possibility that planning for air quality will not be adequately coordinated with coastal management planning efforts, as has the incorporation of CAA requirements into state coastal zone management plans. In general, EPA regulations under the CAA continue to rely primarily on case-by-case review of project applications based on performance standards contained in SIPs. EPA should take the following actions to further simplify and better coordinate permitting and planning activities in specially sensitive areas of the coastal zone:

1. In areas where collaborative intergovernmental management planning efforts are undertaken, an opportunity will be presented to increase the predictability of the air quality permitting process while avoiding conflicts with other regulatory programs. For example, implementation of new state requirements that alternative sites, sizes, production processes and control techniques be analyzed prior to the issuance of permits for major pollution sources in nonattainment areas might be conducted in stages within a given geographic area. This analysis could be performed in combination with consideration of alternatives involved in the use of wetland or shoreland areas for the location of such new sources required by Section 404 of the Clean Water Act. EPA regulations or administrative guidelines for implementing SIP requirements should be revised to explicitly allow the use of such collaborative planning processes for special coastal areas for partially meeting analysis and regulatory requirements for air quality permits. This planning process could take place in advance of specific applications, where air quality standards and SIP strategies are incorporated in such plans and approved by state and local air quality agencies (or by EPA Regional Administrators if permit authority has not been delegated). Such regulatory changes or administrative guidance should describe the extent to which, and under what conditions, air quality analysis and permit requirements can be met by such special area management plans in the context of a tiered concept of regulatory decisions.

2. Although air quality is not usually the focus of collaborative planning efforts for managing special coastal areas, the agencies involved in such planning must consider state and Federal air quality standards, and in some instances air quality planning may be a key factor in the process. In the latter instances, the process would be facilitated if planning activities were eligible for funding pursuant to the CAA for their contributions to the SIP. EPA regulations implementing the funding programs for state, areawide and local air quality agencies under Sections 105 and 175 of the CAA do not clearly identify collaborative planning for special coastal areas as an eligible cost when such plans contribute to the development and implementation of air quality SIPs, and should be amended to do so.

G. State and Areawide Water Quality Management Planning Program

The State and Areawide Water Quality Management Planning Program is administered by EPA pursuant to the Clean Water Act (CWA). As of May 1979, it integrated the requirements of Section 106 (grants for prevention, reduction and elimination of pollution, and for enforcement), Section 205(g) (grants for administration of wastewater construction programs), Section 208 (nonconstruction grants for developing and operating areawide waste treatment and nonpoint source pollution management processes), and Section 303(e) (continuing planning process) of the Act into a single state and areawide planning process.

Pursuant to the Water Quality Management (WQM) Program, states and areawide agencies in 217 areas of the country conduct planning activities to achieve national water quality goals, which include: protection of fish, shellfish and wildlife; achievement of "fishable and swimmable waters" by 1983 wherever attainable; restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters; prohibition of the discharge of toxic substances in waters in toxic amounts; elimination of all discharges of pollutants by 1985; achievement of water quality standards; and reduction of water pollutants fron nonpoint sources (i.e., sources that do not originate from a particular point of discharge such as a pipe) to the maximum extent feasible. Planning areas are designated by governors based on the existence of water quality control problems or high quality waters subject to non-degradation policies. States conduct WQM planning activities outside these designated areas and coordinate the activities of the areawide agencies.

Under the WQM Program, state and areawide plans must, in general, identify current and future sources of water pollution, the severity of such pollution, and current and planned pollution control programs. EPA regulations require the following matters to be addressed in WQM plans:

-- total maximum daily loads of pollutants permitted in waters that do not yet meet applicable water quality standards;

-- systems for regulating discharges of dredged or fill materials;

-- nonpoint pollution control plans and programs, including regulations or other measures to limit or prevent nonpoint sources of pollution;

-- municipal wastewater treatment facility needs, and approaches to improve operation and maintenance of industrial waste water facilities and to improve the administration of the construction program for such facilities;

-- development and application of management practices for urban storm-water control;

-- land and surface waste disposal practices to protect surface and ground water quality;

-- water quality standards for areas with quality control problems or high quality waters subject to degradation;

-- water conservation needs and practices.

The development of WQM plan provisions with respect to each of these elements is based on a complex of activities and plans guided by various provisions of the CWA and EPA regulations. For example, pursuant to EPA's Section 208 program, efforts are being made to deal with the degradation of water quality in the Cannonsville Reservoir -- one of the major water supplies for New York City -- caused by concentrations of dairy farms and large areas of surrounding cropland and forest with erosion problems. EPA and the Department of Agriculture are working with most of the farmers in the area to improve water quality management practices. Similarly, pursuant to Section 208, EPA, the State of New York and the Long Island Regional Planning Board are developing a management program to protect groundwater on Long Island. Pursuant to the plan, local governments have banned septic tank cleaners, are preparing new regulations governing underground chemical storage, and revising regulations to control pollution from animal wastes. The purpose of the WQM program is, to a great extent, the overall integration of these various plans and elements into a cohesive and internally consisent approach to water quality issues for states and areas, that can, in turn, direct future WQM efforts.

When a WQM plan is approved by EPA, it directs a wide variety of WQM activities at all levels of government. For example, pursuant to Section 402 of the CWA, National Pollutant Discharge Elimination System (NPDES) permits for point sources of discharges are issued by EPA (or by states or areas to which such authority has been delegated by EPA). These permits typically include effluent limits for various pollutants (in concentrations or total loads), schedules of compliance for discharges, requirements for self-monitoring and reporting, and requirements for control of residuals for publicly-owned sewage treatment facilities. These conditions are in turn based on EPA effluent guidelines and applicable waste load allocations, and on EPA "best practicable technology" guidelines for certain waste facilities and industries. NPDES permits issued by states must be consistent with WQM plans.

Another example of the impact of WQM plans relates to state and areawide efforts to deal with septic system problems. Nearly 17 million septic systems exist throughout the Nation, producing about one trillion gallons of liquid waste annually, with high growth rates in rural areas and on the urban fringe. When such systems are improperly engineered or maintained, they can contaminate surface and ground waters with nitrates and pathogens. Replacing septic systems with new interceptor and collector sewers can result in unplanned urban sprawl, loss of prime farm land, and severe economic impacts on homeowners. Secton 201(h) of the CWA authorizes EPA to make grants for construction of alternative or conventional treatment works for individual residences or clusters of residences. The award of these grants by EPA is guided by priorities established in the WQM plans.

Each WQM plan is to be updated annually, by evaluating performance under the prior version of the plan, updating information about water quality

problems, reassessing the severity and relative importance of those problems, revising the state's or area's problem-solving strategies, and developing a work program to implement plan solutions and to carry out future WQM activities in the state or area. Failure to develop or implement WQM plans can lead to withdrawal of CWA program permitting delegations to the state and to loss of grant funds available under Section 106, 205(g), 208, and 314 (the Clean Lakes Program) of the CWA.

Section 208 state and areawide plans were meant to address both point, (in the first phase of the WQM planning efforts) and nonpoint source controls -- for sewage collection and treatment needs, plant siting and construction priorities, control of runoff (from urban areas, agriculture, silviculture, mining, and construction) and prevention of groundwater pollution in connection with the disposal of wastes. However, as EPA had direct regulatory authority only over point sources of pollution, and as insufficient funds were available to deal with the full range of water quality problems, the initial Section 208 efforts tended to focus primarily on point source issues which were more easily identifiable and for which solutions could be more readily developed.

Even with this more restricted focus, the Section 208 planning program was slow to develop. Although Congress appropriated $368 million between Fiscal Years 1973 and 1977 for Section 208 planning, substantial portions of those funds were not obligated. By November 1978, the original congressional deadline for completion of Section 208 plans, no such plans had been completed and only 5 had received partial EPA approval.

In the December 1977 amendments to the CWA, Congress extended authorization for Section 208 planning through fiscal year 1980, and Congress appropriated $138.5 million for such efforts between Fiscal Years 1978 and 1980. In this second phase of the WQM effort, EPA placed greater emphasis on actively filling gaps in required plan elements, i.e., nonpoint sources providing technical and financial assistance for water quality management, and preparing for plan implementation. An EPA status report as of November 7, 1980 lists 212-of-220 Section 208 plans as certified or partially certified by the states, and 206 of these have been approved by EPA. Congress has appropriated $34 million to continue these efforts in Fiscal Year 1981.

Prior to the integration of the WQM programs in 1979, Congress appropriated a total of $275.9 million in Section 106 funds for use, together with matching state funds, to administer state water quality programs -- primarily for permits, planning, monitoring, and construction grant management in connection with wastewater treatment facility construction programs and NPDES programs. Funding for construction grant management is now eligible under Section 205(g), but some states continue to use Section 106 grants for this purpose. The major uses of Section 106 grants have been for administration and monitoring of point source discharge programs. Funding for Fiscal Years 1979 and 1980 totalled $101.1 million, for Section 106, and Congress has appropriated $48.5 million for Fiscal Year 1981 activities.

Section 205(g) grants, for management assistance in connection with wastewater treatment facility construction, were first authorized in the 1977

amendments to the CWA. EPA is authorized to make available to each state two percent of its allotment for construction grants under Section 201 of the CWA (or $400,000, whichever is greater) to be used for administration of the construction grants. Congress also allowed this amount to be increased to cover the costs of administering the NPDES, state activities pursuant to Section 404 of the Clean Water Act in connection with dredge and fill permits, and Section 208 programs. Fifty-two million dollars was available for Fiscal Years 1979 and 1980 for Section 205(g) grants, and $68 million will be available for Fiscal Year 1981.

No separate grant program has been established for development of the required "continuing planning process" pursuant to Section 303(e) of the CWA. To date, Section 106 funds have been used for these purposes.

Several thousand EPA staff members administer various programs implementing the CWA; 900 of them are in EPA headquarters in Washington, D. C., and the balance are in regional offices. They are primarily involved in the construction grants program for wastewater treatment facilities under Section 201 of the CWA. From enactment of this program in 1972 through the end of Fiscal Year 1980, $25.5 billion has been awarded by EPA for such wastewater treatment facilities. The Water Quality Management Program is administered primarily from EPA's regional offices, and involves approximately 400 staff.

WQM plans and implementing actions can influence coastal development and planning in a number of ways. For Example:

° A population growth will be projected in designated service areas.

° Water quality standards, based on EPA guidelines, involve use designations, numerical criteria to support the uses, and a statewide nondegradation statement.

° Waste load allocations for water quality limited stream segments set thresholds of water quality in particular areas which can control development and discharges.

° The size, location, priorities and timing for waste treatment facilities and service areas can limit the rate and location of growth of development.

° Regulatory and other programs for the prevention of nonpoint sources of pollution may include sediment control ordinances, performance zoning and stormwater system design which may influence development.

° Conditions to be included in NPDES permits pursuant to water quality based effluent limitations will affect the type of industries that can locate in certain areas.

° Open space and outdoor recreational public benefits expected to be achieved under the plan, will be analyzed and measures identified which will be taken to enhance open space and recreational opportunities.

° Controls over the discharge of dredged or fill materials will be included, which may or may not be consistent with programs administered by the Army Corps of Engineers.

The WQM process necessarily involves cooperative planning with EPA and other Federal agencies, state agencies, interstate and regional bodies, local governments and the public. EPA regulations contain a number of requirements to ensure that WQM planning is coordinated with other planning and regulatory programs, and that conflicts among such programs are resolved. For example, states must assure that procedures exist at state and substate levels for resolving conflicts among the state, areawide agencies, local governments, potential and designated management agencies and other agencies affected by the process. WQM programs must be coordinated with State Implementation Plans under the Clean Air Act, and consistent with Executive Orders on Floodplain Management and Wetlands Protection. They must also be coordinated with other programs related to WQM planning and in compliance with applicable requirements of other Federal programs.

Section 307(f) of the Coastal Zone Management Act provides that the requirements of the CWA "shall be incorporated in any (coastal management) program developed pursuant to the (Act) and shall be the water pollution control. . .requirements applicable to such programs." Most states with approved coastal zone management programs have met this requirement by incorporating by reference the CWA as a minimum requirement for water quality, and by describing how state water quality programs are designed to meet CWA requirements as part of the "network" of state environmental laws forming the state's coastal management program. As indicated in the discussion of the Coastal Zone Management Program, Federal agencies have, in some cases, expressed concerns that unless the detailed requirements of some parts of the CWA and EPA regulations are more fully integrated into state and local coastal management plans and permitting performance standards, interagency conflicts over the issuance of permits for development in the coastal zone are inevitable.

Given the limited resources available to meet ambitious national water quality management objectives, EPA and most states have sought ways to improve the process of case-by-case review of permit applications for more efficient use of available WQM funds. EPA's Consolidated Permitting Program, described in the following action, is one example of these efforts. However, most of the WQM planning programs tend to establish performance standards for pollution control for a given area (e.g., waste load allocations) or a particular type of facility (e.g., NPDES standards). Few WQM requirements have been addressed fully through comprehensive interagency planning for specific geographic areas.

Recommendations

Existing requirements for coordination and consistency among Federal programs found in the Clean Water Act, EPA regulations implementing the WQM Program, and the Coastal Zone Management Act, help ensure that national water quality standards will be integrated into other federally supported state and local resource management plans. However, implementation of these various

federally supported state and local plans has not fully eliminated the possibility that performance standards and land and water use policies designed to meet the objectives of one program will inhibit full compliance with other national objectives. For example, many state coastal zone management programs provide for industrial expansion in already developed areas in order to conserve valuable natural coastal resources, a development pattern which may be discouraged by the need to disperse new or expanded sources of water or air pollution to prevent exceeding limits for waste load allocations for stream segments or air quality standards in certain PSD classes. Such inconsistencies in the implementation of various program requirements cannot be fully resolved through performance standards or case-by-case review of permit applications.

Opportunities exist for resolving inconsistencies in the various federally supported state and local planning requirements as they apply in special coastal areas. EPA should take the following actions to further simplify and better coordinate permitting and planning activities in specially sensitive areas of the coastal zone:

1. State and local water quality agencies and EPA can provide more explicit guidance for water quality permitting in special areas in advance of case-by-case permit applications by adopting detailed technical guidance for integrating water quality planning requirements into other plans for such areas, and for participation of WQM agencies in joint planning processes. This approach should allow water quality agencies to review the broad water quality concerns for the area, determine compliance of land and water use policies and conditions with water quality requirements, and endorse the resulting guiding plans for all subsequent development that is covered by the plans. The EPA WQM program allows for the use of collaborative planning processes for special coastal areas for establishing requirements and conditions for water quality permits, "best management practices" for controlling nonpoint sources of pollution, and priorities for wastewater treatment facilities in the area as components of the state WQM plan, where such plan is certified by a state and approved by EPA. Administrative guidelines should clarify how these requirements can be met through special area management planning.

H. EPA Consolidated Permitting Program

In May, 1980, the Environmental Protection Agency adopted consolidated permit regulations for a series of programs it administers; the Hazardous Waste Management Program under the Resource Conservation and Recovery Act (RCRA); the Underground Injection Control Program (UIC) under the Safe Drinking Water Act; the National Pollutant Discharge Elimination System (NPDES) and Dredge and Fill Programs under the Clean Water Act; and the Prevention of Significant Deterioration Program (PSD) under the Clean Air Act.

The primary purposes of the Consolidated Permitting Program are to reduce regulatory burdens, improve environmental management, and make more effective use of limited agency resources. The Program was prompted by a number of general Executive Branch efforts to improve the Federal regulatory system (including the President's 1977 directive to CEQ to review and recommend specific measures to integrate environmental regulations, and his 1978 Executive Order 12044 directing Federal agencies to simplify regulations). In addition, its conclusions and recommendations benefitted from the work of an EPA task force, established in early 1978 to review industry criticisms regarding EPA permitting processes for new pollution sources.

Both the 1978 New Source Review Task Force and the task force established by EPA to develop the Consolidated Permitting Program concluded that consolidation of EPA permit activities could result in significant benefits for the environment, the regulated public and EPA. For example, a study prepared for the New Source Review Task Force -- which was composed of representatives from EPA, industry, state and local agencies, an environmental group and other Federal agencies -- indicated that permit applications often require more data than management has available when making commitments to projects. Complete final design and engineering specifications are not available until construction is underway. Yet, permits cannot in some cases be obtained until construction plans are detailed, although the time required to obtain all permits can be several years and there is no assurance that all permits needed for a series of investment decisions will be ultimately granted, thus posing major problems for large construction projects. The Task Force suggested that a potential area for policy changes was the use of conditional or skeletal permits for the review of conceptual designs for project proposals, in advance of fully completed applications and before detailed design specifications were completed, to reduce uncertainty in some circumstances.

Similarly, the Permit Consolidation Task Force found that consolidation of regulations could result in more comprehensive management and control of wastes. In the past each of the EPA permit programs acted independently, without regard for how its imposition of controls affected pollution discharges of concern to other EPA programs. According to a descriptive brochure on the Consolidated Permitting Program: "... NPDES limits on hazardous waste discharge may have encouraged certain facilities to dispose of these wastes into injection wells. Such practices merely shifted the problem from surface water to underground aquifers resulting in the contamination of drinking water supplies."

Although the Consolidated Permitting regulations are procedural rather than substantive, they are quite lengthy and complex, covering 293 pages of

the Federal Register (including new permit application forms). They provide a framework for processing all EPA program permits for a facility or activity together. Applicants need only provide standard information once, on a single consolidated form. Supplemental information needed for specific regulatory programs is collected on separate attachments developed for each program. A number of innovative procedures are included, designed to streamline the regulatory process, such as informal rather than adversarial hearing processes, joint issuance of draft permits, joint comment periods, and joint hearings where the material to be presented will be applicable to several regulatory programs.

In addition, EPA will prepare a "project decision schedule" for permit applications for major facilities, setting target dates for permit processing. Expedited processing of applications will be possible when no public comment is received on permit applications. Upon receipt of an application, EPA (or an approved state agency) will give public notice of its tentative decision to deny or award the permit. It will prepare a draft permit and a fact sheet or other statement of the basis for each draft permit, and will hold public hearings whenever substantial public interest is shown or it otherwise feels such hearings would be desirable. Upon the close of the comment period, the permit will be issued effective in 30 days (or immediately if no comments have been received). The decision can be appealed to the Administrator of RCRA, UIC or PSD permits; to a nonadversary panel hearing for some NPDES and closely related permits; or to an evidentiary hearing for other NPDES and closely relatd RCRA and UIC permits.

The new regulations are designed to encourage coordination of permit processing activities between EPA and state agencies, particularly when a facility needs both Federal and state permits. The regulations allow applications to be jointly processed, joint comment periods and hearings to be held, and final permits to be cooperatively issued. Although EPA also encourages states that meet Federal standards to operate the programs covered by the consolidated permitting regulations, EPA does not require such states to consolidate their own permitting procedures as a condition of delegating responsibility to them. Nor do the regulations address the concept of conditional, skeletal or otherwise staged permits as discussed by the New Source Review Task Force.

The New Source Review Task Force also recommended a number of administrative actions to simplify the permitting process that were adopted by EPA at the same time it issued the Consolidated Permitting regulations:

- appointment of a new source permit facilitator/expediter in each EPA Region;

- institution of a permit tracking system with administrative milestones (including a 30-day administrative deadline on permit applicability and completeness determinations),

- harmonizing review schedules for projects involving multiple permits, where consistent with regulations and statutes and where it improves permit process implementation;

- early contact with and identification of potential new source applicants for clarification of requirements and to encourage early applications;

- formal agreements between EPA and state or local agencies with parallel review responsibilities to avoid unnecessary duplication and confusion; and

- early identification and resolution of potential conflicts among environmental requirements.

The Consolidated Permitting Program is too new for evaluation at this time. No projects have yet been processed under the Program. EPA Regions have established single points of contact for new source permit reviews, and some EPA Regions have also established consolidated permit units and single points of contact for both new sources and consolidated permit reviews. Limited resources and other agency priorities will affect the speed with which EPA can realize its goal of issuing a single consolidated permit for a facility that now requires multiple EPA permits. During the next year, a major focus of EPA's efforts will be toward consolidating Hazardous Waste and NPDES permits.

Recommendations

The EPA Consolidated Permitting Program is a significant step in simplifying the previous system of uncoordinated and separately administered EPA permit programs for the same facilities. However, the permitting programs consolidated under the new regulations continue to operate primarily through case-by-case review of permit applications for new or existing sources of pollutants. The Program does not fully provide for improving coordination or simplification of the procedures for multiple permits within the same geographic area, where the impacts of discharges of air and water pollutants and hazardous or dredged materials may have cumulative impacts on sensitive coastal resources or may inhibit needed economic development. Regulatory decisions of EPA and state agencies participating in the Program with respect to such areas are not predictable by proponents of projects and other interested members of the public in advance of applications for specific projects.

EPA should further simplify and better coordinate permitting and planning activities in specially sensitive areas of the coastal zone by revising its Consolidated Permitting regulations or by providing interpretive guidance to allow EPA and state administrators to participate in and adopt the results of collaborative management planning efforts for use in the permit review process, and to expand the use of conditional or staged permitting processes for long-term projects and for other projects with familiar impacts and technologies developed in connection with collaboratively developed management plans.

APPENDICES

APPENDIX A

DISTRIBUTION OF SIKES ACT FUNDS IN FISCAL YEAR 1979, U.S. NAVY DEPARTMENT

	Project (Amount)
NWS, Colts Neck, Earle, N.J. ($9,000)	Establish 18 permanent wildlife food plots ($7,000) Deepen West Pond ($2,000)
NWSC, Crane, Ind. ($15,000)	Three separate pond developments ($7,500) Establish 80 acres of permanent wildlife food plots ($7,500)
NAEC, Lakehurst, New Jersey ($10,000)	Lime and fertilize 75 acres of existing wildlife food plots ($2,500) Establish 10 acres of new wildlife food plots ($5,000) Shrub plantings in wildlife food plots ($2,500)
NAS, Brunswick, Maine ($5,000)	Dam and pond repair
NOS, Indian Head, Maryland ($5,500)	Waterfowl habitat improvement ($4,000) Upland habitat improvement ($1,500)
NSWC, White Oak, Maryland ($3,000)	Upland habitat improvement
NSWC, Dahlgren, Virginia ($5,000)	Pond/fishery improvement
NAS, Patuxent River, Maryland ($7,000)	Oyster Bed Seeding ($2,000) Wild Turkey Reintroduction ($1,000) Wildlife Clearings ($4,000)
NESEA, St. Inigoes, Maryland ($3,000)	Upland habitat improvement ($2,000) Nongame landscaping ($1,000)

APPENDIX A (continued)

NRL, Randall Cliffs, Maryland ($3,000)	Nongame landscaping ($2,500)
	Bird nesting structures ($500)
NRTF, Annapolis, Maryland ($2,000)	Waterfowl habitat improvement
CHESDIV, Washington, D.C. ($500)	Administrative costs
NWS, Yorktown, Virginia ($12,000)	Establish 14 wildlife plots ($9,604)
	Purchase disk and seeder ($2,100)
	Purchase fertilizer ($296)
AFETA, Camp Peary, Virginia ($10,000)	Liming contract ($2,049)
	Clear 6.5 acres ($3,750)
	Purchase fertilizer ($2,168)
	Purchase drag harrow ($325)
	Purchase bird food ($445)
	Purchase 25 gallons Diquat ($1,103)
NSGA, Northwest, Virginia ($5,715)	Wildlife food row crops ($4,590)
	Wildlife food plots ($1,125)
FCTC, Dam Neck, Virginia ($2,500)	Duck blind maintenance ($300)
	New duck blinds ($500)
	Eight acres wildlife food plot ($1,700)
NAS, Meridian, Mississippi ($9,714)	Convert fishing lake ($4,714)
	Construct lake ($5,000)
NAS, Cecil Field, Florida ($4,825)	Aquatic weed control ($2,200)
	Pond renovation ($2,625)

APPENDIX A (continued)

NAS, Chase Field, Texas ($4,600)	Floating dock
NCBC, Gulfport, Mississippi ($2,550)	Convert catfish ponds ($1,200) Pond aerators ($1,350)
NWS, Charleston, S.C. ($3,500)	Pond sediment pipe
NAS, New Orleans, Louisiana ($4,996)	Construct lake
NAS, Kingsville, Texas ($5,050)	Construct 2 ponds
NSGA, Homestead, Florida ($5,000)	Pond improvement
NAS Miramar ($3,000)	Trout pond maintenance (spillway structure, tule control and erosion control)
NAS North Island ($3,500)	Least Tern nesting colony; site preparation (North Island); habitat and channel improvement work (Imperial Beach); endangered wildlife and plant species work (San Clemente Island)
WPNSTA, Seal Beach ($1,000)	Least Tern nesting and dusting site; preparation and food plots
WPNSTA, Fallbrook Annex ($4,000)	Brush control and habitat improvement
NAVWPNCEN, China Lake ($4,000)	Wildlife water development guzzler, etc.
NAS, Point Mugu ($3,500)	Tidegate work, dredging and upgrade interpretive area
NAVCOMMSTA, Stockton ($1,000)	Habitat improvement (cover and food) pond maintenance
WPNSTA Concord ($2,000)	Food plots (perennial grass and shrubs for Tule Elk, etc.)

APPENDIX A (continued)

NAS, Whidbey Island ($2,000)	Food and cover plantings and water development
NAVWPNSYSTRAFAC Boardman ($4,000)	Water and spring development
NAVUSEAWARENGSTA Keyport ($2,000)	Pond maintenance and development
NSC, Manchester ($1,500)	Habitat protection and water development
NAVRADSTA, Jim Creek ($2,000)	Pond, dock maintenance, tule control, remove beaver dam
SUBASE, Bangor ($2,000)	Water development, food and cover plots
WESTNAVFACENGCOM ($1,500)	Travel for technical assistance and project implementation
NAF, Midway ($8,000)	Wildlife protection and management
Target, Kahoolawe Island ($5,000)	Feral goat eradication
MCAS, Kaneohe Bay ($10,000)	Endangered species habitat protection

APPENDIX B

Fiscal Year 1979, Surplus Property Transfers
for Recreation in Coastal Counties

State/county	Property Name	Recipient	Acres	Est. Market Value
Delaware/Sussex	Former Harbor Defense Unit, Lewes	State of Delaware	.78	$ 30,000
Florida/Dade	Corps of Engineers Miami Beach Reser.	City of Miami Beach	16.87	16,000,000
Guam	Nimitz Beach, Agat	Territory of Guam	11.73	3,000,000
Guam	Santos Memorial Park, Lot 262, Piti	Territory of Guam	6.38	1,400,000
Hawaii/Maui	Kaonoulu Beach Lots	County of Maui	2.61	603,000
Louisiana/East Baton Rouge	Federal Supply Depot	East Baton Rouge Parish Recreat. Park Comm.	120.40	2,500,000
Maryland/ Baltimore	Federal Bldg., 111 N. Calvert	City of Baltimore	1.30	1 1/
Maryland/ Baltimore	Balt. Harbor Ferry Bar Site	City of Baltimore	1.70	3,500
Mass./Norfolk	Army Reserve Center	City of Quincy	7.59	87,000
New Hampshire	Harbor Defense Unit, Ft. Stark	State of New Hampshire	8.37	100,000
New York/Suffolk	Peconic MHW Facility	Suffolk County	8.47	42,000

1/ One dollar is indicated when the market value is unknown.

State/county	Property Name	Recipient	Acres	Est. Market Value
Penn./ Philadelphia	USA and AF Exchange Warehouse	State Fish	2.91	$ 300,000
Puerto Rico	Rodriques U.S Army Hospital	Puerto Rico Land Admin.	2.52	$1,209,600
Texas/Harris	Ellington Air Force Base	City of Pasadena	154.27	616,371
Texas/Neuces	Rodd Field	City of Corpus Christi	126.97	360,000
Virginia/Norfold	Willoughby Bay Family Housing Unit	City of Norfolk	3.94	75,000
Washington/ Jefferson	Portion of Fort Worden	Washington State	2.57	5,000
Washington/Mason	Hoodsport Admin. Site	Washington State	80.00	160,000
Washington/ Skagit	Burrows Island	Washington State	40.50	1 1/
T O T A L S	19 Properties		589.62	$25,491,473

1/ One dollar is indicated when the market value is unknown.

Source: Heritage Conservation
Recreation Service
Department of the Interior

Appendix C. Federal Environmental Statutes and Regulations Related to Energy Programs

Purpose: This Appendix is designed to provide the reader with brief descriptions of major Federal Departmental and Agency authorities and related functions which either facilitate or constrain siting of major energy facilties and energy resource development.

Organization: The major statutes are divided into 5 categories:

(1) Major Environmental Assessment Statutes and Regulations
(2) Major Energy Statutes and Regulations
(3) Major Statutes Regulating Air Resources
(4) Major Statutes Regulating Water Resources
(5) Major Statutes Regulating Land Use

Within these categories, statutes are coded to indicate the type of activity authorized:

Legend - Code to Functions

C	Consultation
EA	Environmental Assessment
P	Planning
R	Regulatory
R&D	Research and Development

Abbreviations consisting of Department or Agency initials have been used to get more information onto each page:

Department/Agency

BLM	-	Bureau of Land Management
CEQ	-	Council on Environmental Quality
COE	-	Corps of Engineers
DA	-	Department of the Army
DOC	-	Department of Commerce
DOE	-	Department of Energy
DOI	-	Department of Interior
DOT	-	Department of Transportation
EPA	-	Environmental Protection Agency
FERC	-	Federal Energy Regulatory Commission
FS	-	Forest Service
FWS	-	Fish & Wildlife Service
HCRS	-	Heritage Conservation and Recreation Service
NMFS	-	National Marine Fishery Service
NOAA	-	National Oceanic and Atmospheric Administration
NPS	-	National Park Service
NRC	-	Nuclear Regulatory Commission
OCZM	-	Office of Coastal Zone Management
USCG	-	U.S. Coast Guard
USDA	-	U.S. Department of Agriculture
USGS	-	U.S. Geological Survey
WRC	-	Water Resources Council

Functional statements are designed to point out the specific relationships to energy issues and are not intended to be all inclusive. The reader is referred to sources for full descriptions of each cited authority.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR ENVIRONMENTAL ASSESSMENT STATUTES AND REGULATIONS				
CEQ	EA	National Environmental Policy Act	42 USC 4321	Assigns lead agency to prepare Environmental Assessments and Environmental Impact Statements.
	R	Council on Environmental Quality Regulations to Implement NEPA	40 CRF 1500	Mediates NEPA disputes. Oversees compliance with regulations; provides guidance to Federal agencies to implement regulations.
EPA	EA	National Environmental Policy Act	42 USC 4321	Reviews and comments publicly on Environmental Impact Statements prepared pursuant to NEPA and CEQ Regs. If after review, the Administrator of EPA finds an EIS to be unsatisfactory, procedures under 40 CFR 1500 are followed in which the matter is referred to the CEQ.
DOI/FWS DOC/NMFS	C	Fish and Wildlife Coordination Act	16 USC 661 et seq 44 FR 29300 50 CFR 410	Requires Federal agencies to provide fish and wildlife conservation equal consideration with other features of projects. Requires consultation with state and Federal fish and wildlife agences to ascertain appropriate mitigation and compensation for project-occasioned losses to wildlife and to enhance fish and wildlife resources.
MAJOR ENERGY STATUTES AND REGULATIONS				
DOE	P R&D	Department of Energy Organization Act	42 USC 7101	Coordinates the management and administration of Federal agency policy, programs and research which impact national energy development.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR ENERGY STATUTES AND REGULATIONS (con't)				
	C	Energy Coordinating Committee	EO 12083	Provides a mechanism for consultation with other Federal agencies and departments to encourage them to establish and observe polices consistent with national energy policy and to promote maximum energy conservation.
OMB	C	Critical Energy Facility Program	EO 12129	Directs the Office of Management and Budget to establish a Critical Energy Facilities Program. OMB, after consultation with Executive agencies named in the Order, shall make recommendations to the President as to which non-nuclear energy facilities should be included in the program.
DOE/ERA	R	Powerplant and Industrial Fuel Use Act (FUA)	42 USC 6211, 7000, 8000 45 USC 821-825 49 USC 266 44 FR 28530, 28594, 36002, 43176 10 CFR 500,501, 504	Prohibits the use of petroleum and gas in new electric power plants and industrial installations and prohibits the use of natural gas in existing power plants in 1990 or thereafter. Grants DOE authorization to issue prohibition laws in specific cases. Provides for temporary and permanent exemptions.
DOE/FERC	R	Department of Energy Organization Act, Title IV	42 USC 7101	Assures Nation's consumers adequate energy supplies at just and reasonable rates, while allowing energy producers sufficient rates of return to provide incentives for increased productivity and efficency.
		Federal Power Act	16 USC 791 et seq 18 CFR Ch. 1	Regulates, both directly and indirectly, the production, transmission and sale of electric power, in interstate commerce. Issues licenses for non-Federal hydroelectric projects.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR ENERGY STATUTES AND REGULATIONS (con't)				
		Natural Gas Act	15 USC 717 18 CFR 153, 157	Regulates both directly and indirectly, the production, transportation and sale of natural gas in interstate commerce.
		Natural Gas Policy Act	15 USC 717f	Regulates both directly and indirectly, the production, transportation and sale of natural gas in interstate commerce.
		Public Utility Regulatory Policy Act	15 USC 717f 16 USC 791a 30 USC 1311-1316 42 USC 6802-6808	Regulates both directly and indirectly, the production, transmission and sale of electric power and natural gas in interstate commerce.
		LNG Rulemaking	Docket RM76-13	Issues rulemaking to establish site selection and facilities operation criteria for LNG importation and storage terminals.
DOE/NOAA/EPA	R	Ocean Thermal Energy Conversion Research, Development and Demonstration Act	42 USC 9101	Establishes the jurisdictional authority and Federal government policies which apply to private companies that wish to build commercial OTEC facilities and plantships. Establishes a one-stop licensing process administered by NOAA. EPA has authorization to issue NPDES permits for discharges. Final regulations implementing the act are expected to take effect August 3, 1981.
NRC	R	Energy Reorganization Act of 1974 EO 11834	42 USC 2011	Licenses construction and operation of nuclear reactors, and other nuclear facilities and possession, use, processing, transport, handling and disposal of nuclear materials. Regulates licensed activities.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING AIR RESOURCES				
EPA	P/R	Clean Air Act, as Amended (1977) (CAA)	43 USC 7401 et seq	
		National Primary and Secondary Air Quality Standards (NAAQS)	40 CFR 50	Administrator of EPA establishes national primary and secondary standards for: photochemical oxidants (ozone), carbon-monoxide, nitrogen dioxide, sulfur dioxide, total suspended particulates, hydrocarbons, lead.
		New Source Performance Standards (NSPS)	40 CFR 60	Administrator of EPA lists categories of sources that "may contribute to air pollution which causes or contributes to endangerment of public health and welfare" and sets standards of performance for such sources. Performance standards have been set for 27 categories of emission sources including fossil-fuel steam electric plants, petroleum refineries, petroleum storage vessels.
		National Emission Standards for Harzardous Air Pollutants (NESHAP)	40 CFR 61	Administrator of EPA issues regulations for hazardous air pollutants which may cause or contribute to an increase in mortality or cause serious irreversible illness.
		Motor Vehicle Emission Standards	40 CFR 85	Administrator of EPA establishes level of emission from new automobiles, heavy duty vehicles and motorcycles.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING AIR RESOURCES (con't)				
		Non-uniform nationwide requirements: State Implementation Plans (SIP)	40 CFR 51, 52 43 FR 21673 44 FR 20372	State Implementation Plans (SIP) establish requirements for non-attainment areas. The SIP's must provide for attainment of all National Ambient Air Quality Standards (NAAQS) by December 31, 1982, with certain exceptions. If NAAQS is not met by the deadline, SIP must provide for annual reductions in emissions. New Source Review Program must require, prior to issuance of a permit for any major pollution source, an analysis of alternative sites, sizes, production processes and control technologies which demonstrate that benefits of proposed sources outweigh environmental and social costs.
		Prevention of Significant Deterioration of Air Quality	40 CFR 51, 52 43 FR 26380 44 FR 51924	States must ensure prevention of deterioration of air quality in areas where air is cleaner than the National Ambient Air Quality Standards (NAAQS). Congress gave some areas mandatory Class 1 designations while allowing states to classify other areas from Class II to either Class I or Class II designations. Class I — No worsening of air quality accepted Class II — Deterioration normally accompanying "moderate well-controlled growth" would be acceptable Class III — Deterioration to levels no worse than NAAQS acceptable

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING AIR RESOURCES (con't)				
		Control of Pollution from Federal Facilities	CAA, Sec. 118 EO 12088	Provides that head of each Federal department is responsible for compliance of its facilites with all Federal, state, interstate and local air pollution control standards and procedures.
		Federal Conformity to State Implementation Plans	CAA, Sec. 176(c)	Requires Federal agencies to assure conformity of their actions to each EPA approved, conditionally approved or promulgated State Implementation Plan.
		Limitations on Federal Assistance to Transportation Projects	44 FR 33473	Withholds Federal assistance in non-attainment areas where transportation controls are ncessary to attain National Ambient Air Quality Standards.
		Protection of Visibility	CAA, Sec 165(d) 165(e) 169(a)	Requires visibility protection for mandatory Class I Federal areas where visibility is determined to be of value.
		Restrictions on the Construction of New Sources in Non-Attainment Areas	44 FR 38471 38583	Restricts approval of new source permit applications where EPA has not approved, or conditionally approved SIP non-attainment areas.
DOI	R	OCS Lands Act Amendments of 1978	43 U.S.C. 1334	Section 5(a)(8) of the Act requires the Secretary of the Interior to prescribe regulations with provisions for compliance with the national ambient air quality standards pursuant to the Clean Air Act to the extent that activities authorized under the Act significantly affect the air quality of any state.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING AIR RESOURCES (con't)				
		Oil and Gas and Sulphur Operations in the Outer Continental Shelf-Air Quality	30 CFR 250.57	The Secretary of the Interior, through the U.S. Geological Survey, establishes a regulatory program to implement Section 5(a)(8) of the OCSLAA concerning the regulation of air emissions from oil and gas operations on the OCS.
MAJOR STATUTES REGULATING WATER RESOURCES				
EPA	P/R	Clean Water Act (CWA)	33 USC 1251 et seq	
		Water Quality Standards	CWA Sec 302,304	EPA promulgates water quality standards for all navigable interstate and intrastate waters and effluent limitations for 42 industries including Best Practical Control Technology (BPCT), Best Available Control Technology (BAT) and New Source Effluent Standards.
		National Pollutant Discharge Elimination System (NPDES)	40 CFR 122-125	Requires all dischargers to reduce levels of pollution to BAT by 1983. Usually delegated to states. New sources must prepare an EIS if permit is issued by EPA. Permits must consider State and Area Water Quality Management Plans prepared under Section 208, CWA. Ocean discharges must comply with requirements under Section 403(c).
		Pretreatment Program	40 CFR 403	Protects municipal treatment systems from upset and contamination by industries located on and feeding into sewerage systems.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUES REGULATING WATER RESOURCES (con't)				
COE	R	River and Harbor Act of 1899	33 USC 401 et seq	
		Section 9	33 USC 401 et seq 33 CFR 321	Prohibits construction of any dam or dike across navigable water in absence of Congressional consent and COE approval. Provides for state authority in lieu of Congressional consent in cases where a navigable waterbody lies within limits of a single state
		Section 10	33 USC 401 et seq 33 CFR 322	Prohibits unauthorized obstruction or alteration of any navigable water. Requires COE permits, general permits or letters of authorization. Extends COE authority to artificial islands and fixed structures on OCS by OCSLAA.
DA/COE	R	Permits for Discharge of Dredged Fill Material ("404)" Permits)	33 CFR 320-330 40 CFR 230 40 CFR 122-124	Ensures that discharge of dredged material is carried out in a controlled and environmentally protective manner. Permits are issued by the Corps of Engineers and reviewed by EPA. Corps provides public interest review for each permit application. Some authorities delegated to states.
EPA DA/COE	R	Marine Protection, Research and Sanctuaries Act Ocean Dumping Permit	33 USC 1401 et seq 40 CFR 220-230 33 CFR 324	EPA issues permits which regulate ocean disposal of all materials, except dredged material. COE reviews applications by all persons seeking to transport material to the oceans for purposes of disposal.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING WATER RESOURCES (con't)				
DOC/NOAA	R	Marine Sanctuaries Program	Title II 15 CFR 921 Title III 15 CFR 922	Undertakes programs of scientific investigation related to marine pollution. Establishes sanctuaries. Establishes appropriate management systems within designated sanctuaries and enforces compliance with these systems.
EPA	R	Safe Drinking Water Act Sole Source Aquifers	42 USC 300 Sec 1424(e)	Protects sole or principal sources of underground drinking water from contamination through recharge zones.
		Underground Injection Permits	40 CFR 122-124 146	Protects groundwater sources of drinking water from underground injection or emplacement of fluids below surface of ground.
EPA	R	Resource Conservation and Recovery Act (RCRA)	90 Stat 2795 40 CFR 122-3 264-5	Administrator of EPA promulgates regulations requiring all generators to manifest their wastes and containerize. Requires permits for disposal, treatment and storage facilities.
WRC	P/R	Water Resources Planning Act	42 USC 1962	Maintains continuing studies and assessments of water demand and relation of regional or river basin plans and programs to national requirements. Establishes Principles and Standards and procedures for Federal participation in regional or river basins commissions. Establishes consistency requirement for certain Federal programs and activities.
		Floodplain Management	EO 11988	Requires WRC to provide consultation on development of procedures to implement the Executive Order and to evaluate agency effectiveness in implementing the Executive order.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING LAND USE				
DOC/NOAA/OCZM	P/P	Coastal Zone Management Act (CZMA)	16 USC 1451	Declares national policy for all Federal agencies to cooperate and participate with state, local and regional government agencies in the development of Coastal Zone Management Programs (CZMP).
		Approval of State CZMP's	Sec 306 15 CFR 920	Requires state CZMP's to provide for adequate consideration of the national interest (306(c)(8)) and to provide a planning process for energy facilities likely to be located in, or significantly affecting the coastal zone (305(b)(8)).
		Federal Consistency	Sec 307 15 CFR 930	Requires Federal agencies to ensure actions are consistent with approved state CZMP's
		Coastal Energy Impact Program	Sec 308 15 CFR 931	Provides financial assistance (loans, bonds, guarantees and grants) to meet state and local needs resulting from impacts caused by new or expanded coastal energy activity.
	P/R	Estuarine Sanctuaries	Sec 315(1) 16 USC 1461	Promulgates regulations for implementation of sanctuaries program. Provides grants to states on matching basis for acquisition, development and gravation of natural areas as estuarine sanctuaries.
DOI	P/R	Outer Continental Shelf Lands Act, as amended (OCSLAA)	43 USC 1331	Secretary of Interior promulgates regulations concerning the prevention of waste, conservation of natural resources and any other provision of this Act relative to OCS (Outer Continental Shelf).

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING LAND USE (con't)				
DOI/BLM	P/R	Outer Continental Shelf Lands Act, as amended (OCSLA)	43 USC 1331	Grants rights-of-way through submerged lands for pipeline purposes. Develops, maintains and reviews comprehensive 5-year leasing program. Collects and analyzes environmental data. Prepares EIS, and lease sale stipulations. Monitors performance.
DOI/USGS	P/R	Outer Continental Shelf Lands Act, as amended (OCSLA)	43 USC 1331	Promulgates and enforces safety measures on OCS. Requires operators to obtain drill permits. Issues operating orders. Monitors performance.
DOI/BLM	P	Federal Land Policy and Management Act of 1976	43 USC 1701 et seq	Prepares and maintains inventory of all public lands and resources thereon.
	P	Mineral Leasing Act of 1920	30 USC 185	Develops, maintains and revises land use plans.
	R	Federal Highway Act	23 USC 107(d)	Manages and regulates use, occupancy and development of public lands.
	R	Rights-of Way Regulations	43 CFR 2800	Grants and renews rights-of-way upon, under or through public and Federal lands.
DOI/FWS DOC/NMFS	R/C	Endangered Species Act, as amended	16 USC 1531 50 CFR 402, 403 50 CFR 450, 452, 453 50 CFR 17.11	Requires Secretary of Interior for non-marine species and Secretary of Commerce for marine species to: Determine by regulations whether any species is endangered or threatened. Issue regulations as deemed necessary to provide for conservation of species. Acquire lands as necessary to establish and implement programs to conserve such species. Prohibit actions which violate any regulations pertaining to such species. Requires all Federal agencies to consult with and receive assistance from DOI/DOC to carry out programs for conservation of endangered and threatened species.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING LAND USE (con't)				
DOI/HCRS	C	National Historic Preservation Act	16 USC 470	Project review for possible impacts on historic and archaelogical resources.
DOI/NPS	P/C	Wild and Scenic Rivers Act	16 USC 1271 et seq	Designates and establishes national Wild and Scenic Rivers System. Project review for possible impacts on Wild and Scenic Rivers.
USDA/FS	R	Easement or Right-of-Way Special Use Permit	36 CFR 251 36 CFR 50 et seq 36 CFR 212.10	Grants easement or right-of-way through Federal land. Grants occupancy and other special use permits on Federal lands.
	P	Forest Rangeland Renewable Resource Planning Act	16 USC 851 h	Develops land use plans
	P/R	Wilderness Act	16 USC 1131	Designates certain areas as "wilderness areas".
DOT/USCG	R	Bridge Administration Program: River and Harbor Act of 1899; Act of March of 1906; International Bridge Act of 1972 General Bridge Act of 1946; and Special Acts of Congress	33 USC 401, 491, 525-533	Minimizes inherently obstructive nature of of bridges to insure safe and unencumbered passage of marine traffic on the nation's waterways.
		Bridge construction permits	33 CFR 114.11	Grants permits to construct bridges over navigable waters.
		Aids to Navigation Permit	33 CFR 66.01-35	Grants permits to install aids to navigation, prescribe lights, signs.
		Ports and Waterway Safety Act	33 USC 1221	Controls vessel traffic, size of vessel, directs mooring.
		Clean Water Act	33 USC 1251	Promulgates regulations for discharge of oil to navigable waters.
DOT	R	Natural Gas Pipeline Safety Act	49 USC 1671	Promulgates safety regulations.

APPENDIX - FEDERAL ENVIRONMENTAL STATUTES AND REGULATIONS RELATED TO ENERGY PROGRAMS (con't)

DEPT/AGENCY	CODE	PROGRAM	CITE	FUNCTIONS
MAJOR STATUTES REGULATING LAND USE (con't)				
AGENCIES	P/R	Floodplain Management	EO 11988	Requires all Federal agencies to determine if their proposals involve activities in or affecting floodplains to avoid such areas where practicable, to minimize adverse impacts and restore and preserve natural values if avoidance cannot be achieved and to involve the public in the dicision making process.
AGENCIES	P/R	Wetlands Management	EO 11990	Requires all Federal agencies to determine if their proposals invole activities in or affecting floodplains to avoid such areas where practicable, to minimizie adverse impacts and enhance and preserve natural value if avoidance cannot be achieved and to involve the public in the dicision making process.

The White House
August 2, 1979
Detailed Fact Sheet for New Initiatives
The President's Second Message on the Environment

Today, the President issued his second Environmental Message. The Message sets out the Administration's environmental priorities for the 96th Congress, reaffirms fundamental environmental policies that have guided his Administration and announces new initiatives in twelve areas. A detailed look at the President's initiatives follows.

I. Land and Resource Management

NATIONAL COASTAL PROTECTION

Despite substantial state and federal achievements in the protection of our coastal zone, this rich and unique recreational, ecological and economic resource is faced with increasing population, development and other environmental pressures. Federal, state and local governments need to continue strong and coordinated efforts to address these pressures and to assure that our coastal area is protected and developed in a balanced manner.

Various demands on coastal resources by a variety of sectors of the economy threaten the essential fragile, natural systems that have long-term economic and ecological importance.

- Nearly half of our multi-billion dollar fishing industry depends directly on nearshore waters where fish spawn and feed. Our shellfish catches have continued to decline. Over 50 percent of the Atlantic shellfish beds have been closed due to pesticides, oil and sewage contamination.
- Man has altered two-thirds of our barrier islands and in some cases has destroyed these most effective natural coastal storm buffers along the Atlantic and Gulf coasts.
- Alteration of natural coastal processes combined with the ever increasing concentration of population in coastal floodplains (approximately 53 percent of the nation's population lives within a 50-mile wide coastal strip) is reflected in increased levels of property damage and loss of human life. The cost of disaster relief for emergency services and cleanup could be reduced if natural buffers, such as wetlands, beaches, dunes and barrier islands, were maintained.
- Increased industrial development and private, second home construction also create barriers to public access of our Nation's coastline. Water has emerged as the focus for most outdoor recreation; water-based recreation is heavily demanded. The lure of the coast attracts millions to coastal states and forms the economic mainstay of many communities. The demand for water-based recreation exceeds the supply of public recreational opportunities in many coastal areas.

The "coastal challenge"—the balancing of these conflicting land uses—is formidable. It requires a coordinated federal-state-local response.

The Coastal Zone Management Act of 1972 is a central element of federal efforts to manage and protect coastal resources. It establishes a voluntary federal-state partnership for comprehensive management of coastal areas. The Act provides states with federal assistance and guidance in the development of coastal management policies and mechanisms.

The Act has helped stimulate significant results among the states: 8 states have new wetlands legislation or regulations in response to the requirements of the Coastal Zone Management Act; of the 21 states protecting beaches and dunes the Act has prompted new or expanded laws in 7. Eight more states have established special protection for important, unique or endangered flora and fauna. Of 20 states with controls over erosion-prone areas, 12 have new or expanded laws in response to coastal zone management; 11 states now have additional measures to manage floodplain development. Even so, valuable resources remain insufficiently protected.

Federal programs having a wide variety of missions now directly or indirectly affect the long-term health of significant natural coastal systems.

- Executive orders on wetlands and floodplains, the Deepwater Port Act of 1974 and the Outer Continental Shelf Act Amendments of 1978 all affect development and long-term use of the Nation's coastal resources.
- Federal highway, community development, recreation, fish and wildlife and a host of other federal aid programs, if not reviewed properly, can cause development to occur that frustrates efforts to protect critical resources.
- The potential development stimulus of the National Flood Insurance Program in the coastal zone is an oft-cited example of the inconsistency of federal program goals. Preliminary studies indicate that the insurance program may actually encourage rather than discourage rebuilding in coastal floodplains after storm damage.

Together these federal programs result in significant but unnecessary federal, state and local expenditures. Program coordination therefore is important for coastal resource protection and sound program management.

Reauthorization of the Coastal Zone Management Act

The Administration will submit legislation to reauthorize the Coastal Zone Management Act, which expires in 1980. The legislation specifically would extend federal assistance to state coastal zone management programs and would propose amendments to strengthen, refine and clarify the Act.

The 15 states that now have federally approved management programs and the 4 more that are expected to have approved programs by the end of 1979 need federal support to ensure the establishment of stable state and local coastal institutions and administrative systems. The President's proposal would guarantee each state a total of five years of federal assistance at current funding levels after a state management program is federally approved. Thereafter federal support will be gradually phased down.

Strengthening of the Coastal Zone Management Act

The nation's interests in coastal protection and the essential role of states in protecting these interests also need clarification in the Coastal Zone Management Act. The Administration is therefore recommending the enactment of amendments to the Act to establish a clear national coastal protection policy and to emphasize the protection of national interests by encouraging states to further implement programs to:

- protect significant natural resources such as wetlands, estuaries, beaches, dunes, barrier islands, coral reefs and fish and wildlife;
- manage coastal development to minimize loss of life and property from floods, erosion, saltwater intrusion and subsidence;
- provide predictable siting processes for major defense, energy, recreation and transportation facilities;
- increase public access to the coast for recreational purposes;
- preserve and restore historic, cultural and aesthetic coastal resources; and
- coordinate and simplify government decision-making to ensure proper and expedited management of the coastal zone.

As state programs become institutionalized, a larger portion of federal financial assistance will be targeted to helping states accomplish the above objectives.

The Administrator of the National Oceanic and Atmospheric Administration (NOAA) will be working closely with the Congress to reauthorize the state program implementation and administration assistance provisions of the Coastal Zone Management Act and to strengthen its policy provisions.

Review of Federal Programs Significantly Affecting Coastal Resources

The President is directing the Secretary of Commerce through the Administrator of the National Oceanic and Atmospheric Administration to conduct a systematic review of federal programs significantly affecting coastal resources. This review will include an evaluation of:

- whether federal funds, programs, licenses and permits affecting coastal areas are employed in a consistent or coordinated fashion;
- whether federal actions contribute to wasteful, uneconomic or environmentally unsound development in coastal areas;
- conflicts in the policies and objectives of federal programs;
- the effect of federal programs and activities on critical natural systems, unique and scenic recreational areas and erosion-prone or hazardous areas.

The federal agencies, coastal states, local governments, the private sector, scientists and citizen groups will be asked to participate in the review process. The review findings, to be available within one year, will provide the basis for specific recommendations to improve implementation of the Coastal Zone Management Act, to improve federal

agency administration of programs and procedures affecting the coastal zone and to develop any additional legislation needed to achieve our national coastal management goals. It will examine major federal programs having an effect on the coastal zone, including:

- compliance with Executive Order 11988—wetlands protection;
- compliance with Executive Order 11990—floodplain management;
- implementation of the Outer Continental Shelf Lands Act;
- implementation of Section 404 of the Clean Water Act—dredge and fill permits;
- implementation of Section 208 of the Clean Water Act—regional water quality planning;
- implementation of the National Flood Insurance Program;
- federal highway funds, bridge permits and other relevant transportation programs;
- national recreation and park programs;
- fish and wildlife protection and management programs; and
- urban redevelopment programs.

Environmental Priorities and Programs

Message to the Congress. August 2, 1979

National Coastal Protection

America's coast lines are extraordinarily varied, productive and beautiful. Congress recognized the need for special protection in the Coastal Zone Management Act of 1972, which established a voluntary Federal-State partnership for the conservation and management of coastal resources. Under this partnership, many states have already made notable progress. They have passed comprehensive coastal management laws; adopted new measures to protect wetlands, barrier islands, mineral resources, historic sites and other important coastal resources; worked out better management of hazardous areas; and streamlined Federal, State and local actions affecting the coast. By the end of 1979, 75 percent of the U.S. shoreline will be covered by Federally-approved state coastal zone management programs.

The coastal zone is subject to unusual pressures, both from natural causes and human activities. The land and water resources which support the environments and economies of coastal communities are in danger of depletion. The opportunity for our citizens to enjoy beaches, bays, and marshes is often threatened. I support efforts to improve our understanding of these coastal issues, and I heartily endorse the designation by conservation organizations of the year 1980 as the "Year of the Coast."

To help achieve the balanced, comprehensive and wise management intended by the Coastal Zone Management Act, I am announcing three initiatives to continue and improve our resource protection policy.

First, I will submit to Congress legislation to reauthorize Federal assistance to state coastal zone management programs under the Coastal Zone Management Act. Under this extension, each state would be guaranteed a total of five years of federal assistance at current levels after a state management program is approved and before federal support is gradually phased down. This will help ensure that recently developed state and local coastal zone management efforts become fully established and accepted functions of government.

Second, I will recommend enactment of new amendments to the Coastal Zone Management Act that will establish a national coastal protection policy. Working through the states, the goals of this policy will be:

- to protect significant natural resources such as wetlands, estuaries, beaches, dunes, barrier islands, coral reefs, and fish and wildlife;
- to manage coastal development to minimize loss of life and property from floods, erosion, saltwater intrusion and subsidence;
- to provide predictable siting processes for major defense, energy, recreation and transportation facilities;
- to increase public access to the coast for recreation purposes;
- to preserve and restore historic, cultural and aesthetic coastal resources; and
- to coordinate and simplify government decisionmaking to ensure proper and expedited management of the coastal zone.

Third, I am directing the Secretary of Commerce to conduct a systematic review of federal programs that significantly affect coastal resources. This review, to be conducted by the National Oceanic and Atmospheric Administration, will provide the basis for specific recommendations to improve federal actions affecting the coastal zone and to develop any additional legislation needed to achieve our national coastal management goals.

National Coastal Protection

Memorandum From the President.
August 2, 1979

Memorandum for the Secretary of Commerce

In my Environmental Message of August 2, 1979, I recognized the special protection that we accord coastal resources such as wetlands and barrier islands through the federal/state partnership established by the Coastal Zone Management Act. It is important to develop effective management organizations for dealing with coastal zone issues so that responsible planning and sound decisions can be made on resource protection and development proposals. I also recognized the fact that our experience in implementing the Coastal Zone Management Act has revealed areas where improvements can be made in identified aspects of federal programs which at times conflict with those of the Coastal Zone Management Act. I stressed the need for a systematic review of all federal programs significantly affecting coastal resources to help assure consistency among federal efforts in achieving the objectives of the Coastal Zone Management Act.

Therefore, I am directing you to conduct a systematic review of all federal programs significantly affecting coastal resources and to evaluate and identify: (1) any conflicts in the policies and objectives of existing programs, particularly conflicts with CZMA goals; (2) whether these programs are being implemented in a consistent and coordinated fashion; and (3) if any program contributes to uneconomical or environmentally unsound development activities affecting critical natural systems. The federal agencies, coastal states, local governments, the private sector, scientists and citizen groups should be asked to participate in the review process.

The review shall be completed within one year, in order to provide the basis for specific recommendations to improve implementation of the Coastal Zone Management Act, to improve federal agency administration of programs and procedures affecting the coastal zone, and to develop any additional legislation to achieve our national coastal management goals.

Please give this assignment your immediate attention.

JIMMY CARTER

☆U.S. GOVERNMENT PRINTING OFFICE: 1981—340-997/1543