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PUBLIC INVOLVEMENT IN MARITIME FACILITY DEVELOPMENT

Prepared by the
Committee on the Impact of
Maritime Services on Local Populations
Maritime Transportation Research Board
Commission on Sociotechnical Systems
National Research Council

National Academy of Sciences
Washington, D.C. 1979

NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the Councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the Committee responsible for the report were chosen for their special competences and with regard for appropriate balance.

This report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, The National Academy of Engineering, and the Institute of Medicine.

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Executive Director
Maritime Transportation Research Board
National Research Council
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Washington, D. C. 20418

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Office of Publications
National Academy of Sciences
2101 Constitution Avenue, N.W.
Washington, D. C. 20418

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COMMITTEE ON IMPACT OF MARITIME SERVICES ON LOCAL POPULATIONS

Oliver Brooks, *Chairman*
Consultant
Cambridge, Massachusetts

MEMBERS

Walter C. Boyer
Deputy Administrator
Maryland Department of Transportation
Maryland Port Administration

Daniel M. Bragg
Associate Research Engineer
Industrial Economics Research Division
Texas A&M University

Bertrand de Frondeville
Managing Director
BDF International Company

Michael L. Fischer
Executive Director
California Coastal Commission

Marc Messing
Director of Energy Facility Siting Analysis
Environmental Policy Institute

Jerome E. Milch*
Assistant Professor
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Pittsburgh, Pennsylvania

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Center for Urban Programs
St. Louis University

Nathan S. Simat
President
Simat, Helliesen & Eichner, Inc.

Edward Turner
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Marine Cooks & Stewards Union
VP Seafarers International Union of North America

LIAISON REPRESENTATIVES

R. Keith Adams
Chief
Eastern Planning Management Branch
Planning Division
Department of the Army

Armour S. Armstrong
Director of Port & Intermodal Development
Maritime Administration
Department of Commerce

Walter Groszyk
Deputy Director
Water Planning Division
Environmental Protection Agency

John E. Lescroart**
Vice President
C. F. Bean Corporation

* Assistant Professor, Political Science Department, University of Pittsburgh, since September 1978.
** Director, Office of Deepwater Ports, Department of Transportation, until January 1977.

Carl Pavetto
Office of Coastal Zone Management
National Oceanic and Atmospheric Administration

William E. Riedel
Chief
Ports and Waterways Planning Staff
Office of Marine Environment and Systems
U.S. Coast Guard
Department of Transportation

****

STAFF

Leonard E. Bassil
Project Manager
Maritime Transportation Research Board

Leoda A. Harvey
Staff Secretary
Maritime Transportation Research Board

Lavon D. Norris
Secretary

****

Panel members serve as individuals, contributing their personal knowledge and judgment, and not as representatives of any organization by which they are employed or with which they may be associated. Liaison representatives attend for their respective organizations to provide information or opinion on issues under discussion, but have no vote on conclusions and recommendations.

FOREWORD

This report is the product of a study group that worked under the auspices of the Maritime Transportation Research Board of the National Academy of Sciences-National Research Council. The study was conducted as part of a continuing program of advisory services to the federal government for improving the efficiency and effectiveness of the United States maritime transportation system.

Recent technological advances in the maritime industry, brought on by changes in trading patterns and particularly by increased energy imports, have generated both benefits and hardships for the general public. To seek ways to minimize social, economic, and environmental costs associated with changes, the Committee on the Impact of Maritime Services on Local Populations examined the issues associated with development of the maritime transportation industry. The three-fold goal of the committee was to improve public participation in port and maritime planning, to improve the process of communicating with the people most affected by change, and to suggest methods for alleviating adverse effects.

The committee was an interdisciplinary one, with the following areas of competence represented: port planning, sociology, urban planning and policy, transportation economics, energy facility siting, labor relations, and political science. Oliver Brooks was the chairman of the committee.

I extend my thanks to the committee members and liaison representatives for their willingness to serve on the committee, their dedication, and their fine work. My thanks also go to the review committee and staff for their efforts on behalf of the Maritime Transportation Research Board.

R. R. O'Neill, Chairman
Maritime Transportation
Research Board

October 1978
Washington, D.C.

PREFACE

The Committee on the Impact of Maritime Services on Local Populations has found its experience both invigorating and troublesome. Invigorating--because there evolved a consensus that the fundamental issues will have significant impact on future developments in a maritime industry serving the continually growing international commerce of the United States. Troublesome--because there is not a clear pattern of conventional solutions that can be easily derived from empirical data and translated into a clear-cut format that is relatively free of value judgments.

We point this out with a sense of realism rather than of apology.

The critical issues of the report revolve around the strategies of public participation and the techniques that can be applied to problems of mitigation and compensation. In considering these issues the committee was frequently faced with the necessity of narrowing its focus and, in certain specific areas, of resisting the temptation to comment in a generalized way on problems that do not lend themselves to superficial treatment.

I would note the following special comments at this point:

1. Sensitized public participation should be a fundamental part of an orderly and equitable democratic process. Yet there are those who can argue persuasively that such participation can become a distorted instrument for special interest groups and the self-appointed representatives of the "public interest." While the committee believes that public participation--initiated early and evolved sensitively--should be viewed as a vital ingredient of the decision-making process, we recognize its potential limitations and distortions and admit that it must be based on a certain act of faith. Given its inevitability, it can be more effective, efficient, and useful if it starts early in the process and in a way in which its ultimate transaction costs can be more intelligently focused. Public participation cannot be looked upon as a substitute for decision making by elected officials, even though it may provide significant guidance along the route to the decision. To the degree that disenchantment with government has become a central theme of the seventies, part of that disenchantment rests on a failure of elected officials to assume their rightful role and an overreliance on appointive bureaucracies which are often unresponsive to people.

2. Complexities in the permitting process provide many reasons to argue for simplification or streamlining. However, such arguments cannot be too simplistic; their value is directly related to their degree of specificity in regard to corrective measures. It must be recognized that complexity, while a deterrent to effective public participation and understanding, also serves as an added protective device for the affected public in terms of the bureaucratic restraints that are inherent in it. The committee concluded, however, that it was not within its mandate to set forth a comprehensive framework for modifying the process.

3. Achievement of orderly maritime-related development is the underlying theme of this document. There are some, however, who will argue that the committee has, consciously or not, erected impediments to the achievement of this goal. To the extent that these critics may ascribe to us an antidevelopment posture, we would argue strongly to the contrary. We would set forth the proposition--tinged though it may be with a measure of idealism--that enlightened public participation should enhance assurance of accomplishing the jobs that need to be done and should provide the framework for balancing the difficult cost/benefit disparities that are part and parcel of any project.

The committee's recommendations bearing on public participation are not so much based on a common optimism about its assured success in all instances as they are based upon a common pessimism about the decisions and the implementation steps that will take place in an atmosphere of nonparticipation. We are keenly conscious that many developments are intrinsically damaging to one or another group of neighbors, but we view the public participation process as a significant ingredient in resolving these problems sensitively and equitably.

4. Maritime facilities are an important part of the economic infrastructure of many of the nation's metropolitan communities. The ebb and flow of the economic health of these facilities can have significant effects on a variety of related community problems, such as land use allocations, regeneration of obsolete or outdated structures, and resolution of difficult interfaces between often incompatible residential/recreational/economic uses. The committee has been aware throughout its deliberations of the important interrelationships that are involved and in some respects would have liked to have said more on the subject of dealing with these recurrent issues. It concluded, however, that this complex set of issues--while significant--could not be treated with the thoroughness it deserves within the parameters of our assignment. Suffice

it to say that the existence of these problems argues strongly for placing maritime-related issues more directly within the mainstream of metropolitan decision-making processes.

5. Compensation is a subject of notable complexity. The committee explored its wide-ranging ramifications in considerable detail--with particular emphasis upon those problems associated with "inverse condemnation," where properties are not actually required by a given development proposal even though they are located close to the proposed development. We are conscious as well of new techniques that are being explored as strategy in the location of energy-related facilities, such as intercommunity auctions. The committee feels strongly that the principle of "a home for a home," as opposed to the constraints of current market value alone as a determinant, was sufficiently important and sufficiently universal to justify comment--which comment we have made. We do not, however, feel that our competence and our mandate justify the comprehensive analysis that the subject undoubtedly deserves.

The committee worked under the aegis of the Maritime Transportation Research Board (MTRB) as part of the board's program to provide guidance toward improving the ocean transportation system of the United States. Members of the committee served without compensation, contributing their personal experience, knowledge, and judgment, at the invitation of the National Academy of Sciences-National Research Council. Liaison representatives from the relevant federal agencies were designated by their respective agencies. They served as full-fledged participants in committee deliberations and provided significant data resources on the variety of complex issues involved.

As chairman of the committee, I should like to append a special note of appreciation to my fellow committee members, to the numerous individuals who provided us with data, advice, and critical comment, and to the MTRB Project Manager Leonard E. Bassil. All gave generously of both their insights and their time, and the composite of that contribution made my assignment as chairman an enlightening and stimulating one.

Oliver Brooks, Chairman

October 1978
Washington, D.C.

ACKNOWLEDGMENTS

The Committee held nine meetings during the course of its investigation; seven in Washington, D.C., and one each in San Francisco, California, and Houston, Texas. At these meetings the Committee received presentations and heard firsthand from the people directly involved with problems affecting coastal land and maritime services. In addition, personal interviews were held in the Ports of Long Beach, Los Angeles, Portland, and Seattle. We gratefully acknowledge the cooperation, assistance, and counsel of the following individuals who contributed to the Committee's work:

Lloyd Anderson
Port of Portland, Oregon

Don Barney
Port of Portland, Oregon

Mark Braly
City of Los Angeles Mayor's Office

Col. Kenneth Bretsch
U.S. Army Corps of Engineers
Galveston District

Donald Bright
Port of Long Beach

Paul Chilcote
Port of Seattle

Fred Crawford
Port of Los Angeles

Joseph Edminston
Sierra Club, California

William D. Evers
Pettis, Evers, and Martin
San Francisco, California

Robert F. Goodwin
University of Washington, Seattle

Yehuda Hayuth
University of Rhode Island

Mark Hershman
University of Washington, Seattle

Peter Johnson
Office of Technology Assessment

Christine M. Kanmer
Port of Portland, Oregon

Robert H. Langner
Marine Exchange of the San Francisco Bay Region

Max Levy
Columbia LNG Corporation

Dorothy Nelkin
Cornell University

Tim O'Neil
Environmental Protection Agency

Eldon Opheim
Port of Seattle

Harold Pachos
Portland, Maine

Lyman Page
Kennebunk, Maine

Jep Pate
U.S. Army Corps of Engineers
Galveston District

John Pisani
Maritime Administration

William B. Read
Louisiana Offshore Oil Port

Charles Roberts
San Francisco Bay Conservation
and Development Commission

Sharon Roso
Portland, Oregon

Robert Schaadt
Standard Oil of Ohio

Dale Schmidt
Office of Congressman
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LIAISON REPRESENTATIVES

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****

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Leonard E. Bassil
Project Manager

S. Lynn Walton
Project Manager

Harvey C. Paige
Executive Secretary
Maritime Transportation Research Board

Marlene R. B. Phillips
Project Manager

Everett P. Lunsford, Jr.
Project Manager

C O N T E N T S

EXECUTIVE SUMMARY

The Committee on the Impact of Maritime Services on Local Populations was formed by the Maritime Transportation Research Board (MTRB) to address social, economic, and environmental problems faced by people affected by relocation, redevelopment, and other changes in maritime services and waterfront facilities. The committee analyzed the local impacts of maritime facilities and services and suggested ways to minimize them. The focus has been upon the human dynamics of the issue--the potential onshore impacts on people by the changes arising from new technology and the increased call for services--rather than upon the details of physical hardware and operational requirements.

PURPOSE AND APPROACH

The purpose of the study was to find ways of improving and enhancing (a) communication between relevant public agencies, industry, and local populations affected by changes in maritime facilities and services and (b) involvement of the public--those affected by the changes--in the planning and decision-making leading up to the changes. Emphasized in the approach to the study was the concept of the process for planning maritime facilities and changes with public involvement.

A variety of subject areas were examined: new maritime-related legislation and programs, such as the Deepwater Port Act and the Coastal Energy Impact Program; regulatory procedures at both the state and the federal level; the procedures and guidelines for a variety of programs for public involvement; the legal background and precedents for mitigation of and compensation for adverse effects associated with maritime facilities and services; and the approaches to solving similar problems in Western Europe and Japan.

Experience studied was far ranging: from an oil discharge facility and refinery proposed for Portland, Maine, to a publicly financed ship repair yard in Portland, Oregon; and from a containership port in the ship channel between the Gulf of Mexico and Houston, Texas, to a facility

in Long Beach, California, designed to receive oil shipped from Alaska.

CONCLUSIONS AND RECOMMENDATIONS

The committee has concluded that there is a definite need for greater citizen involvement in planning the development of maritime services as well as in the permit process. Improvements would include measures (a) to heighten communication between the public and governmental agencies and the private interests involved in changes of maritime facilities and services, (b) to simplify procedures for citizen participation in planning and making decisions relating to such changes, and (c) to reduce the complexity of regulatory requirements.

Accounts of the study investigation are set forth in chapters entitled "Perspectives on Maritime Development," "Citizen Involvement and Public Participation," and "Mitigation and Compensation." Case materials involving elements of the major topic in each of the three chapters are provided in a separate part of the report. The committee's recommendations within the major topical areas are as follows.

Perspectives on Maritime Development

Activities and operations related to ports frequently raise issues of competing sets of values, such as economic development imperatives and energy needs versus the quality of the environment, energy needs versus the safety of the nearby residents, and economic development versus recreation needs. Often, the costs and benefits of port expansion or changes in port operations fall inequitably and unevenly on the impacted populations. Failure to recognize and accommodate these diverse interests and concerns evenhandedly and expeditiously in the overall public interest increases the potential for serious economic and social disruptions.

Recommendation 1. In recognition of the finite nature of the American coastline and the widespread desire for access to it, serious consideration should be given at all levels of government to restricting business or industrial uses in coastal areas to those activities that are demonstrably maritime and/or water-dependent in character.

Citizen Involvement and Public Participation

The public participatory process:

- should be viewed as a necessary part of orderly democracy as well as a means of assuring comprehensive consideration of all significant costs and benefits.
- should be viewed as an essential device for the resolution of diverse and competing interests and for the adjudication of the inevitable imbalances of costs and benefits.
- should be a fundamental part of the decision-making process.
- can in many instances provide benefits to the project initiator.

Public participation should be characterized by an open two-way process, should begin as early as practical in the development, and should be considered by the project initiator as a necessary element in the activities that are required during the predevelopment stages.

Pursuit of these activities will undoubtedly require the strengthening of the "lead agency" concept at both the federal and the state level of governmental involvement.

Recommendation 1. A lead agency should be specifically designated early in the predevelopment process and should maintain, throughout, a highly visible public presence.

Recommendation 2. The lead permitting agency--prior to accepting a formal application--should perform a participation audit to determine whether the applicant has reasonably attempted to involve affected or concerned citizens and relevant local, state, and federal agencies in the predevelopment planning process. The lead agency should be obligated to withhold acceptance of the application or issuance of a permit until appropriate remedial actions have been initiated.

Recommendation 3. Broad-based residents' committees should be formed to review the design and operations aspects of proposed hazardous cargo facilities and for public bond-supported projects and to recommend effective measures for accommodation, mitigation, and compensation.

Recommendation 4. The applicant and/or the designated lead agency should provide time, appropriate staff, funds where necessary, and a comfortable setting to encourage a maximally effective public involvement process.

Mitigation and Compensation

Early participation in planning by impacted and legitimately concerned citizens, as well as relevant agencies, is a prerequisite for identifying potential problems of mitigation and compensation and for providing a framework for dealing with them in an open, rational, and balanced manner. In many cases there are socioeconomic or environmental costs in a localized area that are not offset by compensating benefits. As a general principle the committee believes that the developer/initiator should be expected to face these issues directly and to include the amelioration of the problems in the total project cost--whether it be the restoration of recreational amenities or the provision of replacement housing. At the same time the possible need for certain adjustments between the private developer and the government must be recognized. Government assistance in meeting such costs should be justified by tangible benefits to the government agencies' respective constituencies. There are cases in which full assessments against the initiator might run strongly counter to the public interest.

Compensation must be sensitive and comprehensive, giving consideration to such often overlooked factors as cost of replacement housing in a similar environment, actual cost of relocation to such housing, and recognition of losses such as tax and welfare benefits. "Sensitive" handling should be subject to a broad interpretation.

Varying impacts between adjacent communities that may involve a substantial imbalance in identifiable costs and benefits can be redressed by creative techniques such as tax sharing between communities, tax rebates, and creation of state-administered compensation funds.

Recommendation 1. Compensation measures should include, where applicable, the principle of "a home for a home," as enunciated in the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (Section 203(a)(1)(A)). The lead agency should require developers to comply with the terms of the legislation and should encourage them to offer technical assistance in relocation and financial management.

CONCLUSION

The complexity of the permitting process and the long lead times often associated with it are a two-edged sword. On the one hand, they tend to extend the process sufficiently that impacted parties have a greater opportunity to negotiate for legitimate protections and equitable applications of mitigation/compensation. On the other hand, lengthy proceedings can often deter continued and articulate participation by the affected citizen. The committee's goal is the accomplishment of legitimate projects as expeditiously as possible, while at the same time giving the greatest possible assurance of equity and fairness.

The committee's conclusions and recommendations are expected to lead to a procedure that will attentuate ill effects where they occur and bring more light to the general debate surrounding the development of the coastal zone for transportation services. In turn, this can lead to a fuller understanding of particular plans and a greater feeling of involvement and can perhaps minimize resistance to progressive change. In this way, costly delays that surround most programs relating to the coastal environment can be avoided.

CHAPTER I

INTRODUCTION

The patterns of change occurring in industry in the United States are familiar to the maritime community, particularly to port administrators and those dealing with maritime-related projects. Rapid growth of local and intercity trucking, expansion of express highway systems, development of trailer-on-flat-car (TOFC) and container-on-flat-car (COFC) railroad services, pipelines for bulk liquid transportation and the changing physical features of cities have all affected the character and location of ports and terminals.

Many new commercial, manufacturing, and warehousing activities require land for rail, truck, and, sometimes, air access. Related businesses need uninterrupted areas for straight-line production or single-story buildings capable of carrying heavy floor loads. Frequently, such businesses and industries have moved to outlying locations because no land is available for expansion in the central city.

As a result of industry's movement, the older general cargo terminals along downtown waterfronts have been separated from the commercial and industrial activities that are the origins and destinations of the port's traffic. As locations of ports and terminals have become obsolete, new waterfront and landward areas for cargo terminals and associated facilities have been established closer to the urban periphery. Generally, new facilities are located seaward of the older clusters, partly because of the deeper channels required by larger ships, partly to reduce transit time to open water, and partly because land is cheaper.

In response to these new demands, many changes have been made in the locations and basic physical and operational patterns of port facilities. These changes have made most general cargo piers obsolete in both their design and their location and have created demands for new facilities and locations. Supertankers, barge-carrying ships, roll-on/roll-off vessels, and van-sized containers are examples of technological advances that have induced changes in ports.

Port development resulting from these new conditions creates an economic multiplier or ripple effect. It sets in motion a chain of economic activities that in turn create new jobs, requirements for additional land for port-dependent commercial and industrial establishments, and additional demand for services. Port workers, for example, need houses, schools, and recreational facilities.

Service changes for the benefit of large populations, however, are not necessarily benefits to local communities or individuals whose lives may be affected by the installation of new facilities or the removal of a source of income. Construction and operation of new onshore and offshore port facilities, support activities for outer continental shelf drilling, and importation of raw materials and fuels inevitably affect the local coastal environment. Furthermore, improvement, development, and relocation of ports and related maritime services are accompanied by environmental, social, and economic effects on local communities, regions, and even the nation.

The ensuing issues and problems that surround ports and their ancillary maritime transportation services thus generally bring both benefits and hardships to the public. The benefits may include efficiency of cargo transfer, making possible lower costs of goods to the general consuming public, and also new employment opportunities; the hardships are usually associated with land use, traffic and urban congestion, and a decline in the quality of the environment.

BACKGROUND

The Committee on the Impact of Maritime Services on Local Populations was formed by the Maritime Transportation Research Board to address the social, economic, and environmental problems faced by people affected by the relocation, redevelopment, or other changes involving maritime services and waterfront facilities. Impetus for the study came from experiences with conflicts over many proposed public developments and the recognition that the issues and the problems of such developments apply to seaports and other coastal zone activities with transportation components, just as much as to airports, nuclear facilities, and waste treatment plants.

Conflict often is exacerbated by the maze of regulatory authorities, requirements, and procedures bearing on a given project--a maze which confuses and frustrates both the general public and the most aggressive and well-equipped corporation trying to initiate a project. Time and money often are spent needlessly by all parties concerned,

whether during the administrative process or in subsequent judiciary actions. This time and money could be spent more fruitfully on efforts to involve affected citizens, industry, and government in actions designed to select the best alternative in the most expeditious manner, including the option to "do nothing," or to develop adequate mitigating and compensatory measures.

STUDY OBJECTIVE

The objective of the study is to ascertain ways of improving the process of (a) communication between the relevant public agencies and the local populations affected by changes in maritime services and facilities and (b) involvement of the latter in the planning and decision-making process relative to such changes. Questions considered for establishing the scope of the study were as follows: What should be the nature of such involvement? How should it be structured? Who should be involved? At what stage should it be inaugurated? Correlative to the basic objectives, the committee examined means to provide compensation for losses and measures to alleviate adverse effects on local populations in instances where such effects would occur as a consequence of the proposed changes.

APPROACH

The committee decided at the start to emphasize the process by which maritime facilities and services are planned and provided rather than to examine specific requirements such as need and location. The nature of a project was considered relevant only to the extent that appropriate public participation efforts might be affected. The analysis dealt with local communities affected by changes and the involvement of such population groups with industry and government in the planning and decision-making process concomitant with proposals for change. Questions arising from analysis of the process were answered in the context of citizen involvement, the structure of the process, the composition of the groups involved, and the time at which community involvement was started. A paramount need identified during the study was the structuring or designing of an effective communications and participation procedure that would reach out and respond to the needs of impacted parties.

In our assessment, we have drawn heavily from many actual operating experiences and their associated problems from around the country. Several examples are attached to this document as case materials and will be referred to several times throughout the discussion. We have also

reviewed a variety of existing regulations and procedures: (a) newly developed maritime-related programs, such as the Deepwater Port Act and the Coastal Energy Impact Program; (b) existing regulatory and permitting procedures at both the state and the federal level; (c) guidelines and procedures of a wide spectrum of federal agencies that are engaged in various public participatory and constituency-related programs; (d) techniques that lend themselves to the process of mitigation and compensation; and (e) strategies that have been applied to similar problems in some of the major ports of Western Europe and Japan.

CASE MATERIALS

The committee studied a number of maritime-related projects to gain an understanding of the problems of and the opportunities for citizen involvement and methods for the alleviation or accommodation of adverse effects. It was felt that these actual cases can serve to describe the principles of public participation, to clarify weaknesses, and to aid in developing mechanisms for implementing a more productive role for the general public in planning and decision-making for maritime projects.

The case materials are not case studies in the conventional meaning of the term. Rather they are outlines of situations that have arisen in the maritime services area, where public involvement was a relevant feature either because of its presence or because of its absence. The major purpose for including them is to show the type and range of situations where the question of public involvement (and accommodation) arises, and to draw insights from these situations and experiences to help in structuring participatory processes and compensatory procedures in the maritime services field.

Major emphasis in the case materials is directed to the following considerations:

1. The nature and timing of the contacts between the relevant public agencies and the local communities affected by development and operational changes.

2. The character of the involvement of such population groups with the primary initiator of the change and with the various governmental bodies in the overall planning and decision-making process.

3. Measures and techniques for mitigation and compensation in order to redress any imbalances of benefits and costs accruing to different constituencies.

The questions of particular interest to the committee during the evaluation of the case materials include the following:

- What strategies were used to identify and make contact with potentially impacted groups--particularly those adversely affected either directly or indirectly?
- At what stage in the predevelopment process, if at all, did an organized public participatory process get underway?
- What was the structure of that process and the nature of the groups involved?
- What lessons can be learned from practical operating experience that might offer useful guidelines applicable to the development process in future projects?

Detailed case materials appear in a later section of this report. We are presenting the following brief descriptions of individual cases to show how substantive information derived from them helped support the committee's findings.

Arco-Bayport Terminal

The Atlantic Richfield Company proposed a new tanker berth near Seabrook, Texas, on property leased from the Houston Port Authority. The U.S. Army Corps of Engineers, in exercising its own obligations to assess the public interest implications of the proposal before permit issuance, ruled that an environmental impact statement was not required because it viewed the residents' objections as being concerned only with land use--a primarily local discretionary issue.

This illustrative case brings up the knotty problem of "inverse condemnation"--the loss of property value through proximity to a new development without any recourse to compensation.

Barbours Cut Terminal

The Barbours Cut Container Terminal, launched in 1970, has been a financial success for the Port of Houston and for the booming Houston region. It has been something else again for the residents of 140-year-old Morgans Point, who lost a city park, a cemetery, a City Hall, and portions

of several streets and alleys along with sewer and water lines to the land needs of the new facility.

The trauma of a small town went comparatively unnoticed in the euphoria of a booming metropolitan area. But should it have?

Cove Point, Maryland, LNG Terminal

A liquefied natural gas (LNG) terminal was built in a remote sector of Calvert County, Maryland, on the western shore of the Chesapeake Bay. The State's interpretation of the "public interest"--an interpretation that had dictated the first steps in the development of a public park in the mid-1960's--changed sharply after Columbia Gas obtained options on a key parcel. The state became a strong proponent for the terminal in the Corps of Engineers' permitting process and was apparently not swayed by the pleas of environmental groups and local citizens. Safety problems--usually the central issue in siting of LNG facilities--were secondary to environmental and open space concerns.

Baltimore Dredging

The Hart-Miller Island dredge disposal site had the two-fold purpose of (a) handling dredged materials whose removal was vital to the operations of the Port of Baltimore and (b) providing a water-related recreational area open to the general public.

Including technical studies and public hearings, it took 71 months from initial site selection to permit issuance and 57 months from permit application to permit issuance.

Louisiana Offshore Oil Port (LOOP)

The Deepwater Port Act of 1974 provides for major modifications in the complex permitting process by placing final federal responsibility with one person (the Secretary of Transportation) and through imposing rigorous time schedules on the involvement of other relevant federal agencies.

The first active test of the techniques of the act occurred in 1976 with formal permit applications from LOOP, Inc., and Seadock, Inc. (off the Texas coast).

For LOOP, Inc., the tools available in the Deepwater Ports Act of 1974 may well have made the difference in terms of the practicality of this major undertaking.

The New England Energy Company Oil Refinery

During 1972-74, the New England Energy Company (NEECO) pursued detailed predevelopment steps for an oil discharge facility in Portland, Maine, and a 250,000 bpd (barrels per day) refinery in nearby Sanford for what might have been the first such facility in energy-parched New England. The eventual collapse of the project was attributable to the unforeseen financial difficulties of one of the members of the sponsoring consortium rather than to public opposition.

Swan Island Ship Repair Yard--Portland, Oregon

In November 1976 voters of the tricounty area surrounding the Port of Portland, Oregon, gave a 57.8 percent affirmative vote to an $84 million general obligation bond issue to expand the Swan Island Ship Repair Yard.

A Citizens Evaluation Committee, appointed by the Port Commission, sharply modified the original staff proposal and insisted that the new facility become self-amortizing as soon as possible instead of reserving the increased cash flow for future Port expansion. The citizen input was credited with substantially enhancing the acceptability of the basic proposal.

The Foreign Experience

Historical complacency about the environment in Western Europe and Japan gave way in the late sixties to an increasing recognition of the need for improved planning, effective controls and sanctions, and a higher level of communication among concerned constituencies.

The Japanese berth permit procedure for hazardous vessels is a case in point. The review process has been sharply strengthened and broadened in the past decade, based in part on actual operating experience.

SOHIO West Coast to Midcontinent Pipeline

The Standard Oil Company of Ohio (SOHIO), along with British Petroleum (BP), owns 50 percent of the anticipated output of the Alaskan North Slope petroleum development. SOHIO has proposed a 750,000-bpd oil discharge facility at Long Beach, California, tied to a 1,500-mile (2400 km) pipeline from there to Midland, Texas. Much of this daily throughput is surplus to the forseeable energy needs of the West Coast.

The California Air Resources Board has taken a firm stand on excess hydrocarbon emissions and the necessary trade-offs that are a precondition to state approval. The question of regional versus national interests becomes sharply drawn.

The Dredging Process

Two separate studies--one by a shipping industry group and the other by an environmentally oriented agency--arrived at substantially similar conclusions in their examinations of dredging and the permitting process in San Francisco Bay. The California experience has national applicability in the areas of jurisdictional overlap, the multiplicity of permitting agencies, and the duplication of public reviews and hearings.

THE FORMAT OF THE REPORT

During the course of our analysis, three major subject areas pertinent to our overall assignment were examined: (a) Perspectives on Maritime Development, (b) Public Participation and Citizen Involvement, and (c) Mitigation and Compensation.

We propose to set forth generalized conclusions with respect to each of the three key areas. In many instances the conclusions are predominantly statements of philosophy and general principle rather than logical end points drawn from an evaluation of empirical data. We have also made specific recommendations for remedial actions and improved procedures. The choice of these reflects the committee's conviction that certain basic changes are necessary and that the changes we suggest can in fact assist in the process of developing our needed maritime facilities and services in harmony with other needs.

MARITIME FACILITIES AND SERVICES

The U.S. maritime industry is in the process of vast technological and developmental change, not only with regard to waterborne cargo movement and associated hardware, but also with regard to onshore facilities (including cargo handling equipment), support services for offshore and outer continental shelf drilling and production, recreation and the like. Unquestionably, a problem is growing as the industry adjusts to meet the challenge of new and increased demands for maritime services while it is competing with other demands placed on the limited resources of the coastal zone. No facet of the industry is unaffected.

Changes arising out of new technology and the increased call for services include, for example, the following:

- New land use patterns, particularly in urban areas, that may be dictated by adjustments to the new technology.
- The residue of socioeconomic problems that may place heavy burdens on the urban community as the pace of technological obsolescence, both for physical facilities and for human resources, inexorably continues.
- The possibilities of significant environmental impairment, including exposure to pollution, congestion, and increased safety hazards, as well as the possibilities for substantial public benefits.
- The movement from multiuse facilities and the increasing trend toward specialization and compartmentalization in cargo-handling activities within the port--whether for liquid petroleum, edible oils, roll-on/roll-off, autos, or containerization.
- The new breed of sophisticated bulk petroleum and liquefied gas carriers--the most visible evidence of this nation's dramatically increased dependence on imported energy sources--which bring with them a whole new plateau of onshore requirements and protections.

Perhaps no segment of the maritime industry will be buffeted by the wind of change as much as the ports themselves. The days of the simple pier and cargo shed to serve the needs of the shipping industry are over. The

requirements for money to create advanced cargo-handling facilities for new generations of ships have risen sharply in the past decade and a half. These enormous financial requirements will press to the limit the ports' ability to finance them on a self-amortizing basis. Of necessity, they may turn to state and local funding sources for help. The way this issue is handled--whether and how the expensive new facilities are built--will deeply affect the economy of the metropolitan area. There is no question that the impacts of inadequate facilities can be severe and widespread.

Yet, it would appear that these pressures come at a time when the ports in many areas of the nation are no longer in the mainstream of the public decision-making process. Many of them are operated by separate authorities with limited access to identifiable constituencies. Many of them are located in already financially strained central cities whose other economic imperatives may claim a greater level of public attention and support. Priorities are being continually reshuffled. In the process, ports can find themselves slipping well down the list of prime targets for attention.

A case can be made that ports have a disproportionate outreach into the lives of people. Ports have to develop in an orderly and timely fashion. If they do not, the result can be economic stagnation with effects far beyond the mere visible symptoms on the waterfront itself.

Like other elements of the maritime industry, ports are under increasing pressure to reduce the impact of their operations on the environment. Additional funds will undoubtedly have to be allocated to pollution abatement programs--however cost effective--which by and large are not revenue producing.

Unquestionably, the economic and environmental pressures will continue to grow. The nation's port system has not yet been expanded to accommodate the giant bulk carriers that are coming into service--dry bulk ships with capacities between 125,000 and 160,000 DWT (deadweight tons) and oil tankers in the 500,000 DWT category. While there are solid indications that the LOOP project off the Louisiana Coast will become a reality by 1980, the complex negotiations that have characterized its predevelopment phase are a precursor of the difficult issues that will have to be dealt with in the years ahead. When the pressure for expansion of maritime services becomes irresistible, the problems associated with development will reach a new level of complexity.

An earlier committee of the Maritime Transportation Research Board, in its conclusions in Port Development in the United States (1976), had this to say about some of the difficult balances that are involved:

> Port efficiency cannot be judged by the availability of some apparently underutilized port facilities since some overcapacity is desirable for competitive flexibility and normally recurring peak loads.
>
> The market system cannot be the only decision-making mechanism in coastal zone management because it is difficult if not impossible to specify the acceptable economic costs for the conservation and preservation of desirable coastal environmental conditions and human values.
>
> Port planning must be undertaken with full awareness that the port is not operating in a vacuum and with the understanding of the interplay between the port and the institutional, environmental, and economic structures of the area in which it is located.

The primary concern of this committee is not with the nature of the physical facility or service itself but with the impacts on population that derive from it being located where it is. Thus the committee reached its conclusions about trends and emerging issues within that framework rather than within a predominantly technological one. Figure 1 depicts the interaction of maritime services with social and technological change.

THE PUBLIC PARTICIPATORY PROCESS

The past decade and more have given additional impetus to trends broadening and institutionalizing the public participatory process. What was an underlying theme of the Model Cities and Economic Opportunity programs has become a basic principle in a variety of significant federal programs.

The committee took cognizance of many developing efforts in the public participation process within the federal bureaucracy and in intergovernmental relationships throughout the nation. A few cases in point are listed below:

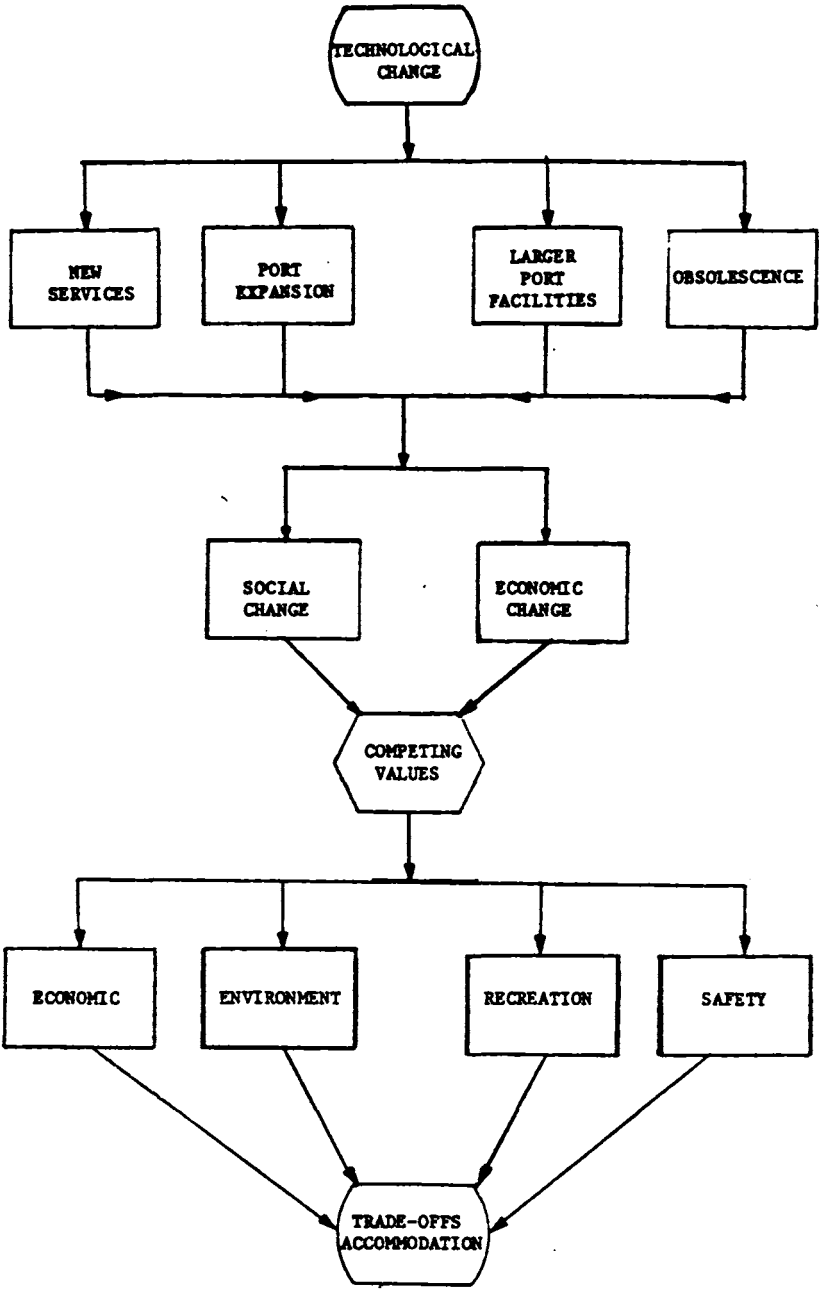


FIGURE 1

MARITIME SERVICES SCHEMATIC

- We have examined publications of the Environmental Protection Agency (EPA), the Department of Transportation, the U.S. Army Corps of Engineers, and others that have addressed themselves to this issue.

- We have noted the principles set forth in Senate Bill 270, The Public Participation in Federal Agency Proceedings Act, as introduced by Senators Edward M. Kennedy and Charles M. Mathias.

- We are conscious of the requirements and the operating experience of the section 208 Water Quality Program (EPA) and the Coastal Zone Management Program (National Oceanic and Atmospheric Administration) in the area of public participation. (In the case of the EPA program, 10 percent of the $400 million in planning funds is specifically allocated for the furtherance of citizen participation.)

- We have watched the evolution of the Community Development Block Grant (CDBG) program, which is the Department of Housing and Urban Development's chief device for disbursing special revenue-sharing funds back to the states, counties, and municipalities. In some instances, CDBG allocation has become an effective device for broadening the citizen role in the week-to-week conduct of local government.

- We have followed the efforts of the National Science Foundation (NSF) in its Science for Citizens Program to examine in an open-minded way the implications of NSF assistance to nonprofit organizations. In the words of one analytical report on the subject: "The potential NSF program is directed at funding technical studies that will allow nonprofit citizen organizations to marshal the expertise necessary to more fully participate in contemporary technological policy issues."

The committee's belief in the importance of the public participatory processes as they relate to the development of maritime facilities and services is supported by this evident governmental consciousness. We view public participation as a basic element of the total development scheme.

MITIGATION AND COMPENSATION

Developments in maritime services that generate benefits for metropolitan, regional, or even national constituencies are often accompanied by significant costs for specific local communities. An oil refinery may be of critical importance to an energy deficient region but, at the same time, may significantly reduce the quality of life in the immediate vicinity of the plant. The unfortunate consequences of these developments have often been acknowledged, but, with a few notable exceptions, responsible authorities have generally failed to deal adequately with the adverse impact on local communities. Moreover, recent developments in energy-related maritime facilities, particularly the prospective importation and regasification of liquefied natural gas, are likely to exacerbate this problem during the coming decades.

The difficulties associated with an inequitable distribution of costs and benefits are not unique to maritime services. Nonetheless, the committee believes that a solution to the problem as it arises in this area is imperative, primarily for reasons of justice and equity. No citizen should be required to shoulder an unequal share of the burden of providing important services to the general population. This burden, which includes the indirect environmental and socioeconomic costs of development, must be shared by all those who benefit from the service. Hence concrete efforts to mitigate the adverse impacts of developments and, if necessary, compensate those who suffer the consequences of change must be undertaken.

The fundamental interrelationship between public participation on the one hand and mitigation and compensation on the other is viewed by the committee as a central theme of this report. Without the impact identification information that flows from the participatory process, the ultimate mitigation and compensation measures that emerge are likely to be less acceptable and less comprehensive, with a loss of consistency and coherence for all involved.

A FINAL NOTE

This study has focused on the effects of change on people, rather than the environment *per se*. It deals with the way people see themselves as being affected by changes in maritime services, whether the introduction of facilities in new areas or the relocation of old or established ones. It has examined the social and economic impacts of new installations on humans and has considered the means to involve people in planning and decision making.

The committee is convinced of the need for creative new approaches for assessing and resolving the complex problems that will accompany the development of our future maritime services and facilities. One real test of that creativity will rest on the ability to improve and refine procedures assuring constructive public participation in the multifaceted decision-making process.

We hope that the recommendations resulting from the study will lead to a procedure for attenuating ill effects and will bring more light to the general debate surrounding development of the coastal zone for transportation services. In turn, such a process can lead to a fuller understanding of particular plans and a feeling of involvement by all concerned parties. In this way, resistance to progressive change perhaps can be minimized, and the costly delays that surround most programs relating to the coastal environment can be avoided.

CHAPTER II

PERSPECTIVES ON MARITIME DEVELOPMENT

The development of seaports in the United States in many instances predates the founding of the nation itself. At one time, seaports were the primary reason for establishing communities. But more often, now, they have become appendages attached to large urban centers and are the source of many problems as they interrelate with local neighborhoods and with the larger metropolitan area.

Until relatively recent times the United States enjoyed a degree of self-sufficiency--a comparative freedom from reliance on goods imported through our seaports from foreign nations. Until 1950, for example, the nation was the world's primary oil producer and thus imported little oil and few petroleum products. Much of the metallic ores and other key raw materials was supplied from domestic sources. While world trade has always been a significant factor in our economy, there has been for many decades a special orientation toward our vast internal markets that tended to obscure the importance of oceanborne commerce in the U.S. economy.

These conditions are changing, causing the United States to move toward an "island" economy. World trade, accompanied by a growing need for bigger and better domestic maritime facilities, now has become a key factor in the continued growth of the country.

The broad changes in United States trade patterns have resulted from the interplay of a variety of trends:

- Increased tonnages of commodities that traditionally move in world commerce.
- Development of new sources for raw materials that were once available from sources in the continental United States.
- Creation of new industries and new products, based in many instances on advanced technology, that have brought new types of

commodities and raw materials into the nation's foreign trade.

The changes in trade patterns and in goods carried have had substantial effects on the physical and technological character of our seaports. Some germane examples include the following:

- Containerization--pressure on urban land increases because of the need for more upland area for storage and stuffing/stripping operations. Further, there is a demand for more and wider access roads that take land and lead to disruption of neighborhoods and damage to the natural environment.

- Larger ships--deeper drafts require deeper and wider channels, thereby necessitating more maintenance dredging of existing channels and development of new ones, thus creating a problem of finding suitable locations for disposal of dredged materials. This problem is compounded by the need to obtain permits from various state and federal agencies regulating activities in navigable waters.

- Energy resources--the demand for oil and natural gas in the United States is growing while the nation's capacity to supply its internal needs through domestic production is declining. Even with Alaskan oil available, it is still necessary for the United States to import substantial amounts of its petroleum and natural gas needs. Most fuel imports arrive at U.S. ports in tankers or liquefied energy gas (LEG) carriers. These and offshore oil terminals are other examples of maritime transportation systems that will affect existing ports and undeveloped coastal areas.

- New hazards--entry of carriers of liquefied gases, chemicals, and other volatile products into ports will require new safety procedures for the amelioration of hazards, even though storage facilities and unloading terminals will be built in segregated areas of harbors or in new areas on the coast. Storage for crude oil unloaded from supertankers at offshore oil terminals will also have to be built. Oil storage tanks are a substantial source of hydrocarbon emissions, as are tankers during unloading and loading.

To meet the upsurge and demands of world trade and new conditions, American port and maritime interests have made sizeable investments in facilities during recent years. In the 1966-72 period, for example, total port-related capital expenditures in the United States amounted to nearly $1.1 billion. According to the Maritime Administration (MARAD) study that produced these figures, U.S. port interests were expecting to spend another $1.5 billion within a 1973-77 time frame.[1] (MARAD is updating these figures, but they were unavailable when this report was prepared.) Of the total amounts spent, in 1966-72, 39 percent was devoted to facilities for new shipping technology (container, RO/RO, barge carrier) and 30 percent for traditional general cargo (break-bulk) facilities. In 1973-77, although there was a slight drop to 38 percent proposed for facilities to handle new shipping technology or specialized cargos, proposed expenditures for traditional facilities showed a marked drop to 23 percent. The slack was taken up by bulk cargo facilities.

The port industry of the United States has responded, and continues to respond, to the new demands imposed by technology and increased world trade. However, ports, like other elements of our economy, create impacts in the course of their expansion and modification of existing facilities or in the construction of new ones. The economies of scale of large ships, for example, can be realized only if the ships can make efficient turnarounds. These are possible only if facilities--channels, turning basins, terminals, and land-side distribution systems--are of sufficient size. But larger facilities such as these usually result in new environmental effects and land use changes that may not be easily managed.

THE NATURE OF IMPACTS

Maritime activities, such as loading or unloading cargos, building or repairing ships, or providing transportation for vehicles and people, require many physical facilities that impinge on land, air, water, and people. The coastal zone, one of our most productive and complex biological systems, also supports concentrations of people and industry in many areas. Principally because the coastal margins were the first areas of the nation to be settled, development in these areas is older and farther along than in most inland areas. The interactions between maritime activities and their surroundings thus create problems both of quality in the physical environment and of the manner in which changes in these maritime facilities and activities generate cultural, aesthetic, social, and economic impacts.

The significance of the problems associated with a change is determined not so much by the nature of the change itself as by the relationship of the impacted parties to the change, in terms of social, economic, or financial involvement, and/or geographic proximity to the physical location of the change. For example, some changes may bring economic benefits or adverse impacts to the population of an entire region while others may affect only a small segment of a local population. A particular change may have a wide range of benefits or adverse effects imposed to varying degrees on various population groups. Some changes would involve federal action with attendant permit and hearing requirements; some would involve only local zoning plans; and others may have no screening or participatory processes of any kind.

The impacts resulting from changes in maritime services therefore may range from adverse to positive, depending upon the degree of interaction of several factors. These factors may include (a) the nature of the change, (b) the existing conditions under which the change takes place, (c) the type and degree of involvement or investment by each interested party, (d) the physical proximity of the parties to the change, (e) the type and degree of mitigation/compensation applied, and (f) the amount of social or physical change, irreversible or temporary, caused by the action.

The weight given these factors by impacted parties is dictated by an almost unlimited range of variables. The most significant of these can be categorized as sociopolitical, geographic, and economic. Obviously, in many instances there can be an interplay of all three types:

- Sociopolitical ties usually stem from an identification or affiliation with some group, such as

  (a) Private--individuals or small businesses.

  (b) Entrepreneurial--project developer, private port operator, or shipping firm.

  (c) Local government--city, county, state or public authority.

  (d) Federal or national--regulatory agency, funding agency, or national interest.

  (e) Public and special interest--environmental, chamber of commerce, union, or other advocacy group.

- Geographic linkages result from proximity to the change or jurisdictional conflicts and could be classified as

  (a) Local--impacting or benefiting only a local neighborhood adjacent to or near the project.

  (b) Regional--effects covering a multilocal jurisdictional area.

  (c) Statewide--project that affects an entire state.

  (d) Interstate--impacts covering parts or all of several states.

  (e) Federal or national--project that is of national interest, either because of benefits or impacts, or because federal funds are involved.

- Economic interests are those related to parties economically or financially involved in a project or parties experiencing a revised economic or financial status from the project. These interests might be classified as follows:

  (a) Direct involvement--project developer, port authority, project user, seller of project site, project builder, and employees or stockholders of some of these entities.

  (b) Indirect and induced--governmental bodies (taxes, services, utilities, physical infrastructures), nearby unrelated businesses and property owners, secondary and tertiary economic activities, the general public, property owners, and competing ports.

  (c) Uninvolved--person experiencing no noticeable change in economic or financial status.

The mixes and degrees of distribution of benefits and hardships obviously can have enormous variations. Often, there are sharp inequities, and special measures must be taken to redress these inevitable imbalances.

In response to this complicated situation, numerous federal, state, and local laws and procedures have been developed over several decades, with many coming in the last one. In most instances, multiple regulatory processes are involved, bringing in many agencies at all government levels from local to federal, with much room for redundancy, layered or overlapping authority, and interdepartmental conflicts. These hinder proposed maritime developments, many of which are undertaken on a fundamentally positive note.

ASSESSMENT OF HUMAN IMPACTS

An in-depth assessment of the human and cultural aspects of any proposed change must be conducted in order to identify properly the type of impact most likely to result, and to measure its magnitude in a meaningful way. By "in-depth," we suggest a broadening of assessments presently being conducted under the requirements of law (e.g., National Environmental Protection Act) to include better identification of the likely impact of a project on people.

To help identify all possible impacts, we have included a checklist in the form of a matrix (Figure 2), derived from U.S. Geological Survey Circular 645, "A Procedure for Evaluating Environmental Impact". The horizontal axis lists the most common actions or projects involving changes in maritime services; the vertical axis identifies activities and interests most likely to be affected by the changes. This matrix encompasses some 44 possible actions and 47 existing conditions. It does not purport to be completely applicable to every real-life situation; instead it is intended as an illustrative checklist that may be used on a local, regional, or national basis to "sensitize" developer and governmental agencies to the range of possible impacts.

The use of such a matrix or of a similar tool for the purpose of assuring a comprehensive analysis is only a beginning. For each interaction shown by a matrix, for example, further study must be given and a narrative description prepared to evaluate fully the significance of the interaction.

The following discussion gives some examples of the potential types of "people" impacts that might be expected from a change in maritime or maritime-related activities. The analysis required to identify the impacts adequately is a repetitive process taking into account a multitude of combinations. For the purposes of this discussion, only a four-level nest will be used in the examples; in actual

practice a substantive case may require a greater number of steps.

EXAMPLES OF IMPACT ASSESSMENT PROCESS

The first iteration used here is the sociopolitical grouping of impacted parties described previously. After that, the geographic proximity of the impacted party to the locale of the change and then the economic involvement of each with the project are examined as further interactions and combinations. The final iteration is to decide whether the impact is positive or negative. One point that needs to be clearly understood by the reader is that the combinations used as examples here are merely illustrative of general cases. An in-depth study will be needed for each substantive case encountered in actual practice.

Some of the impacts one might expect are the following:

- Private/local/direct--private individual adjacent to or near a project who might be directly involved through sale of property or otherwise:

  (a) Positive impact--sale of property at a profit and not required to relocate home.

  (b) Negative impact--forced to sell property and relocate home.

  (c) Positive impact--finds a better job by going to work at a new port-related facility.

  (d) Negative impact--new facility emits fumes that are a nuisance and reduce quality of life in adjacent residential areas.

  (e) Negative impact--industrial use of nearby land reduces value of privately owned property.

- Private/local/indirect--private individual in a nearby area whose property is not required and who cannot observe the new or improved facility from home:

  (a) Positive impact--lower overall tax bills.

INSTRUCTIONS

1- Identify all actions (located across the top of the matrix) that are part of the proposed project.

2- Under each of the proposed actions, place a slash at the intersection with each item on the side of the matrix if an impact is possible.

3- Having completed the matrix, in the upper left-hand corner of each box with a slash, place a number from 1 to 10 which indicates the MAGNITUDE of the possible impact; 10 represents the greatest magnitude of impact and 1, the least (no zeroes). Before each number place + if the impact would be beneficial. In the lower right-hand corner of the box place a number from 1 to 10 which indicates the IMPORTANCE of the possible impact (e.g. regional vs. local); 10 represents the greatest importance and 1, the least (no zeroes).

4- The text which accompanies the matrix should be a discussion of the significant impacts, those columns and rows with large numbers of boxes marked and individual boxes with the larger numbers.

SAMPLE MATRIX

	a	b	c	d	e
a					
b					

PROPOSED ACTIONS	A. LAND TRANSFORMATION AND ALTERATION	B. CONSTRUCTION	C. CHANGES IN TRAFFIC	D. PROCESSING	E. ENVIRON-MENTAL	F. OTHER
1. Wilderness and open spaces	1. Channel dredging	16. Tunnels and underground structures	30. Railway	35. Energy generation	40. Explosions	
2. Wetlands	2. Channel revetments	17. Dry bulk terminals	31. Automobile	36. Mineral processing	41. Spills and leaks	
3. Agriculture	3. Canals	18. Container yards	32. Trucking	37. Ship repair	42. Liquid effluent discharge	
4. Residential	4. Harbor dredging	19. LNG-LPG terminals	33. River and canal	38. Ship servicing	43. Stack and exhaust emissions	
5. Commercial	5. Cut and fill	20. Oil terminals	34. Pipeline	39. Product storage	44. Noise and vibration	
6. Industrial	6. Blasting and drilling	21. Industrial sites and buildings				
7. Other	7. Landscaping	22. Shipyards				
8. Structures in general	8. Erosion control and terracing	23. Marinas				
9. Transportation network (movement and access)	9. Marsh fill and drainage	24. Highways and bridges				
10. Utility networks	10. Dredged materials disposal	25. Railroads				
11. Education	11. Landfill	26. Transmission lines and corridors				
12. Health care	12. Surfacing or paving	27. Pipelines and corridors				
13. Commercial	13. Urbanization	28. Offshore terminals				
14. Residential	14. Piers and wharves	29. Undersea pipelines				
15. Waste disposal	15. Seawalls					
16. Barriers						
17. Corridors						

1. LAND USE

2. MAN-MADE FACILITIES AND ACTIVITIES

3. CULTURAL STATUS	18.	Cultural patterns (lifestyle)
	19.	Health and public safety
	20.	Employment
	21.	Population density
	22.	Traffic density
4. AESTHETIC AND HUMAN INTEREST	23.	Scenic views and vistas
	24.	Wilderness qualities
	25.	Open space
	26.	Landscape design
	27.	Unique physical features
	28.	Parks and reserves
	29.	Monuments
	30.	Historical or archeological sites
5. RECREATION	31.	Hunting
	32.	Fishing
	33.	Boating
	34.	Swimming
	35.	Picnicking
6. WATER	36.	Surface
	37.	Ocean
	38.	Underground
7. ATMOSPHERE	39.	Quality (gases, particulates, etc.)
	40.	Climate
	41.	Other
8. PHYSICAL PROCESSES	42.	Floods
	43.	Erosion
	44.	Subsidence and settling
	45.	Stability (slides, slumps)
	46.	Stress-strain (earthquakes)
	47.	Air movements
9. OTHER	48.	
	49.	
	50.	

(b) Negative impact--increased traffic congestion in the neighborhood or throughout the area.

(c) Negative impact--increased crowding and pupil/teacher ratios in neighborhood schools because of population growth due to jobs created directly and indirectly by the project.

(d) Positive impact--increased economic activity brought on by the project increases sales by person's employer and enables person to receive a larger-than-expected pay raise.

- Private/local/not involved--an individual residing near the proposed project who experiences no noticeable change in economic or financial status:

(a) Negative impact--construction of new container terminal a few blocks away results in strange-looking foreign crewmen wandering through neighborhood, making the family uneasy and fearful when an individual is on business trips.

(b) Negative impact--increased truck traffic in neighborhood.

(c) Positive impact--new container terminal is on land previously occupied by older, run-down structures thatwere eyesores.

- Private/regional/direct--a private individual living beyond the immediate or nearby vicinity of the proposed project who nevertheless feels some of the direct effects of it:

(a) Positive impact--owns land near the port needed for the project and sells it at an attractive profit.

(b) Positive impact--project permits importation of oil in very large crude carriers (VLCC's), and the consequent transportation saving is passed on in the form of lower prices for gasoline and heating oil.

(c) Negative impact--expansion of wharves in port eliminates public marina and boat basin, requiring movement of pleasure boat to an expensive private marina.

(d) Positive impact--general economic growth in area resulting from an expanded, modern port makes older homes more easily marketable.

- Private/regional/indirect--a private individual living outside the immediate vicinity of the project who is affected only indirectly by the project:

  (a) Positive impact--local employer prospers from generally lower prices on raw materials resulting from a new dry bulk terminal and puts off an impending layoff.

  (b) Negative impact--a new coal exporting terminal is supplied from a source which causes unit trains to be routed through residential neighborhood, causing noise, fumes, and increased hazards to residents, along with depressed property values.

  (c) Negative impact--a pipeline built to transport crude oil from a new VLCC terminal to inland refineries creates a potential hazard from spills and fires, and as a result, the key rate for fire insurance goes up making home fire insurance coverage more expensive.

- Private/regional/not involved--an individual not residing in the vicinity of the project who realizes no financial or economic loss or gain from the project:

  (a) Positive impact--new offshore oil terminal reduces risk of oil spills in the wetlands and helps preserve ecology of coastal region, thus permitting continued enjoyment of water-related recreation activities.

  (b) Negative impact--because of displacement by an expanding port enclave, many families relocate to peripheral areas beyond their neighborhood but use streets

through their area to commute to and from the port industrial area.

Every combination of the four multiple combinations will generate different impacts for each different project involved in a change of maritime services. Also, it becomes obvious from the few sample iterations performed above that the number of impacts, as well as their intensity, drops off as geographical distance from the project increases. Thus the use of the term "local populations" in connection with the committee's work becomes more meaningful as a result of such an analysis.

Development of ports and related maritime transportation activities is a continuing process, and well it should be in a dynamic economy. However, the protection of the rights of the individual as well as the good of the general public in such matters must be kept in mind at all times; otherwise, the process of port improvement becomes self-serving in many respects. Satisfying both of these goals therefore calls for the application of compromises and trade-offs applied in a sensitive manner with as much regard as possible for all concerned.

FEDERAL AGENCY INVOLVEMENT

Over 50 federal agencies are involved in 69 separate port environment activities, according to Edward Langlois, former Chairman of the American Association of Port Authorities' Committee XV--Environmental Affairs. They are depicted in a matrix of interrelationships in Appendix I.[2] The resulting interactions create 550 possible steps that must be taken to obtain permits in the port development and operations process.[3]

The principal or controlling agency in this process is the Corps of Engineers (COE) which has customarily performed the dredging of channels, harbors, and waterways for navigation purposes as part of its civil works function. The Corps' involvement in activities related to navigable waters can be traced to the Internal Improvements Act of April 30, 1824. It was not until the Rivers and Harbors Act of 1899, however, that the COE was authorized by Congress to regulate construction, dredging, and the discharge of fill or dredged material in or into the navigable waters of the United States.[4]

Only two agencies, the Environmental Protection Agency (EPA) and the Department of the Interior, have effective authority to veto permit decisions of the COE. The EPA authority stems from section 404 of the Federal Water Pollution Control Act Amendments of 1972 (FWPCA) in

the case of territorial waters, and section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA). The Department of the Interior has a constructive veto, based on the Fish and Wildlife Coordination Act of 1958 (16 USC 661-666c), that requires the COE to consult with the regional director of the U.S. Fish and Wildlife Service (FWS) and the responsible state official "whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened,..., or otherwise controlled or modified for any purpose, including navigation...."

Pursuant to the act, the Secretary of the Army and the Secretary of the Interior operate under a "Memorandum of Understanding," dated July 13, 1967 (see Appendix II), pledging mutual cooperation and binding the corps to consider fish and wildlife conservation, pollution, aesthetics, ecology, and the general public interest, as well as navigation, when acting on permits. Substantive issues unresolved because of objections by the FWS can be overridden only at the Secretarial level. Guidelines within which the FWS operates are found in "Review of Fish and Wildlife Aspects of Proposals in or Affecting Navigable Waters" (40 Federal Register, 231, pp. 55810-24, December 1, 1975).

According to a recent study by the San Francisco Bay Conservation and Development Commission, The Regulation of Dredging, the COE-FWS agreement has led to the provision of substantial environmental information to the Corps. The study also takes notice of claims that the agreement has given fish and wildlife agencies a de facto veto over projects, because "an applicant for a Corps permit must alter a project to meet objections or be prepared to wait until the dispute is resolved in Washington, which can take as long as a year or more."[5]

The National Marine Fisheries Service (NMFS) has played a role similar to that of the FWS. In 1970 it was transferred from the Department of the Interior to the Department of Commerce, so it no longer is covered by the Coordination Act or the Memorandum of Understanding with respect to its power effectively to veto a project. The NMFS does work closely with the FWS and, like it, has no time limits for submitting comments. Unlike the FWS, the Corps need not delay processing a permit pending the receipt of comments from the NMFS.

Another piece of legislation that empowers the NMFS and FWS to influence the Corps' permit program is the Endangered Species Act of 1973 (16 USC 1536). Section 7 calls for interagency cooperation to conserve and protect endangered and threatened species and their habitat or

ecosystems. The act requires federal agencies to take action to ensure that activities authorized by the specific agency will not jeopardize the continued existence of endangered and threatened species or result in destruction or modification of their habitat, as determined by the Secretary of the Interior.

The main thrust of section 7 is consultation, initiated by the federal agency whose actions may adversely affect species on an endangered species list, determined by the FWS pursuant to section 4 of the act.

According to rules proposed by the FWS (42 Federal Register 17, pp. 7868 et seq., January 26, 1977), the FWS on request for consultation will conduct a "threshold examination" to ascertain if an action will have an adverse effect, within a 60-day time frame. If positive, the agency will prepare a biological survey. Sixty days after receipt of the report, unless there are special circumstances, the FWS will issue a biological opinion, at which point the agency can determine whether or how to proceed with a program, in light of section 7 obligations.

Delay is inherent in these proposed regulations. In a discussion of comments received from federal agencies, the FWS mentions that one third of the respondents expressed the desirability of set time frames. This problem was acknowledged by the FWS and NMFS, and as a direct result they adopted a 60-day limit for threshold examinations and a 60-day limit for all consultations leading to a biological opinion. However, the two agencies also stated:

> Nonetheless, the FWS and NMFS would be abdicating their responsibilities under Section 7 if they were to commit themselves without exception to a time frame that in some cases would render inadequate biological advice. Therefore, the proposal leaves to agreement of the affected agency and the FWS or NMFS the time frame for completion of consultation on especially difficult actions.

(The Endangered Species Act Amendments of 1978, Public Law 95-632, extended the act to March 31, 1980, and created a seven-member Interagency Committee to review decisions by the FWS resulting in "irresolvable conflict," in order to determine if exemptions should be granted.)

The complexity of the permit process is illustrated by the case material, "The Dredging Process," which summarizes two convergent studies by (a) an industry group, California Marine Affairs and Navigation Conference (CMANC), and (b) an environmentally oriented constituency, Bay

Conservation and Development Commission (BCDC). (The findings of the latter were further corroborated by a MARAD report on dredging in San Francisco Bay.) The BCDC study was directed at the identification of state and federal problems in the procedural aspects of dredging, in response to complaints on the length of time required to obtain permits. It looked at the regulatory process from the aspect of (a) duplicated activities, (b) ambiguous requirements, and (c) apparently unnecessarily repetitive or detailed regulation. Within these three categories, several subjects were discussed: (a) multiplicity of agencies, (b) duplication of reviews for land use, water quality, and fish and wildlife, and (c) duplication of procedural steps, such as multiple comment solicitations (public notices), duplication of public hearings, and independent processing of applications by all involved agencies.

With respect to time delays in particular, the report stated: "Although most of the permit granting agencies involved in the regulation of dredging have time limits on their consideration of applications, most of the time limits are illusory because there are no sanctions imposed to compel agency performance." Table 1 (taken from the report) summarizes existing time limits and sanctions affecting agencies that regulate dredging. The case material, "Baltimore Dredging," illustrates a specific instance of the struggle between a local community and a port over a dredged materials disposal site.

The port industry has identified dredging and dredged materials disposal as the industry's paramount problem resulting from environmental regulation, in terms of both economic costs and possible foreclosure of development, and has called for the federal government to pay the costs of disposing of dredged material. (American Association of Port Authorities--Resolutions E-4 and E-15).

PROCESSING OF PERMITS

The Corps of Engineers' permitting program is tied to its overall planning process, which is described in Regulation ER-1105-2-200: Multiobjective Planning Framework. The regulation applies to all elements and field operating agencies with civil works responsibilities and adheres to the Principles and Standards for Planning of Water and Related Land Resources, promulgated by the Water Resources Council. The planning process itself is an essential element of several of the steps involved in the conception, authorization, and construction of water resources projects that are described in Appendix III.

TABLE 1

AGENCY TIME LIMITS

	Time Limits on Action (days)	Sanctions for Delay
Permit Granting Agencies		
San Francisco Bay Conservation and Development Commission	90	Permit issued by Law
California Coastal Zone Conservation Commission	150[1]	None
Corps of Engineers	None	None
California Tahoe Regional Planning Agency	None	None
Department of Fish and Game[2]		
Suction Dredging Permits	None	None
Streambed Alteration Permits	65[3]	None
Reclamation Board	None	None
Regional Water Quality Control Board	120	Can begin discharge subject to risk of subsequent disapproval
State Water Resources Control Board	1 year[4]	Loss of Certification Authority
State Lands Commission	180	None
Tahoe Regional Planning Agency	60	Approval issued by law
Commenting Agencies		
Environmental Protection Agency	Set by Corps Public Notice	Comments too late for use
Department of Fish and Game[2]	Set by Agency requesting comments	Comments too late for use
National Marine Fisheries Service	Set by Corps Public Notice	Comments too late for use
Resources Agency	Set by Agency requesting comments	Comments too late for use
United States Fish and Wildlife Service	None	None

1/ The California Coastal Zone Conservation Commission has a time limit consisting of a maximum 90 days within which a hearing must be held and a subsequent maximum of 60 days within which a permit decision must be made.

2/ The Department of Fish and Game has permitting authority under the Streambed Alteration provisions of Sections 1601-1602 of the Fish and Game Code and under the Suction Dredging provisions of Section 5653 of the Code. In all other cases, the department has only commenting authority.

3/ Fish and Game Code Sections 1601 and 1602 have a series of time limits for each step in the negotiation procedures to an aggregate maximum of 65 days.

4/ Section 401 of the Federal Water Pollution Control Act provides a waiver of the need for certification by the State Water Resources Control Board if it has failed to act within one year.

Source: San Francisco Bay Conservation and Development Commission, THE REGULATION OF DREDGING, San Francisco, CA, January 1976.

Authority for issuing or denying permits extends down from the Chief of Engineers through the Division Engineer to the District Engineer. The process begins at the District Engineer level, at which point an application is reviewed for completeness, a preliminary determination is made as to whether an environmental impact statement (EIS) is necessary, and a public notice is issued to obtain comments, usually with a 30-day time limit. The District Engineer, after receipt of comments, prepares a Findings of Fact to support a decision either to issue or deny a permit. The Findings of Fact will include either an Environmental Assessment, if it is decided that an EIS is not needed, or an EIS itself. If comments from the public notice indicate that an EIS is needed, a draft EIS must be prepared by the District Engineer, at federal government expense, and presented to the public and other governmental agencies according to Council on Environmental Quality and NEPA guidelines, which call for a public notice and 30-day commenting period.

The public hearing provides an additional method for obtaining input to aid in decision making at the District Engineer level. If it is not called for in the original public notice, any person can request a public hearing. If appropriate (the regulations state that a hearing should be held in case of doubt), a notice is issued calling for a hearing not less than 30 days following the date of the notice. All pertinent comments received at the hearing and on the draft EIS should be considered in the preparation of the Findings of Fact.

Objections to the decision of the District Engineer are referred to the Division Engineer, who will review the Findings of Fact and attempt to resolve outstanding matters. If the Division Engineer determines that the issuance of a permit is in the public interest, but there is continuing opposition by another federal agency, that protesting agency has 15 days, after notification of intent to issue a permit, to advise the Division Engineer of a desire to bring the problem to the departmental level. Then the permit will not be issued but will be forwarded to the Chief of Engineers for resolution, particularly "when it is proposed to issue a permit and there are unresolved objections from another federal agency which must be handled under special procedures specified in statutes or Memoranda of Understanding which thereby preclude final resolution by the Division Engineer." According to the regulations, "Every effort should be made to resolve differences at the Division Engineer level before referring the matter to higher authority" (33 CFR 325.8(c)).

Before a permit is issued, the Corps considers the impacts of a proposal on (a) the public interest, (b)

wetlands; (c) fish and wildlife, (d) water quality, (e) historic, scenic, and recreational values, (f) compliance with state coastal zone management programs, and (g) marine sanctuaries. With respect to the public interest review, costs and benefits are weighed to reflect the national concern for both protection and utilization of important resources. According to the regulations,

> all factors relevant to the proposal must be considered: among those are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs, safety, food production, and, in general, the needs and welfare of the people. No permit will be granted unless its issuance is found to be in the public interest.[6]

Other federal permitting agencies generally follow similar, but less detailed, procedures in their consideration of permit applications.

The need to deal with a plethora of federal, state, regional, and local agencies having separate permit requirements has been a source of complaint from applicants and public officials alike. As an analysis conducted by the Urban Land Institute shows, questions about coordination and consolidation have evoked these responses from participants:

- There are too many agencies now.
- A reduction in the number of agencies would be better, if we have to have them at all.
- There are too many organizations involved in environmental and land use controls. They hinder the exchange of information and delay the eventual resolution of various issues.
- There are too many overlaps, and it's never clear who has authority.
- Right now, it's totally chaotic trying to process an application through the various agencies with all their overlapping functions.[7]

Methods of several states for issuing permits were examined in the Urban Land Institute report and found to vary greatly. Four examples of proposed and actual systems for coordinating permitting programs are contained in Appendix IV.

Internal complexities of the permitting problem are wide ranging and difficult. Some of the case material, for example, suggests that this complexity has been a significant influence in the achievement of more equitable measures for mitigation and compensation--even as it was at the same time confounding or discouraging to the lay citizen in his efforts to provide input on a specific project.

The committee does not feel that it was within its mandate to consider this problem in the detail that it deserves. For the purpose of this report we will confine ourselves to noting the self-evident problems associated with the process. (We also call attention to an approach to better environmental and land use decision making recommended by the Urban Land Institute, contained in Appendix V.) We finally note that the recommendations stated in "The Dredging Process" case material enjoyed a dual constituency that on the one hand had a business/industry perspective and on the other a predominantly environmental one.

The complexity of the permitting process and the long lead times often associated with it are a two-edged sword. On the one hand, they tend to extend the process sufficiently that impacted parties have a greater opportunity to negotiate for legitimate protections and equitable techniques of mitigation/compensation. On the other hand, lengthy proceedings can often deter both continued and articulate participation by the affected citizen and development of a project yielding significant benefits. The committee's primary concerns are the accomplishment of legitimate projects as expeditiously as possible, while at the same time giving the greatest possible assurance of equity and fairness.

CONCLUSIONS

[Editorial Note. The conclusions that follow are based not only upon an evaluation of the research material available to the committee but also upon the composite of the committee's own independent judgment about the basic dynamics of real world situations. We are conscious of the fact that our assignment has required many value judgments that are not wholly provable through the systematic application of empirical data; without the imposition of these value judgment, the report would have far less meaning and usefulness. In instances where we have made specific reference to case materials, these references represent positive examples in some instances and examples of what not to do in others. They should be viewed in that context.]

1. Coastal land is under increasing pressure from new or expanding services and facilities to accommodate the requirements growing out of advanced maritime technology, such as containerization and compartmentalization of cargo handling. Expansion is also necessary to accommodate the trend toward larger vessels, with implications on channels, turning basins, terminal facilities, and land-side distribution. (Case materials: ARCO/Bayport; Houston Containerport; LNG Terminal; NEECO Refinery)

2. Changing technology and demand are rendering many existing port facilities obsolete and creating pockets of underutilization or nonutilization that can impact adversely on the surrounding communities unless the problem is acknowledged and addressed. (Case materials: NEECO Refinery; Swan Island Shipyard)

3. Obsolescence of port facilities, along with the high financial costs involved in keeping pace with the needs generated by technological changes, will require that careful consideration be given to concepts of coordination and of pooling or consolidation of port activities and revenues in metropolitan or regional areas. (Case materials: The Foreign Experience; NEECO Refinery; Swan Island Shipyard)

4. Activities and operations related to ports frequently raise issues that involve competing sets of values. Typical of such issues are the following:

(a) The effect of economic development and energy needs on the quality of the environment, as in the case of air and water pollution and congestion. (Case materials: ARCO-Bayport; Houston Containerport; LNG Terminal; LOOP; NEECO Refinery)

(b) Energy needs versus the safety of residents, as in the case of hazardous cargos (LNG, LPG, and chemicals) and increased traffic. (Case materials: ARCO-Bayport; LNG Terminal; SOHIO Alaskan Oil)

(c) Economic development versus recreational needs, as in the case of public access to coastal amenities. (Case materials: LNG Terminal; Baltimore Dredging)

(d) Economic status of residents with regard to declining land values or forced relocation. (Case materials: ARCO-Bayport; Houston Containerport; NEECO Refinery; the Foreign Experience)

5. The costs and benefits of port expansion or changes in port operations impact differentially on various individuals and groups. More adequate means are needed to assess costs and benefits and to provide ample opportunities for negotiations and trade-offs among all affected parties. (Case material: ARCO-Bayport; Houston Containerport; NEECO Refinery; SOHIO Alaskan Oil)

6. The failure to recognize and accommodate diverse interests and concerns evenhandedly and expeditiously in the overall public interest has the potential for serious economic and social disruptions of local, regional, and national importance. (Case materials: ARCO-Bayport; Houston Containerport; LOOP; NEECO Refinery; SOHIO Alaskan Oil)

7. The "lead agency" principle at the federal and state levels has in many instances played a constructive role in enlightening and facilitating the development process. With strengthening and elimination of ambiguities or prolonged uncertainty about lead agency designation, the lead agency concept could have a broader and more constructive impact. (Case materials: LOOP; NEECO Refinery; The Dredging Process)

8. There is a clear need for thoroughly understandable and enforceable time limits that can be applied to the varying commenting or permitting responsibilities of the relevant governmental agencies. (Case materials: LNG Terminal; Baltimore Dredging; LOOP; The Dredging Process)

NOTES

1. U.S. Department of Commerce, Maritime Administration, North American Port Development Expenditure Survey, U.S. Government Printing Office, Washington, D.C., March 1974.

2. Langlois, Edward, "Factors Limiting and Controlling the Operation of U.S. Ports Located in Estuarine Areas from the Standpoint of Pollution Control," from Fifth Annual Report of Committee XV: Environmental Affairs, Montreal, September 1975.

3. The Water Resources Council has published a directory of all agencies and organizations concerned with the management of water and related land resources, containing brief summaries of their functions. It also contains the office locations and addresses to which any notices affecting water resources development are to be sent. See Coordinating Directory for Planning Studies and Reports, U.S. Water Resources Council, Washington, D.C., March 1977.

4. Concern over navigable waterways is not a new concept. In 1675 Edward Andros, Governor of New York, is reported to have issued a law forbidding all persons "...to cast any dung, dirt, or refuse of ye city or anything to fill ye harbor or among ye neighbors or neighboring shores under penalty of forty shillings" (quoted from "Regulatory Permits Program of the Corps of Engineers," presented at New York University, Conference on Legal Implications of Hazards and Harms in Waterways and Ports, September 29, 1975.

5. The Resources Agency of California, San Francisco Bay Conservation and Development Commission, The Regulation of Dredging, p. C-10, San Francisco, CA, January 1976.

6. 42 Federal Register, 138, p. 37136, July 19, 1977.

7. The Urban Land Institute, The Permit Explosion, Coordination of the Proliferation, Washington, D.C., 1976.

CHAPTER III

CITIZEN INVOLVEMENT AND PUBLIC PARTICIPATION

One of the basic principles of a free government is public involvement in decisions that affect the lives of citizens in a particular jurisdiction. This principle is represented in the United States by the town meeting form of government that still flourishes in many small towns and cities, especially in New England. However, what was easy during the early days of the nation became more difficult as all forms of government--local, state, and federal--grew and affairs became more complicated. Concomitant with physical growth and the increase in societal scale, the role of the citizen in public decision making became less direct and more remote. As this development continued, many people came to feel they were being left outside the mainstream of decision making. This belief contributed to widespread disillusionment by the general citizenry with government at all levels and an attitude that elected officials and executive agencies were unresponsive.

Lately, the federal government has borne the brunt of the people's disillusionment and resentment. Antipathy toward "big government" has been a consistent strain of politics in the United States, as witnessed by the struggle over states rights versus federal powers since the first days of the nation under the Constitution. For three decades after the Great Depression in 1929, the federal government grew stronger in relation to the states, because the public recognized that only a powerful national government could deal with broad economic and international exigencies. However, during the 1960's the next generation discovered that the federal government tended to be unresponsive to local needs and that many decisions were being made without consideration of their impacts on local communities. A contributing factor is an apparent feeling by many citizens that elected representatives have abdicated their decision-making responsibilities to appointed officials who are not as directly accountable to the people.

Now, in the 1970's, fundamental concepts of federalism are changing, with a revived emphasis on local initiatives and local intervention in the decision-making

process. Public participation, implying a broader sharing of responsibilities in program design and implementation, is now an established trend and in many cases mandated by law. The need for increased governmental sensitivity is further underlined by the emergence of the so-called "taxpayer revolt," such as reflected in the large plurality accorded Proposition 13 in California, and associated efforts to place ceilings on state and local property tax rates in other areas.

It is important to recognize three sets of distinctions about public participation. The first is a distinction discussed by the committee at its earliest meetings, regarding the difference between parties interested in seeking public input for the purpose of making a decision on a particular site and those interested in developing public information to persuade the public of the benefits of a preselected site. A middle ground between these two points may be the key ingredient in mitigating the community impacts of a given site, once it has been selected, but there must be a genuine concern for the manner in which it can be made compatible with the community's concerns.

The second distinction regarding public involvement in the decision-making process differentiates between public input, or expression of attitudes, and the responsibility for making decisions. In many instances this choice is phrased in terms of local veto power; does a local unit of government, or an agency of government, have the right or the responsibility to deny a permit application on the sole basis of its particular interests, or must a balance of interests be weighed without the right of veto in any one sector? It has been argued in the context of nuclear power plant decision making that the entire public participation in the licensing process could be entirely eliminated if the right of local veto were substituted for lengthy public participation. Conversely, it is often felt that the cumbersomeness of public participation is exacerbated, through prolonged procedural mechanisms, when citizens attempt to make a nondecisive role an effective decision-making tool. Obviously, this strategy works best when one is interested in delaying or denying a particular permit, but the procedural or administrative point is significant, i.e., that procedural mechanisms for public input will become de facto decision-making apparatus when the public is effectively excluded from the actual decision process.

Finally, we note that the potential value of public participation may take two principal forms. One may represent an opportunity to express feelings, concerns, attitudes, or personal values of the impacted public, which have little or nothing to do with the technical merits of

the proposed development except as it affects the lives of individuals and their communities. This issue involves the value of public participation per se, the right of the public to express an opinion and possibly to protect its personal values. The other form can be characterized as informational. Public participation in modern industrial developments frequently contributes information, data, and understanding that have been omitted, overlooked, or suppressed by the project initiators responsible for consideration of the facts. In this sense, public participation in the technical review process has become an important element in sound decision making as issues become more complex and as the public in general becomes more concerned, more sophisticated, and more capable of technical analysis.

ELEMENTS OF PUBLIC INVOLVEMENT

Public involvement has many shades of meaning, from the simple act of voting to direct participation in the formulation and execution of government policy. It is not the intent of this report to provide a treatise or primer on public participation. A considerable body of literature on the topic has accumulated in recent years, and we would refer the reader to a sampling of it in the bibliography to this volume. Our objective here is to discuss the concept in terms of its general applicability to maritime facilities projects. The committee is convinced that an enlarged role for the public in the governmental process is essential to the effective functioning of a modern democratic society. What is not so easy to answer or agree upon is how and to what extent public involvement should take place to promote societal good as well as to protect the rights of the individual. No universally accepted formula has been devised to answer this question. Certain basic ingredients, however, have been identified as relevant to the process:

1. Consciousness raising--making the population aware that there is a decision to be made

2. Identifying concerned interests.

3. Understanding--providing them with the opportunity to pursue an in-depth study.

4. Comment and advice--seeking out the views of the affected population.

5. Response and impact--a perception by the citizen that individual views will be considered and can influence the decision.

6. Continuity and timeliness--the opportunity for advice and comment is not foreclosed after the decision has been formed.

(An example of the general principles of a public participation program is shown in Figures 3 and 4).

Consciousness Raising

Each issue has its own individual constituency. The constituency is normally a conglomeration of various minority interests, each with its own points of view (often parochial). The constituency will change issue by issue as people perceive how the particular issue affects or does not affect their interests. Often, interest groups comprising the constituency can be readily identified; in other cases, the constituency may be largely unknown.

The purpose of consciousness raising is to make blocs of diverse interests aware that an issue is to be decided and to ascertain whether they feel sufficiently affected to undergo the discipline that is involved in meaningful participation. Consciousness raising is generally conducted at the local or regional level, although some issues can readily take on a national character. If the latter, the issue is frequently posed by the federal government with participation by national organizations, usually with a Washington headquarters or office. When this occurs, local or regional interests are often reduced to a subsidiary role.

How does consciousness raising occur? The basic need at the start is communication--one-sided communication from either the group proposing the maritime services project or the government agencies who implement the form and substance of the regulatory process. Communication takes the form of newspaper articles, press releases, television or radio media coverage, and meetings with key constituency groups or with the leadership and/or representatives of potentially interested parties. In all these situations the communication should (a) outline the development proposal, (b) frame the likely issues by indicating prospective environmental, social, and economic impacts, (c) solicit further involvement, and (d) indicate how people can participate. The communication at this point should be widely based. Only rarely can one predict the particular interests that are likely to be participating. The purpose of the communication is to allow potential interests the opportunity of deciding whether or not to get involved in deciding an issue.

A great reduction in the number of interested parties is likely to occur by the end of the consciousness-

A Model For Public Involvement in the Planning Process

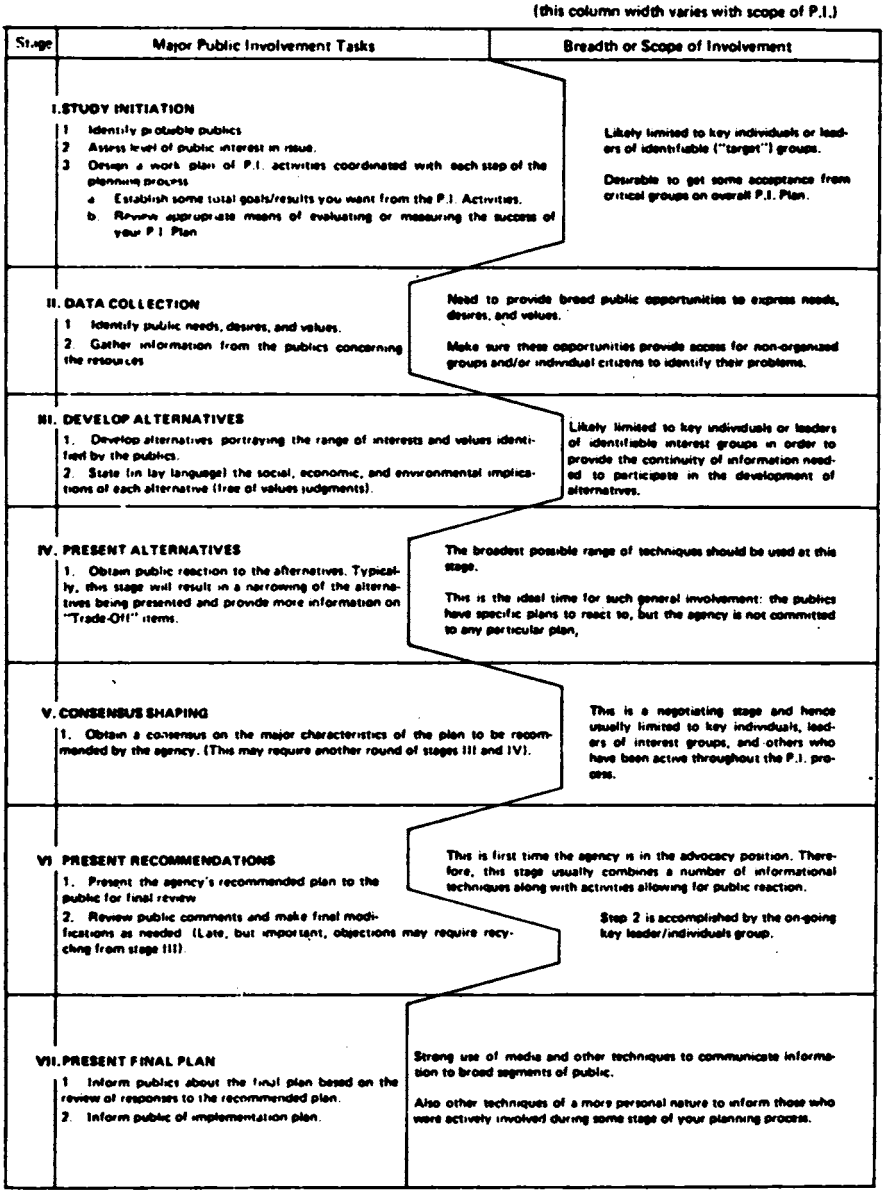


FIGURE 3

Source: Synergy Consultation Services, SYNERGY CITIZEN PARTICIPATION/ PUBLIC INVOLVEMENT SKILLS WORKBOOK, Cupertino, CA, 1972.

A Model For Public Involvement in the Planning Process

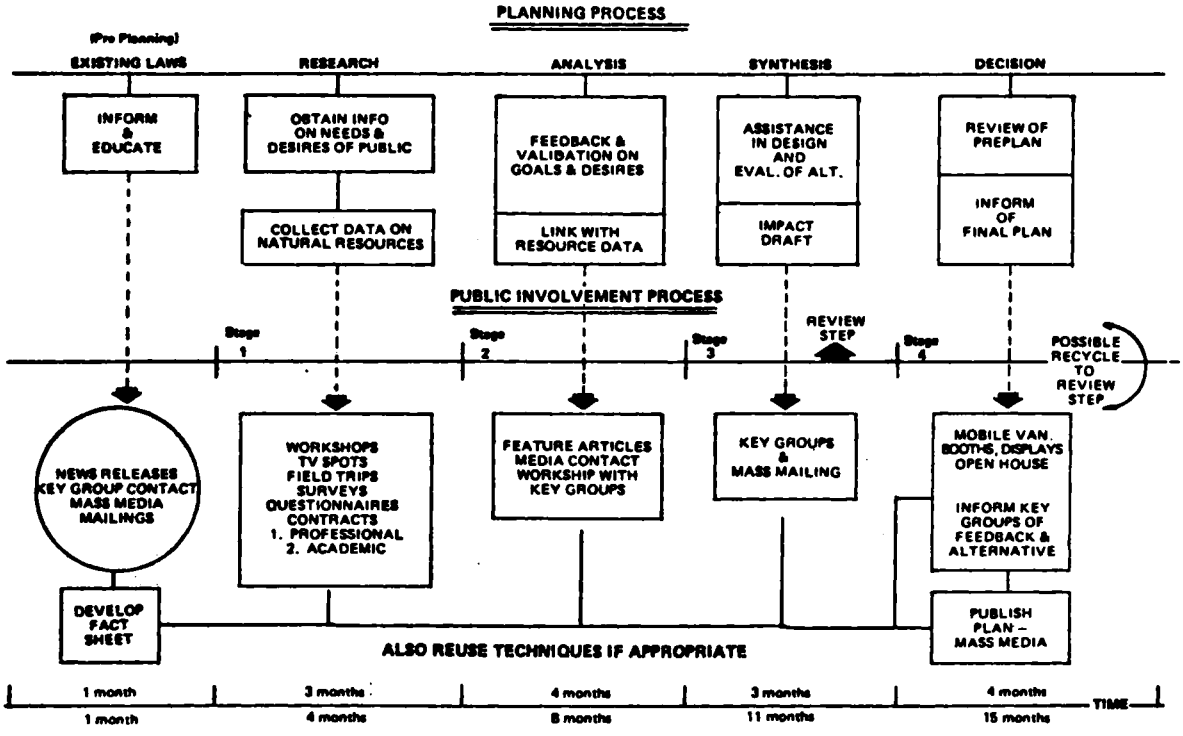


FIGURE 4

Source: Synergy Consultation Services, SYNERGY CITIZEN PARTICIPATION/ PUBLIC INVOLVEMENT SKILLS WORKBOOK, Cupertino, CA, 1972.

raising stage. That is one purpose of the communication efforts--to reduce the group only to those interests that have a particular stake in the final outcome. Because of this interest, they are potentially in a position to provide informed and constructive views during the decision process. The context of effective public involvement is a two-way street because it frequently demands major investments of time and effort on the part of the interested parties to understand the impacts and to examine the alternatives.

It is during the consciousness-raising phase that any effort to provide balanced or divergent points of view with respect to constituency membership must be undertaken. Hopefully, the communication process will promote the development of these various interests. Occasionally, it may not. However, if an opportunity has been provided and there has been no citizen or community interest expressed, then the parties involved can proceed in the belief that the public is satisfied or acquiescent. In the absence of an open communication process, this would be an unjustifiable assumption.

Identifying Concerned Interests

A problem looming large over any public participation process is that of identifying the legitimate constituencies. Every proposed change or project involving public facilities has a differing impact on various constituencies or parties. For some this impact is direct and immediate; for others it is less direct but nevertheless consequential; and for still others it may be remote and general. The proposed changes, moreover, may be beneficial to some and costly to others. The enlargement of a port, for example, may benefit the shippers and port operators directly by increasing their revenues, while the community and its residents may gain indirectly as a result of the increased economic activity generated by the new facilities. At the same time, however, the project may impact adversely on residents in the immediate vicinity because of additional traffic and increased noise and pollution levels.

The people or interests affected, whether beneficially or detrimentally, vary from case to case, depending largely upon the nature of the project and the particular situation and circumstances under which development takes place. Some projects, such as the construction of a terminal for handling oil shipments, involve numerous interests at the local, regional, national, and even international levels. In contrast, a proposal to construct a supplemental pier at a local port may involve only a limited number of interests and constituencies. If the acquisition of additional land through purchase or

condemnation is required, or safety and environmental problems are posed, the range of affected parties might be extended.

The relevant interests to be considered in dealing with questions of public involvement in planning maritime facilities may be grouped into five broad categories:

1. Public agencies--federal, state, and local--may be involved in maritime-related projects either as the operating or petitioning body (e.g., a local port authority seeking to expand its facilities), or as the regulatory or permit-granting agency (e.g., the Corps of Engineers issuing a dredging permit).

2. Private entrepreneurs, ranging from port operators to multinational oil conglomerates, may be the initiators of projects or may be affected by the maritime facilities proposals of other private companies or the actions of governmental agencies. In addition to the efforts of the individually affected companies, the broader interests of business and industry are represented by the various trade associations and chambers of commerce.

3. Public interest groups--environmental, conservationist, consumer, and the like--although not a new phenomenon, have multiplied and increased in influence in recent years. Established for the stated purpose of protecting the interests of the general public in various fields of concern, their intervention is usually limited to cases of broad significance. One has to be aware that such groups sometimes become more involved with their own self-perpetuation than with the key public policy issues.

4. Private parties who may be affected by a maritime project (e.g., the residents adjacent to a proposed new oil terminal) seldom have organizations to look out for their interests. They must depend upon governmental agencies, public interest groups, and their own ad hoc efforts (most often the latter), to articulate their concerns. Special mention should be accorded to the seasonal (summer and winter) residents of recreational areas, who have been important parties to siting disputes both on coast land and elsewhere. Typically, they pay substantial real estate taxes, but they often do not have voting rights in the community. Since this group usually is sophisticated, well informed, and wealthier than local residents, it often is able to obtain a hearing for its interests in environmental disputes.

5. Members of the general public, who may also be affected, but in a less direct manner, are in a position similar to that of private parties. They too must rely on

the permit-granting or regulatory governmental agencies and on public interest groups.

If one starts out with the premise, basic to a democratic society, that all parties potentially affected by the exercise of public power--in this case the construction of or approval of construction of maritime facilities--should be afforded ample opportunity to provide input to the decision process, the existing provisions for participation leave much to be desired. The private entrepreneurs and their representative associations have ample means to be heard. They have technical expertise and political influence at their disposal as well as long experience in functioning in bureaucratic settings. The major public interest groups are somewhat similarly situated. When they intervene in a decision, they usually provide an effective counterpoint to the private entrepreneural sector.

Public interest groups representing a broad clientele, however, cannot serve as substitutes for the involvement of other constituencies. For one, they cannot of necessity intervene in more than a limited number of cases. For another, they have a specialized focus and specialized objectives; their interpretation of the public interest may not always coincide with that of potentially impacted populations. The general concerns of major economic segments of a community in a proposed project are usually represented by special interest groups, such as labor unions and chambers of commerce. The position of these organizations may, and oftentimes does, conflict with that of the so-called public interest groups. Their stand may also conflict with the perceived interests of other segments of the population.

Desirable as the interplay of special and public interest groups may be, it is not necessarily an adequate substitute for public involvement as the committee perceives it. Community populations that are not organized--the poor and minorities in particular--may have concerns that differ from those of both the public interest organizations and the established special interest groups. They consequently find themselves without an effective means of either being made cognizant of the likely impact of a proposal on them or of making their voices heard, except, naturally, through a responsive public official. Those individuals or groups who will be directly impacted by a project are similarly disadvantaged. In many instances they also are without the resources or political weight to ensure adequate representation of their interests.

The problem of public involvement, in brief, is most acute with respect to the unorganized but indirectly affected population of the community or area and to the

individuals or parties who are directly impacted by proposed facilities. The mechanisms currently employed for involving these groups in the decision process, such as formal public hearings, are inadequate and in some instances lacking altogether. If we are to do more than pay lip service to the principle of public participation, means must be devised to ensure that all affected parties (particularly the unorganized and those directly impacted) are:

- identified and fully informed of the proposed project and its possible consequences for them;
- given adequate opportunity and positive encouragement to participate and have their views considered; and
- given sufficient technical resources and information to permit an adequate presentation of their case or position.

Understanding

After constituencies have been identified, efforts must be made throughout the decision-making period to keep them informed of technical, economic, and environmental developments. There are various ways to accomplish this. One is to establish advisory groups with representatives from a spectrum of interests who meet on a regular basis with the group responsible for the eventual decision. Another is to appoint a liaison from the decision-making agency to these interested groups to inform them continually about ongoing developments.

The mechanisms for maintaining communications may be as diverse as the people and situations involved, but the process of continued communication is essential to democractic government and sound decision making. Constituency representatives will be presumed willing to make the investment in time and effort to understand in detail the intricacies of the issue and its impact. Some education is likely to be needed, because not all constituency representatives will be starting from the same level of knowledge.

The citizenry at large should not be excluded even though their informational needs are much less than those of the constituency representatives and can often be satisfied by a combination of efforts. Constituency representatives can be charged with the responsibility for this informing process, or the developer/agency can regularly, through various media materials, provide information.

Opposition may be generated for many reasons, including surprise by an apparent fait accompli. In this case a combination of consciousness raising and understanding may often defuse potential opposition. Citizens may be more willing to accept the results of a process, even though they may initially disagree, when they believe that (a) it has been an open discussion process, (b) they had the opportunity to get involved (but did not), and (c) those who were involved and provided views did so from an informed standpoint.

Comment and Advice

Merely informing the constituency does not result in public involvement. The constituency will rapidly become frustrated if it believes it is not being involved. Constituency representatives will quickly point out that they perceive their role to be more active than that of mere listeners, given the time and effort taken to keep them informed.

A specific effort must be made to solicit views of the constituency representatives. This should occur regularly during the decision process. Views can be formally polled or informally received. The solicitation can be confined to the representatives themselves, or it can be expanded to the membership of organizations and groups through a vote or resolution. In some instances, unbiased sampling techniques may be a useful device and may help ameliorate the problem that arises when vocal minorities obtain a disproportionate voice in the decision-resolving process.

An often successful effort to promote involvement by constituency representatives is to give them responsibility for specific tasks. For instance, a subgroup of the constituency representatives might be charged with developing the economic impact aspects of the proposed development. Other subgroups would look at other areas. Assignment of responsibility is supported by the staff of the developer/agency, but the subgroup would be making determinations about the conduct of the study effort and its completion.

It is usually advantageous to inform and solicit the views of the constituent representatives in a group setting. This often tempers extreme viewpoints (especially when the constituency representatives view their responsibility as a common effort) and provides a basis for compromise of views and a workable consensus. In the effort to reach a consensus, the representatives must believe that all views are given a fair hearing and that no particular

point of view or interested party is receiving privileged or special attention.

Response and Impact

The ultimate test of successful public involvement is constructive change of an initial proposal, based on the degree to which the needs and views of the citizens have been reflected. Only rarely has a proposal been so well conceived that informed review and comment could not improve it. This is not to suggest that all the views of the various interests can be accommodated; to do so would be an unrealistic expectation.

In the course of forging a consensus, constituency representatives must believe their views are changing the nature of the decisions, for this will reinforce their involvement. Views that are incorporated should not indicate constant favoritism toward one interest or another because others will quickly suspect and resent such practice. The failure to incorporate any views will obviously frustrate the entire process.

Continuity and Timeliness

The constituency providing its views believes that its advice is sufficiently timely to influence the course and nature of decisions. Not only does it not want to be looked upon as a "rubber stamp" body, it also does not want alternatives foreclosed or prejudiced when it is finally ready to present its views.

Generally, an issue is decided through a series of incremental decisions--some major, some minor. The constituency is usually sensitive enough to the dynamics of any decision-making process to demand continuing involvement at each decision step. The developer or governmental agency must take this into consideration when the mechanics of working with constituency representatives are evolved.

It should be recognized that no single process of public involvement can be fashioned to meet all situations. Not only will the nature of proposed projects vary widely from case to case, but so also will the range and interests of potentially impacted parties. In one case an elaborate procedure for public involvement would be unrealistic and uncalled for; in another it would be wholly warranted. What is required is a flexible process and a readily adaptable mechanism that can be tailored to fit the various kinds of projects or changes sought. Roughly, such a design would entail:

- a set of guidelines or principles relating to public involvement;
- a list of general steps that are to be followed to ensure identification, notification, and involvement of the relevant constituencies;
- provisions for designating an appropriate lead or permit-granting agency, endowed with responsibility to ensure that the participatory guidelines are followed and the required steps executed;
- a procedure for providing, in appropriate cases, funds for technical assistance to impacted parties who are without adequate resources for meaningful participation; and
- a procedure for indemnifying parties adversely impacted by a project.

MECHANISMS FOR PUBLIC INVOLVEMENT

The committee's prime concern is with public participation as it relates to decision making for a development that will impact at the local level. Another aspect of decision making occurring at a higher level of the federal government deals with rule making and access to information. Often, many decisions affecting the general public have been made at meetings of regulatory agencies and the Congress behind closed doors--a procedure that can markedly increase suspicion that only special interests are able to influence governmental affairs. The problem of secrecy in the conduct of public business was expressed succinctly by Senator Lawton Chiles in connection with Senate Bill S. 260, providing for open meetings:

> All of us know of the feelings of alienation and frustration so many people feel toward government these days. As government has grown, it seems to have gotten farther away, out of reach of the people it was designed to serve. Government is not responsive enough; there is too little communication, too little understanding, and too little trust.
>
> I believe a good deal of this problem is due to the aura of secrecy that surrounds too much of our

> Government--in most cases totally unnecessary secrecy.[1]

In response to the growing awareness that the public's business should be conducted in public, Congress passed the Government in the Sunshine Act, (Public Law 94-409), in September 1976. The preamble of the act states:

> It is hereby declared to be the policy of the United States that the public is entitled to the fullest practicable information regarding the decisionmaking processes of the Federal Government. It is the purpose of this Act to provide the public with such information while protecting the rights of individuals and the ability of the Government to carry out its responsibilities.

At first glance the act appears to open wide the decision-making apparatus of government. A close reading of the act, however, shows the statement of policy to be somewhat misleading. The act does not give everyone the right to participate actively and applies only to collegial, or multiheaded agencies--i.e., agencies with two or more commissioners or officers appointed by the President. In essence, the Sunshine Act opens up the communications process and puts agency business on the record. The presumption is that meetings will be open; the burden of justifying closed meetings, allowed under the act, is on the agency. Among the features of the act is a provision for a public announcement of each meeting, an explanation in writing for closing a meeting or a portion of a meeting, and the preparation of a complete transcript of the proceedings for public access and use, except for those portions exempted. A fuller understanding of the intent of Congress can be found in the report that accompanied Senate Bill S.5, the Government in the Sunshine Act.[2]

Another piece of legislation aimed at encouraging participation on a more basic level is the Magnuson-Moss Warranty-Federal Trade Commission Improvement Act (Public Law 93-637), passed in January 1975. Guidelines for public participation have been issued by the Federal Trade Commission (FTC) to explain, in general, rule making for trade regulation.[3] According to these guidelines, the Improvement Act adds a requirement to section 553 of the Administrative Procedures Act (APA) that the opportunity for an informal oral hearing be provided by the FTC. Formerly, the APA required only:

- a notice of proposed rulemaking,
- an opportunity for interested persons to submit written data, views, and arguments, and
- publication of a general statement of the basis and purpose of a rule that is promulgated.

The Improvement Act prescribes requirements for the informal hearing, such as opportunity for rebuttal and cross-examination, either by an interested person or on the person's behalf. Public participation can take place in FTC rule making proceedings at three stages: during the informal hearings, at the time written submissions in response to a notice are accepted, and through submittal of posthearing comments before the rule goes to the commission for final action.

PUBLIC PARTICIPATION AND THE FEDERAL GOVERNMENT

Three current examples of the federal experience in public participation deserve brief analysis at this point. Two of them--the National Environmental Policy Act (NEPA) and the Coastal Zone Management Act of 1972 (CZMA)--will be dealt with in this section. A third--the Federal Water Pollution Control Act Amendments of 1972 (FWPCA)--will be considered in the succeeding section dealing with funding public participation.

National Environmental Policy Act (NEPA)

The act, under section 102(2)(C), directs all agencies of the federal government to include, in every recommendation or report on proposals for legislation and other major federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on:

(i) the environmental impact of the proposed action;

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented;

(iii) alternatives to the proposed action;

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and

(v) any irreversible and irretrievable commitments of resources which would be involved in the

proposed action should it be implemented.

The operant is significant federal action. This has been interpreted by the Council on Environmental Quality (CEQ) (Guidelines for Preparation of EIS, August 1, 1973) to include, inter alia, "new and continuing projects and program activities: directly undertaken by federal agencies...or involving a federal lease, permit, license, certificate, or other entitlement for use."[4] This rule is relevant to the maritime industry, especially with respect to ports and water-dependent industries reliant on permits from the COE for construction of facilities in navigable waters and for channel dredging. The CEQ guidelines, by virtue of Executive Order 11514, also provide for public involvement, calling for both circulation of draft environmental impact statements and agency procedures for "provision for public hearing on major actions with environmental impact." The CEQ requires, additionally, that section 102(2)(C) of the act apply to "further major federal actions having a significant effect on the environment even though they arise from projects or programs initiated prior to the enactment of the Act on January 1, 1970." (This is of special pertinence in the ARCO-Bayport case.)

The main thrust of the NEPA is to ensure that environmental considerations are taken into account during project assessment in addition to technical and economic arguments. There have been those who argue that NEPA contributes to considerable delay in the permit process, through lengthy review of proposed actions and litigations, with concomitant increases in costs. To put the litigation/delay issue into perspective, the CEQ analyzed the experience of 70 agencies with the environmental impact statement (EIS) process.[5] From January 1, 1970 to June 30, 1975, a total of 654 cases of litigation were either completed or pending. Of these, 363 cases were brought on grounds that an EIS was required, but not filed. Most of the remainder (291) challenged the adequacy of the EIS. During that 5 1/2-year period, 6,000 draft statements were filed; thus approximately 5 percent of the impact statements filed were challenged in the courts. (This litigation record contrasts with tens of thousands of federal administrative actions taken in the same period. More than 30,000 actions were assessed by federal agencies in fiscal year 1975 to determine whether they would cause significant environmental effects.)

In an attempt to streamline the process for preparing environmental impact statements, the CEQ issued draft regulations on December 17, 1977. Among the proposals are the following:

- Limiting the EIS to no more than 150 pages or 300 pages for a complex proposal.
- Eliminating technical jargon.
- Establishing a time limit for submitting statements.
- Requiring a short summary of all statements.

Obviously, the debate about the merits and demerits of NEPA and the environmental impact statement will continue. However, with respect to public participation at the level most closely related to the problems associated with changing maritime services, the NEPA and the relevant CEQ procedures outlined in its 1973 ruling[6] are a major step toward engaging greater and earlier participation in federal governmental decision making.

Coastal Zone Management Act of 1972 (CZMA)

The purpose of the CZMA (Public Law 92-583) is to encourage and assist coastal states to prepare and implement management programs to preserve, protect, and develop their coastal resources. The coastal zone is defined in section 304 of the act as "coastal waters, islands, and adjacent shorelands, which includes transitional and intertidal areas, salt marshes, wetlands, and beaches." The zone extends seaward to the outer limit of the U.S. waters (in the Great Lakes to the U.S. international boundary). The inland limit is somewhat flexible, extending "only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal water." According to a report of the Senate Committee on Commerce, the "definition was intended to allow for adequate coordination with the National Land Use Policy legislation (which did not become law). The intent of the Committee provides that the zone chosen by the state should be sufficiently large to permit effective management programs for the diverse land and water uses of the area, but not so large as to encroach upon land use management."[7]

The states are made the focal point for coastal management planning, but were not required to participate. The incentives to gain state participation are financial and institutional. The financial attraction is two-fold. Under section 305 of the act, states can obtain planning grants to assist them in developing a coastal plan--development grants. Once a plan is approved by the Secretary of Commerce, the state is eligible, under section 306, to receive annual grants for administering the program--administrative grants. The institutional incentive is more subtle in nature; once the federal government has approved a

state coastal management program, all federal projects as well as projects requiring federal licenses or permits must be consistent, to the "maximum extent practicable," with the approved plan. This "federal consistency" provision falls under section 307, which also provides an escape clause. The Secretary of Commerce, either at his own initiative or upon an applicant's appeal, can decide that an activity not allowed in the state's plan is consistent with the plan's objectives or is otherwise necessary in the interest of national security.

Clearly, the CZMA affects port development. Management programs must include (a) the boundaries of the coastal zone subject to the program, (b) the permissible land and water uses within the coastal zone, (c) an inventory and designation of areas of particular concern within the coastal zone, and (d) broad guidelines on priority uses (section 305). Additionally, regional and national considerations must be addressed in a management plan. The plan must demonstrate that local land and water regulations do not unreasonably restrict or exclude land and water uses of regional benefit (section 306(e)(2)) and must provide for adequate consideration of the national interest involved in the siting of facilities, including energy facilities, other than those that are local in nature (section 306(c)(8)).

Under the act's declaration of policy, the participation of the public, federal, state, and local governments and of regional agencies is encouraged (section 303(d)). Under section 306, the act enlarges on the requirement for full participation by principally affected agencies, and other interested parties, by making such participation a major precondition for approval of a management program by the Secretary of Commerce (section 306(c)). This requirement is expanded in the guidelines for Coastal Zone Management program development grants (15 CFR 920.14).[8]

How well those sections of the act are being implemented, plus the progress toward achieving a comprehensive coastal zone plan, are the subjects of a recent report by the General Accounting Office (GAO).[9] The GAO reviewed program activities in detail in California, Maine, Michigan, North Carolina, and Washington, and also sent questionnaires to the 34 eligible coastal states, receiving 31 responses from states with coastal programs. Additionally, the GAO reviewed activities of the Office of Coastal Zone Management and other federal agencies with interests in coastal management.

The report painted a rather gloomy picture of the progress of state coastal planning. It concentrated on (a)

lack of federal participation and state-federal coordination, (b) conflict between state management programs and proposed federal activities claiming to be in the national interest, and (c) delays caused by lack of local public and political support, inability to meet CZMA requirements for implementing a program, and local resistance to coastal zone planning efforts. To fulfill the intent of the CZMA, the report suggested that the Office of Coastal Zone Management help the states develop authority to control coastal resources, ensure participation by all levels of government and the public, and expand their technical information assistance.

The following two excerpts from the report highlight the problem facing state coastal planners and serve to sharpen the need for meaningful citizen involvement in planning:

> Apart from any resistance Federal agencies may have toward State development of management programs, the public and local governments have opposed coastal zone management planning efforts. In our opinion, resistance exists because (1) local governments may regard coastal zone management as an example of Federal-State interference in planning decisions traditionally made by localities and (2) the public, especially coastal landowners, contend that State management programs infringe on their private property rights and affect property values by restricting the uses to which their land can be put.[10]
>
> We believe the additional time and monetary incentives provided by the Congress through the 1976 amendments have alleviated the difficult problems facing many States in developing acceptable management programs.[11] However, as pointed out by NOAA, the political climate for programs which are perceived as environmental in their thrust and which involve additional governmental intervention and regulation is much more hostile today than when the Coastal Zone Management Act was passed four years ago. States that then had coastal zone legislation are now fighting repeal of that legislation. In no case has preexisting State coastal legislation been strengthened. Under these

> conditions, we believe that some States may not be able to overcome the obstacles created by local resistance and gather enough political support to obtain the implementing authority required.[12]

FUNDING PUBLIC PARTICIPATION

There are a number of evolving techniques for dealing with the special problems of funding to be used for facilitating the public participatory process. Three of these--the Federal Trade Commission Improvement Act, the Federal Water Pollution Control Act, and the Science for Citizens Program--deserve brief examination.

FTC Improvement Act

The FTC Improvement Act, under section 202(h), allows for compensation for reasonable attorney fees and other costs of participating in a rule-making proceeding. The guidelines in the Federal Register explain the statutory standards for compensation, including levels of compensation, definition of "interest," adequacy and necessity for representation, financial requirements, and eligible applicants. The latter are defined in section 202(h)(1) of the act:

> The Commission may, pursuant to rules prescribed by it, provide compensation for reasonable attorney fees, expert witness fees, and other costs of participating in a rulemaking proceeding under this section to any person (A) who has, or represents, an interest (i) which would not otherwise be adequately represented in such proceeding, and (ii) representation of which is necessary for a fair determination of the rulemaking proceeding taken as a whole, and (B) who is unable effectively to participate in such proceeding because such person cannot afford to pay costs of making oral presentations, conducting cross-examination, and making rebuttal submissions in such proceeding.

The FTC guidelines interpret "person" according to section 551(2) of the APA, which states, "person means an individual, partnership, corporation, association, or public and private organizations

other than an agency." The guidelines also include a section explaining the procedure for applying for reimbursement (42 Federal Register 114, pp. 30483-87, June 14, 1977).

Federal Water Pollution Control Act

Legislation closely following the principles of public participation expressed in NEPA is the Federal Water Pollution Control Act Amendments of 1972 (FWPCA), Public Law 92-500. In particular, section 101(e) stated Congress's policy as follows:

> Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged, and assisted by the Administrator and the States. The Administrator, in cooperation with the States, shall develop and publish regulations specifying minimum guidelines for public participation in such processes.

The Environmental Protection Agency (EPA), charged under the act with developing comprehensive programs for "preventing, reducing, or eliminating the pollution of navigable waters..." has carried out the principles of section 101(e) most extensively in implementing section 208 of the FWPCA. Section 208 establishes the development and implementation of waste treatment management plans on a state or areawide basis, for eventual construction of waste treatment works (defined in section 201 of the FWPCA).

The EPA is required to encourage public participation vital to its water quality management program and has allocated, on a guideline basis, $40 million for public participation, out of $400 million currently being expended for this water quality management planning program. This is the first instance, in the committee's knowledge, in which technical planning funds have been specifically earmarked for associated public participatory efforts.

Specific regulations establishing guidelines for public participation have been issued by EPA outlining procedures to carry out the letter of section 101(e): 40 CFR, Part 105 and 38 Federal Register pp. 22756-58, August 23, 1973. In addition, EPA has published a handbook to provide additional guidance to state and areawide agencies

for effective citizen involvement.[13] The rationale is perhaps best expressed by the following excerpt from the introduction to the handbook:

> The essence of the water quality management process is decentralized decision making--by citizens to influence planners, and by elected officials responding to electorates. Publics must be identified early and be urged to take active roles in the process to assure that fair and practical decisions are made. Local expressions of needs and values should be respected and should affect how planners study water pollution, as well as which strategies for cleaning up the water can be considered. Public input into water quality decision-making means that impacts will be better assessed, implementation will be feasible, and the costs and benefits to the various publics will be more palatable. Local elected officials are influenced by constituent pressure. If citizens have been able to influence decisions throughout the process, they will be more likely to accept those decisions and urge local officials to support the best implementable plan.

Science for Citizens Program

The principle of funding nonprofit citizen organizations or individuals to allow for fuller participation in governmental decision making took a controversial turn with a National Science Foundation (NSF) program known as "Science for Citizens." The controversy swirls around the prospect of the NSF's funding citizen groups or providing them with technical expertise to help them intervene more effectively in governmental decision making. Those who oppose the program view it as an extension of the adversary process, whereby groups supported by federal funds will be able to intervene to block programs authorized by the same federal government. Proponents of the program look upon it as a means to fund technical studies for nonprofit organizations in the same manner as any other grant program--and as a needed technique to assist the impacted citizen.

The deliberations in 1976 for implementation of the first year of the program led to disagreement between the House Committee on Science and Technology and the Senate

Committee on Labor and Public Welfare. The Senate favored a $3 million budget and direct funding of citizen groups to allow them to obtain "necessary technical expertise relating to the scientific and technical aspects of public policy issues." The House endorsed a budget of $300,000 and a policy for the NSF to "remain as far away as possible from direct assistance to citizens groups"[14] and to "concentrate on provision of educational and informational materials and not to become involved with citizen litigation or direct intervention in administrative proceedings."[15]

Eventually, a compromise program was funded by the NSF for $1.2 million for fiscal year 1977, to provide scientific and technical expertise to citizen groups through forums, workshops, and residencies for public service science. Money was made available "for research, writing, expert advice, and other activities addressed to the needs of citizens, and informal educational activities for adults such as seminars, workshops, and public lectures."[16] Requests for proposals were sent to "persons who wish to seek out information and make independent appraisals on science policy issues that are subject to public debate and are of concern to citizen groups."

The response to the request for proposal was much smaller than anticipated. Of approximately 17,000 mailings of the announcement for Public Service Science Residencies and Internships, only 176 applications were received, from which 29 were approved for funding. With respect to support for pilot programs to conduct forums, conferences, and workshops, out of about 10,000 notices, there were 74 formal proposals and 19 awards. According to a draft report of the NSF's Advisory Committee for Science for Citizens, the low response was claimed to be due to several factors: the program was new and not well known, timing was poor, and there is a limited amount of interest in pursuing public service science projects.[17]

The controversy over NSF funding of technical assistance for nonprofit citizen groups has been put in perspective in a study prepared for the NSF by Boasberg et al.[18] Pros and cons of such monetary support are analyzed in philosophical and substantive detail, especially with regard to the issue of intervention in adversarial proceedings. Included in the report is a treatment of government support of citizen participation giving a number of precedents. Mechanisms to facilitate greater public involvement are discussed, as are methods for underwriting participation by direct monetary assistance.[19] According to the report, financial support has taken many forms, such as grants for studies and research on technical and scientific public policy issues, financing for intervention in rule

making (the FTC Improvement Act for example) and recovery of attorney and witness fees.

A FINAL CAVEAT

The committee realizes that some critics may think that too much reliance is being placed on public participation as a fundamental element of the decision-making process. In fact, we are fully cognizant of its possible pitfalls and its problems; we do not regard it as a panacea.

The process can invite disproportionate influence from small but vocal minorities. Too many citizens assume they can rely on their elected or appointed officials to be reasonable. They leave the public hearings to those with more extreme views. The vast majority, with more moderate positions, often fail to realize that by their silence or their noninvolvement they are creating vacuums that may be filled in ways that are counter to a larger public interest.

There are no ready and certain answers to these self-evident problems. They will continue to exist in varying degrees no matter how conscientious and energetic the public involvement efforts may be.

On balance, however, the committee is persuaded that the lack of a sensitized public participatory process constitutes a far less promising and equitable strategy. The committee believes that reasoning and negotiating within a framework that is characterized by early discussion and open exchange can more often than not provide real benefits to the developer/initiator and the affected citizen alike.

CONCLUSIONS

[Editorial Note. The conclusions that follow are based not only upon an evaluation of the research material available to the committee but also upon the composite of the committee's own independent judgment about the basic dynamics of real world situations. We are conscious of the fact that our assignment has required many value judgments that are not wholly provable through the systematic application of empirical data; without the imposition of these value judgments the report would have far less meaning and usefulness. In instances where we have made specific reference to case materials, these references represent positive examples in some instances and examples of what not to do in others. They should be viewed in that context.]

Rationale for Public Participation

1. The public participatory process can be viewed as a necessary part of orderly democracy as well as a means of assuring comprehensive consideration of all significant costs and benefits. (Case materials: ARCO-Bayport; Houston Containerport; NEECO Refinery)

2. The public participatory process is an essential device for resolving competing or diverse interests and for the adjudication of the inevitable imbalances in the distribution of costs and benefits among affected parties. (Case materials: ARCO-Bayport; LOOP; NEECO Refinery; Swan Island Shipyard; SOHIO Alaskan Oil)

3. There is evidence to argue that public participation can provide measurable advantages to the project initiator, such as (a) early assessment of site feasibility; (b) enhanced credibility in the governmental review process; (c) improvements in project design and operation stemming from better knowledge of local conditions; (d) clarification of the potential trade-offs in the public and private financial mix; (e) reduction in the likelihood of lawsuits and injunctions; and (f) early identification of latent socioeconomic impacts that may later have to become the subject of mitigation and compensation. (Case materials: LNG Terminal; NEECO Refinery; Swan Island Shipyard; SOHIO Alaskan Oil)

4. While the necessity for public participation has long been recognized and typically embodied in the public hearing process, improvements are needed in the techniques for involving all relevant parties, particularly in the period preceding formal public hearings. These parties should include (a) initiator, private or public, (b) affected and duly concerned citizens and their representatives, and (c) relevant regulatory authorities. (Case materials: ARCO-Bayport; Houston Containerport; Baltimore Dredging; LOOP; NEECO Refinery; Swan Island Shipyard; The Foreign Experience)

Key Elements of Public Participation

5. The strategy of public participation can be consciously structured to provide a means for identifying all affected constituencies and for actively and comprehensively developing communications links with them. (Case materials: LOOP; NEECO Refinery)

6. Distinctions can be drawn between the planning process and the permitting process, recognizing that the former is dependent largely upon the exercise of good faith on the part of all involved parties, while the latter is

more nearly amenable to the imposition of specific legal and regulatory requirements. While concerned with both elements of the process, the committee has a particular interest in what does or does not happen in the prepermitting stage of the development. Most effective processes have begun in an open, two-way fashion as early as practicable in the course of the development. One must recognize that some elements of the predevelopment period, such as ownership or option of core land requirements, may not lend themselves to an open process. (Case materials: Houston Containerport; LNG Terminal; LOOP; NEECO Refinery)

7. In many instances, fundamental disparities in both technical and financial resources available to the initiator and impacted citizens groups may impair the credibility of the public participatory process. (Case materials: ARCO-Bayport; Houston Containerport; LNG Terminal; NEECO Refinery)

8. Citizen task forces, informal contacts involving affected citizens and local public officials, and similar techniques have often proven to be valuable tools prior to the formal public hearings. (Case materials: LOOP; NEECO Refinery; Swan Island Shipyard)

Public Participation and the Government Regulatory Process

9. In some instances, duplicative permitting procedures provide opportunities for obstructionism that, in turn, tend to discourage private investment as well as meaningful dialogue. Careful consideration must be given to ways in which this process can be simplified and streamlined, while at the same time preserving the fundamental societal protections that need to be maintained. (Case materials: The Dredging Process)

10. Government agencies with either commenting or permitting obligations can enhance the viability of public involvement by widely disseminating departmental policies and guidelines that will affect a given decision. Such material should include a clear statement of review criteria and built-in biases (legally imposed or otherwise) that will underlie the review process. This material can be made readily available to potentially impacted or legitimately concerned citizens. (Case material: ARCO-Bayport; Houston Containerport; LNG Terminal; LOOP; NEECO Refinery)

NOTES

1. United States Senate, Committee on Government Operations, Government in the Sunshine, S. 260, U.S. Government Printing Office, Washington, D.C., 1974, p. IX.

2. United States Senate, Committee on Government Operations, Government in the Sunshine Act, to accompany S. 5, Washington, D.C., 1975.

3. Federal Register, pp. 30480-83, June 14, 1977.

4. Code of Federal Regulations, Title 40, Chap. V, Part 1500.5.

5. Council on Environmental Quality, Environmental Impact Statements, p. 31, March 1976.

6. 38 Federal Register, pp. 20550 et seq., August 1, 1973.

7. U.S. Congress, report of the Senate Committee on Commerce, National Coastal Zone Management Act of 1972, p. 9, Washington, D.C., April 1972.

8. 38 Federal Register, pp. 33046-47. November 29, 1973.

9. U.S. General Accounting Office, The Coastal Zone Management Program: An Uncertain Future, December 1976.

10. Ibid., p. 27.

11. (Editorial note: The law was amended in 1976 to extend funding under section 305 until 1980 and increase the federal share of program development grants from two thirds to 80 percent.)

12. Ibid., p. 34.

13. Environmental Protection Agency, Public Participation Handbook for Water Quality Management, Washington, D.C., June 1976.

14. Boasberg, Hewes, Finkelstein, and Klores, National Science Foundation, Implications of NSF Assistance to Nonprofit Citizen Organizations, p. 5, Washington, D.C., February 1977.

15. Quoted in Science, Vol. 194, October 1976.

16. Science Trends, Vol. XXXVIII, No. 12, April 1977.

17. Science Trends, Vol. XXXVIII, No. 22, October 1977.

18. Boasberg et al., op. cit.

19. The Environmental Protection Agency has awarded 12 grants and contracts totaling approximately $1.1 million to nonprofit organizations in order to increase the public's awareness of water quality management. Groups funded are as follows: League of Women Voters; National Association of Conservation Districts; National Association of Counties; National League of Cities; Association of New Jersey Environmental Commissions; National Recreation and Parks Association; Isaac Walton League; National Wildlife Federation; National Association of Regional Councils; Urban Land Institute; NACO/NLC/ICMA; and Urban Environment Conference.

CHAPTER IV

MITIGATION AND COMPENSATION

Three terms commonly used in conjunction with attenuation of adverse effects from any source are accommodation, mitigation, and compensation. Accommodation can be defined as a process of reconciliation or compromise for the adjustment of differences. The results of workable compromise are compensation and mitigation, terms that are used somewhat interchangeably but that are distinct. Mitigation implies an act of making something less severe, whereas compensation is defined as an act of offsetting an error, defect, or adverse effect, usually by something that constitutes a payment--real or in kind.

The overriding concept in the process of ameliorating adverse impacts is an evaluation of the costs and benefits associated with any project. Ideally, there should be a balance between aggregate costs and benefits within a national, a regional, and a local context. But this balance is often difficult to achieve. For example, how does one equate the effect of noise pollution or truck congestion in a localized area with the economic implications of a "no-build" decision to a broader region dependent on a proposed facility? While the answers cannot be clear cut, the basic need for some balance is a compelling one.

The problems associated with construction of transportation facilities have been addressed in a study prepared for the Department of Transportation (DOT) by Urban Systems Research and Engineering, Inc.[1] The study deals with "outside the right-of-way" activities--highway noise specifically--and suggests a program to internalize adverse effects in order to improve social and environmental quality and reduce uncompensated economic effects.

An excerpt from the report provides a philosophical statement and establishes a rationale pertinent to our discussion of accommodation:

> It is now understood that, even in the case of transportation facilities which confer net benefits on the broader community, many individuals and institutions may suffer real economic welfare losses as a result of the externalities produced by these facilities. These losses will be only partially eliminated by the improvements in community social and environmental quality generated by this policy. In many cases, complete elimination of all the adversely experienced impacts of transportation facilities would be prohibitively expensive. The persistence of differentially-distributed adverse effects from transportation facilities, however, violates the principle that states that the cost of governmental action should be defrayed through a system of taxation which requires equal sacrifice from each individual. While there have been varying interpretations of the equal sacrifice principle in the development of schedules of progressive taxation, there has been no disagreement on the basic premise that individuals in equal economic circumstances should be treated equally. When, however, residual external impacts persist in the construction and operation of transportation facilities, those adversely affected absorb a disproportionate share of the total burden of these facilities. The inequities introduced by this system are particularly severe when the adversely impacted individuals are geographically concentrated, as is sometimes the case in transportation.

RATIONALE AND SIGNIFICANCE

There is a need for recognizing initially that most changes in maritime services will be confronted with substantial and legitimate differences of interests generally unable to be wholly adjudicated to everyone's satisfaction. Uniquely affected interest groups are capable of frustrating the decision process and preventing a result that may be in the overall public interest by actions that delay and totally deny decisions reached after due deliberation. Whatever the final result, society should not

be insensitive to real hardships that can affect people's lives in a local and poignant way even though larger-area public interest may argue for a particular course of action.

The committee is concerned with the accommodation of those whose interests are harmed even when decisions are constructively reached and efficiently implemented. This accommodation takes place through concrete measures to alleviate the impact on the affected constituencies. It also is carried out through compensation for those unavoidable impacts, going beyond mitigation for economic, technological, or practical reasons, that are not balanced by commensurate benefits.

Alternatives (and "do nothing" is always an alternative) that provide different mixes and degrees of benefits and hardships must be explored. For each alternative, people who are impacted by hardships may draw only partial benefits and may perceive, or actually receive, few of the benefits reaped by others at the local, state, regional, or national level. Attempts to compensate for, control, or mitigate unavoidable impacts not commensurate with benefits for particular individuals or groups all too often are overlooked, insufficient, misdirected, or unenforceable.

CURRENT STATUS

Mitigation and compensation are not new concepts in the regulation of maritime projects. Formal recognition is contained in the Fish and Wildlife Coordination Act (FWCA), which aims to protect fish and wildlife from encroachment by water development projects. More recently, the 1976 Coastal Energy Impact Program (CEIP) amendment to the 1972 Coastal Zone Management Act (CZMA) set provisions for mitigating environmental impacts and for compensating certain socioeconomic impacts, stemming from "coastal dependent energy facilities."

Although the FWCA appears mainly concerned with the ecosystem, and the CEIP with environmental and recreational resources and new or improved public facilities and services, these acts provide a useful counterpoint to the lessons drawn from the committee's case materials.

The Fish and Wildlife Coordination Act

The Coordination Act, as amended (16 USC 665-667) states as policy that wildlife conservation should receive equal consideration and be coordinated with other features impinging on the planning of water resources development projects licensed or constructed by federal agencies. The involved agency is required to consult with the U.S. Fish and Wildlife Service (FWS) and its counterpart agency in the particular state where construction will take place, with a view to preventing loss and damage to wildlife resources as well as providing for their improvement. Wildlife and wildlife resources are defined as "birds, fishes, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent."

Under the act, the FWS will determine possible damage to wildlife resources, the means and measures to prevent the loss, and measures for mitigating or compensating for any damages. These findings become part of the project report of the federal agency licensing or constructing a water resource development. Included in the project plan of the constructing agency are costs of providing and maintaining means and measures to prevent, mitigate and compensate for fish and wildlife losses or damages. These measures are considered an integral part of the project cost and include (a) land acquisition, (b) facilities specifically recommended to ameliorate possible degradation of the ecosystem, (c) project modifications, and (d) modification of project operations.

The recommendations by FWS to mitigate fish and wildlife losses as determined by its studies cover:

In-kind reimbursement

- alteration of project design
- stream flow regulation
- incremental filling

Money reimbursement

- provision of benefits for wildlife resources
- acquisition of additional land for wildlife management

Guidelines of the FWS (Review of Fish and Wildlife Aspects of Proposals in or Affecting Navigable Waters) call for denial of a federal permit for any proposed project not

properly designed or located to avoid preventable significant damage to fish, wildlife, and/or other environmental values.[2] With respect to unauthorized work in navigable waters, the FWS can request the permitting agency to institute legal enforcement of the pertinent laws (River and Harbors Act of 1899 and the Federal Water Pollution Control Act Amendments of 1972 (FWPCA). For after-the-fact permit applications where significant environmental damage has occurred, the FWS determines the need and possibility for restoration and compensation of damages to fish and wildlife, their habitat, and related human use values. To implement mitigation measures, applicants can be required to furnish a performance bond if there appears a risk of nonperformance.

The Coastal Energy Impact Program[3]

In June 1976 the Coastal Zone Management Act of 1972 was amended to increase federal and coastal zone planning and to create a Coastal Energy Impact Program (CEIP). The CEIP, contained in sections 308-310 of the CZMA, is authorized to dispense up to $1.2 billion in loans and grants for 10 years. The goal of the program is to help coastal communities accommodate to the impacts resulting from new or expanded coastal energy development, including activity associated with:

- outer continental shelf (OCS) oil and gas exploration and production
- liquefied natural gas (LNG) transportation, conversion, treatment, transfer, or storage
- oil, natural gas, or coal transportation, transfer, or storage

Coastal energy activities are defined as those involving the siting, construction, expansion, or operation of any equipment or facility and having technical criteria that necessitate location of such physical facilities "in or in close proximity to, the coastal zone of any coastal state." Energy facilities are further defined in the act (section 304(5)) to include electric generating plants, petroleum refineries, oil tank farms, crew and supply bases, and petroleum transfer facilities, which include pipelines and deepwater ports.

Criteria necessitating a location in the coastal zone are limited to:

- dependency on coastal waters (offshore oil service bases)

- safety (LNG regasification)
- proximity to oil or natural gas fields (pipelines)
- pocation of markets
- ltate and federal siting regulations
- type and amount of required land
- competitive uses for environmental and recreational resources

The CEIP (under section 308(a)(1)) provides financial assistance in the form of grants, loans, and bond guarantees to help coastal states accomplish the following:

(a) planning for the social, economic, and environmental consequences of new energy development in the coastal zone;

(b) construction of public facilities and provision of public services needed because of new employment and increased population resulting from new or expanded coastal energy activity;

(c) repayment of loans or guaranteed bond obligations if the expected revenues from increased coastal energy activity fail to materialize; and

(d) prevention, reduction, or amelioration of unavoidable damage to or loss of valuable environmental/recreational resources resulting from past or future coastal energy activity.

The Office of Coastal Zone Management, the administering agency for the CEIP, has adopted an operating policy to implement the program which embodies these principles:

- Those involved in developing energy resources should pay the full cost of development, including socioeconomic costs that can be attributed to it.
- Because new energy activity benefits the entire nation, localized fiscal and environmental costs should be carried by the federal government when they cannot be directly assumed by end users.
- The federal role remains complementary in nature, with primary responsibility for

planning for and providing public facilities, services, and mitigation of environmental damage belonging to coastal states and communities.

- Federal agencies, states, and communities must work together to develop mechanisms to assure that sufficient funds reach the point of need at the time of need, avoiding both shortfalls and windfalls, without encouraging waste or providing an incentive for unnecessary growth in the coastal zone.

- Maximum discretion and control of the assistance program should remain with the state and local government.

- No coastal state is eligible to receive any assistance unless it is linked to the coastal management programs and objectives of the states, either by having a management program as approved under section 306 or by receiving a planning grant under section 305.

Two sources of financial assistance comprise the CEIP: the Coastal Energy Impact Fund, with $800 million for a 10-year period and the formula grant program, with $400 million available over an 8-year period. The Fund is the primary source for (a) planning grants to help prepare for the consequence of new energy activity (up to 80 percent of cost), (b) loans for financing new or improved public facilities and services, and (c) assistance in meeting repayment schedules of loans or guaranteed bonds when or if the revenues from a coastal energy activity do not live up to expectations. Repayment assistance takes the form of refinancing, modification of terms, and supplemental loans.

Formula grants are given to prevent, reduce, or repair damage to environmental and recreational resources. They are the primary means for mitigating adverse impacts to the environment, particularly from OCS activity. In certain cases, formula grants can be utilized as secondary fiscal sources for activities primarily covered by the Fund, as shown in the diagram in Figure 5.

The CEIP amendment to the CZMA and the resulting regulations are too recent to be judged through experience, but certainly appear to address several important issues:

- The front-end problem: providing federal assistance to finance public participation (planning and studies) and needed public facilities and services in a timely way, i.e.,

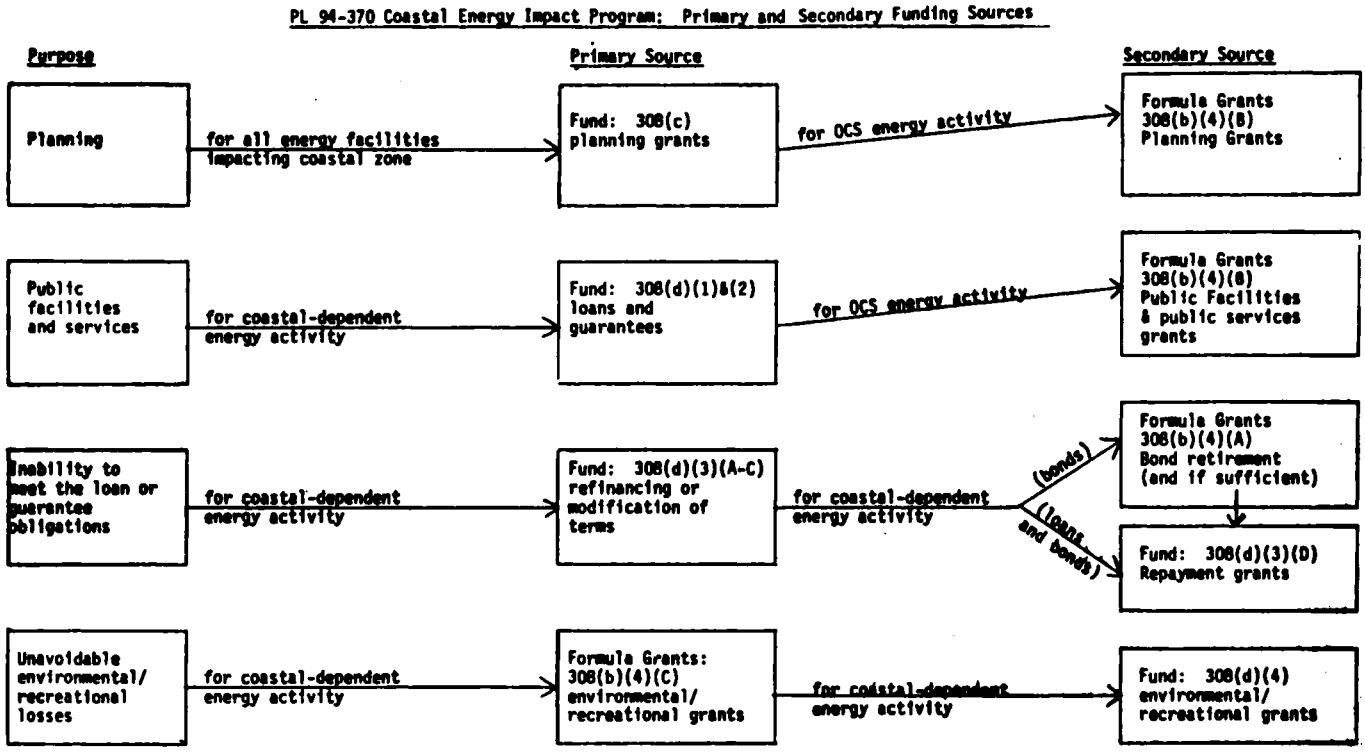


FIGURE 5

Source: Office of Coastal Zone Management

before the actual increases in revenue, if any, make themselves felt.

- Other mitigation and compensation measures: amelioration of demonstrable recreational and environmental losses and assistance, if expected revenues do not materialize, to repay loans and bond issues.

OCS energy activities are given priority, followed by coastal dependent energy activities and then (planning grants only) new energy activity in the coastal zone or affecting it. This is an example of special purpose legislation that recognizes the importance of coastal energy activity to the nation at large.

The CEIP poses a potential problem because it might encourage the location of certain facilities in the coastal zone primarily as a device for capturing CEIP funds. For example, a refinery does not necessarily qualify under the program, since it is not water-dependent; however its terminal and transfer facility will qualify for both grants and funds, on the basis of added employment and oil flow. Seed money for public facilities and services could become an undesirable incentive to bring the refinery closer to its coastal terminals. Nevertheless, the CEIP rules and regulations represent a systematic effort to encourage participation (by funding studies and planning) and to mitigate projected costs or damages (to the environment, to recreation, to public facilities, and to services) without contributing to the degradation of coastal resources.

The Uniform Relocation Act

The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) provides a mechanism to compensate for displacement due to transportation activity. According to title II of the act, direct payments to property owners or tenants must be made by a public authority when real estate is taken as part of a federally aided project. Section 202 provides for moving expenses and dislocation allowances. A flat fee in lieu of payments is allowed, limited to $300 for moving expenses and $200 as a dislocation allowance. A displaced business is limited to a $10,000 payment of moving expenses.

Section 203 of the act provides an additional payment, not to exceed $15,000, to cover any difference between the fair market value payment received by the displaced homeowner and the cost of purchasing comparable replacement housing. According to the act, the differential payment added to the acquisition cost should "equal the reasonable cost of a comparable replacement dwelling which

is decent, safe, and sanitary dwelling...and available on the private market." Federal agencies are authorized to develop procedures for establishing standards and reasonable costs of comparable dwellings. The EPA, for example, requires replacement housing to be, inter alia, functionally equivalent to the house being taken, in an equal or better neighborhood, and available on the market and at rents or prices within the financial means of the families and individuals displaced.

Under section 204, tenants can obtain payments for replacement housing if they have lived in the acquired dwelling for more than 90 days before the process of acquisition began. The act allows a payment for up to four years, not to exceed a total of $4,000, for renting living quarters. Computation of this provision has been interpreted by the EPA, for example, to mean the difference between the rent paid by the tenant in the home acquired by the federal agency and the reasonable monthly rent of a comparable dwelling. If the new rent is deemed unreasonable, the displacing agency will establish the monthly economic rent.[4] If a former tenant wants to purchase a home, the act allows a maximum payment of $4,000 for a down payment; the amount over $2,000 must be matched on a one-for-one basis by the prospective buyer.

The Uniform Relocation Act provides a rationale for accommodating adverse impacts or side effects associated with transportation services. Although directed toward individuals and businesses displaced by transportation activity, it might also be used to conpensate those disrupted through inverse condemnation. The DOT study, done by Urban Systems Research and Engineering (referred to above), suggests several methods for handling side effects: (a) categorical assistance payments that provide incentives for public agencies to mitigate adverse impacts and (b) noncategorical payments used to compensate directly for loss. Compensation can take the form of a direct buy-out (e.g., dollars for decibels) or can be allocated on the basis of losses in property values. Postproject valuing presents problems in assigning fair market prices on disrupted properties, particularly when the preproject valuation was higher. The problem is compounded when there is a gain in property values at a later date, because of a transportation activity, leading to windfall profits. This would suggest the need for some method of recoupment of compensation previously extended--a principle that would be very difficult to implement.

CONCLUSIONS

[Editorial Note. The conclusions that follow are based not only upon an evaluation of the research material available to the committee but also upon the composite of the committee's own independent judgment about the basic dynamics of real world situations. We are conscious of the fact that our assignment has required many value judgments that are not wholly provable through the systematic application of empirical data; without the imposition of these value judgments the report would have far less meaning and usefulness. In instances where we have made specific reference to case materials, these references represent positive examples in some instances and examples of what not to do in others. They should be viewed in that context.]

1. Mitigation is the primary method for dealing with the unwanted side effects of a project. In cases where mitigation is not practical, the project initiators have a responsibility for compensating impacted parties either directly or through facilitating access to government-sponsored compensation. (Case material: LNG Terminal; NEECO Refinery; SOHIO Alaskan Oil)

2. Many of the problems described in the case material could have been solved or substantially vitiated by earlier and more open dialogue between developer and participants. (Case material: LNG Terminal; Baltimore Dredging)

3. Early participation in planning by impacted and legitimately concerned citizens, as well as relevant agencies, is a prerequisite to identifying potential problems of mitigation and compensation and to providing a framework for dealing with them in an open, rational, and balanced manner. While the courts may remain as a back-up alternative, one key objective of the participatory process is to avoid the need for recourse to formal litigation. (Case material: LNG Terminal; LOOP; NEECO Refinery; SOHIO Alaskan Oil; The Foreign Experience)

4. Joint industry-agency-municipal task forces and programs to address and resolve specific issues under public scrutiny have been effective in air pollution control and solid waste disposal, in industrial pollution reduction, and in LNG safety and siting problems. This is particularly true in the foreign experience.

(Case material: Swan Island Shipyard; The Foreign Experience)

5. In many cases, there are socioeconomic or environmental costs in a localized area that are not offset by compensating benefits. As a general principle the committee feels that the developer/initiator should be expected to face these issues directly and to include the amelioration of the problems in the total project cost--whether it be the restoration of recreational amenities or the provision of replacement housing. At the same time, the potential need for certain adjustments for cost sharing between the private initiator and the governmental sector must be recognized. (Case material: ARCO-Bayport; Houston Containerport; LNG Terminal; NEECO Refinery; SOHIO Alaskan Oil; The Foreign Experience)

6. Governmental assistance in meeting exceptional impact costs can be justified by tangible benefits to the governmental agencies' respective constituencies. (Case material: Houston Containerport; LOOP; SOHIO Alaskan Oil; The Foreign Experience)

7. The federal role in mitigation or compensation is, by and large, complementary in character, as is indicated by (a) participation in study support (up to 80 percent of cost under the Coastal Energy Impact Program, for example), (b) back-up loans, (c) loan guarantees, (d) grants, and (e) seed money in special cases of national importance.

8. The problems of declining land values and expropriation of residential properties are peculiarly difficult to solve. In fact, instances of substantial inequity and insensitivity are described in the case materials. Where zoning is inadequate or unenforceable or where selective expropriation becomes necessary, compensation must be sensitive and comprehensive, giving consideration to such often overlooked factors as (a) cost of replacement housing in a similar environment; (b) actual cost of relocation to such housing (moving, landscaping, etc.); and (c) recognition of losses in tax or welfare benefits. (Case material: ARCO-Bayport; Houston Containerport; LNG Terminal; SOHIO Alaskan Oil)

9. Substantial secondary and future costs can be associated with a maritime-related project, e.g., a rise in insurance premiums in the vicinity of facilities for handling hazardous cargos. Special responsibilities are incumbent upon the developer and/or the identifiable beneficiaries to provide adequate compensation at the time of the development itself and for a reasonable period thereafter. (Case material: LOOP; NEECO Refinery; SOHIO Alaskan Oil)

10. Varying impacts between adjacent communities (e.g., the Portland-Sanford refinery proposal) may involve a substantial intermunicipal imbalance in identifiable costs and benefits. Creative techniques to redress these imbalances include tax sharing between communities, tax rebates, and creation of state-administered compensation funds. (Case material: NEECO Refinery; SOHIO Alaskan Oil; Swan Island Shipyard)

11. Existing legislation can fail to provide an adequate framework for specific mitigation and compensation measures through lack of mechanisms:

- to measure the total of costs and benefits because of administrative compartmentalization and/or technological specificity on the part of the reviewing agencies. (Example: the vastly different reviewing perspectives of the U.S. Army Corps of Engineers as contrasted with those of the U.S. Fish and Wildlife Service.)

- to force anything more than a perfunctory attempt at an open planning process at an early stage of the development, with adequate access by all impacted constituencies.

- to avoid sterile stalling--by agencies, by industry, or by opposing citizen groups--that unnecessarily impedes the process of seeking an early and equitable decision.

- to defuse polarized situations or to avoid interagency "buck-passing"

that might wear down and discourage the impacted citizenry.

- to take into account declining land values or other tangible impacts on land use, where inadequate zoning or the mere publicly known prospect of a given development may seriously erode property values.

NOTES

1. Urban Systems Research & Engineering, Inc., "Comprehensive Policy to Ameliorate Adverse Impacts of Transportation Facilities," Cambridge, MA, May 1975.

2. 40 Federal Register, 231, p. 55817, Monday, December 1, 1975.

3. For a detailed analysis and discussion of the program, the reader is referred to (1) NOAA, Office of Coastal Zone Management, Final Environmental Impact Statement, Rules and Regulations for Implementing the Coastal Energy Impact Program, January 1977; (2) NOAA, Federal Register, "Coastal Energy Impact Program," January 5, 1977; and (3) NOAA, Office of Coastal Zone Management, Written Comments Received on the Coastal Energy Impact Program Draft Environmental Impact Statement, November 1976.

4. 40 CFR 4.321.

CHAPTER V

RECOMMENDATIONS

In the foregoing chapters, the committee has set forth a number of specific conclusions with respect to the key areas of discussion--perspectives on maritime services; citizen involvement and public participation; and mitigation and compensation. This chapter presents detailed recommendations on matters considered to be of paramount concern within the key areas. The fact that these suggestions are being highlighted in this separate section should not be construed as downgrading the importance we attach to the conclusions appended to their respective chapters. Rather, the recommendations provide an opportunity for a greater depth of comment for those items singled out for treatment.

The committee's belief in a strong and meaningful level of public participation as an underlying part of the development process is apparent from what has been stated. At the same time, however, we are troubled because much of what we say on this subject might be seen as empty exhortation instead of being realistically implemented. Effective public participation can often be as much a state of mind as a series of formalized processes. For obvious reasons it is difficult indeed to legislate a state of mind.

The committee therefore has looked for ways to construct a set of checks and balances. For example, the participation audit (see recommendation 2 under "Citizen Involvement and Public Participation") is dependent, not only on evenhanded application and assessment by the lead governmental agency but also on a degree of openness and candor by the initiator of the development. The lack of either of these ingredients could generate regulatory roadblocks of an undesirably stultifying nature. It is the committee's hope and expectation that an evolving pattern of government/developer consciousness of the validity of the public participation process will alleviate many of these potential problems.

The committee trusts that these recommendations will be read in the spirit in which they are proferred:

that their promulgation is contingent not only on administrative effectiveness but also on an exercise of good faith by the participating principals.

PERSPECTIVES ON MARITIME DEVELOPMENT

> Recommendation 1--Coastal Zone. In recognition of the finite nature of the American coastline and the widespread desire for access to it, serious consideration should be given at all levels of government to restricting business or industrial uses in coastal areas to those activities that are demonstrably maritime and/or water-dependent in character.

The Coastal Zone Management Program has added an important new planning/analysis dimension to the process of allocating land uses and functional uses along and adjacent to our nation's shorelines. It brings into play a new and sometimes competitive intervenor in decision formulation. It also brings additional emphasis for public participation in the resources allocation process by placing particular stress on the involvement of a wide spectrum of affected constituencies and individuals.

In approaching this recommendation, the committee has taken cognizance of a recent University of Washington Sea Grant report, Ports and Coastal Zone Management--A Study of U.S. Port Development and Coastal Zone Program Development, by Hershman, Goodwin et al., which explores the full range of this complex issue. The report points up a wide range of individual state patterns, which have been loosely classified as follows: (a) formulation of site specific policies for particular uses, (b) development of somewhat less site specific policies overlaid by a network of general guidelines that affect the decision process, and (c) establishment of performance standards to provide mechanisms for control of environmental impacts without a strong site specific focus.

On the basis of analysis of the case materials as well as other sources in the literature, we are struck by the variety of competing pressures that become an inherent part of the sorting-out of issues that underlie specific development proposals. These issues do not always lend themselves to easy reconciliation. A few examples may help clarify the point:

1. Cost/benefit demands of the project: The least costly solutions, measured primarily in terms of the economics of the project, may often run counter to other significant public aspirations--environmental, socioeconomic, recreational, and others. (Example: The Houston Port Authority's decision to develop the Morgans Point container facility adjacent to and, in fact, within an existing residential community. In contrast, the New

England Energy Company's decision to develop an inland refinery that would necessitate a more expensive 36-mile (57 km) pipeline connection in order to obviate a coastal location for a refinery.)

2. Public access and recreation: The understandable need to locate facilities for the handling of hazardous cargos in isolated areas may often generate a wholly different set of pressures running counter to expressed recreational and water-access objectives that have a distinct public interest claim. (Example: The Cove Point LNG Terminal and its recognizable impact on previously stated recreational objectives in Calvert County, Maryland.)

3. Maximum generation of tax assessment and employment potentials: Often, pressures for an increased tax base and/or expanded employment opportunities in an individual community that is the host for a proposed development may run counter to recognizable regional expectations and aspirations. While the host community may be willing to accept near- and medium-term environmental or recreational deficits in the interests of achieving identifiable financial trade-offs, the same form of trade-off may not be readily available to a larger and often substantially impacted constituency. (Example: The SOHIO proposal for a major oil discharge facility in Long Beach has a clear impact on the larger Los Angeles basin air quality objectives (represented by the California Air Resources Board) that is not wholly commensurate with the self-interest of that smaller geography that was represented by both the Port and the city of Long Beach.)

4. Environmental considerations: The needs of maritime facilities, almost by definition, conflict with environmental aspirations in individual cases. Many of the nation's ports have been created by dredging and filling estuarine and other shallow water areas. Yet these are the very areas upon which so much marine life is totally dependent, either for food supply or essential habitat during the juvenile stage. Since these essential estuarine areas are limited in certain places, the environmental effects of port development must be evaluated carefully.

The precise equities of public interest often become very difficult to assess. The new or expanded facilities inevitably imply a change in an identifiable and known status quo. The retention of a status quo is more easily explainable than almost any other available public policy alternative. The key question is how best to balance the impact of a relative unknown with the complex network of knowns that can be clearly understood. (Example: The Hart-Miller Island disposal site clearly presented a difficult

adjustment to a constituency that could, in the short term, be relatively unaffected by a no-build decision.)

5. Land use patterns: Many urban ports are afflicted by problems of obsolete facilities and underutilized resources. This condition often invites a strong push for the interjection of wholly new uses--not necessarily water-dependent in character--that may offer near-term visual improvement. This may involve a mixed use residential/commercial development or an industrial research park. But great selectivity must be used by urban planners to avoid foreclosing the development of future port-related activities that may have the potential for long-term positive economic impacts, even in the face of quickly eliminating these discordant evidences of obsolescence and decay.

6. Reacting to federal assistance opportunities: The committee has evaluated the Coastal Energy Impact Program (CEIP) of the Coastal Zone Management Program. It is impressed by the expressed objective of mitigating the impacts of energy-related facilities--so important to the economic future of the nation--on the local communities in which they may bear most heavily. At the same time, the committee hopes that the availability of potential federal mitigation/compensation funding will not become the excuse for decisions that obscure both the importance of accommodating the unborn water-dependent uses of the future and the compelling importance of conserving the supply of waterfront land for a broadly affected and interested public.

By definition, the committee is concerned with the problem of providing the broadest range of options for the development of maritime facilities and operations. It is thoroughly conscious that the realization of this objective must be consonant with other demands upon the country's important coastline resources. Therefore we stress the need for rigorous and long-term techniques to evaluate the issues underlying the allocation of resources in the coastal zone.

CITIZEN INVOLVEMENT AND PUBLIC PARTICIPATION

Recommendation 1--Lead Agency. For activities under complex and overlapping jurisdictions (e.g., dredging, hazardous cargo safety, a lead agency, at both federal and state levels, should be specifically designated, preferably from among existing agencies with permitting powers, with responsibilities under the current law (a) to coordinate the regulatory process to prevent unnecessary duplication, complexity, and delay and (b) to make it more open and responsive to citizens and industry by fostering constructive and meaningful participation in the decision-making process by all concerned parties; government agencies, industry, and citizens, including especially impacted or duly concerned individuals or citizen groups.

Rationale

The current regulatory process has proven all too often to be lengthy, cumbersome, expensive, confusing, and, at times, ill focused. In the case of dredging (see the "Dredging Process" case materials), industry, government, and environmental constituencies have concurred on the general nature of the deficiencies in the process. While many agree that streamlining is needed, they fear that streamlining might remove valid public protections and thus facilitate developments that could be harmful to governmental or environmental objectives or to the neighboring community.

To allay these fears, we recommend a lead agency obligation to facilitate participation by interested agencies and private parties at an early stage of the decision-making process. We further recommend (see recommendation 2 under "Citizen Involvement and Public Participation") that this obligation be institutionalized by a participation audit to precede the processing of a permit application. While participation is most effective in informal processes, it behooves the lead agency to monitor carefully the tenor and results of such participation and to contribute, when necessary, either to defusing unreasonable polarization or to compensating inequities--for example, by providing technical advice or access to planning funds when available.

The two responsibilities--regulatory coordination and participation fostering--are inseparable. Comprehensive and meaningful participation by citizens is the necessary balance to the removal of needless regulatory obstacles. Although we hope that lawsuits and court injunctions would

greatly diminish in occurrence, and be tried on merit rather than on procedure, the courts remain a last resort of injured parties (citizens or developers), particularly if the lead agency were to let a built-in bias or vested interests interfere with the due process of law and the accommodation of conflicting needs.

There have been instances when interagency arguments have created long periods of uncertainty about the actual designation of a lead agency (see the "New England Energy Company Oil Refinery" case material). This type of avoidable delay is unworthy of government; the prompt resolution of such conflicts is implicit in this recommendation.

Process

The committee recognizes that it is talking about a period of time when no formal applications have been filed for specific permits and/or governmental approvals of other kinds. This therefore raises the question of actual responsibility for determining the appropriate point of intervention by a federal or state agency.

To a great extent this problem must be left to the energy and good faith of the agencies involved. Quite clearly, from the federal point of view, the initial need for a lead agency will become apparent at the level of the area and/or regional office of the federal department. In any case, where there might be good reason to anticipate some disagreement or ambiguity in the determination of the lead agency, there should be an obligation at the top departmental level to resolve the problem promptly.

Corollaries

The lead agencies (federal and/or state) should do the following in the exercise of their responsibilities:

- Request other agencies to establish policies and procedures consistent with existing law and due process, assist them as necessary, and resolve conflicts, so that the lead agency becomes a single source of federal and state positions on key issues.

- Coordinate procedures and policies with its counterpart lead agency (federal or state) for establishing wherever possible procedures for joint notices, coordinate time limits, and public hearings.

- Eliminate roadblocks and practical vetoes not intended by law, allowing other agencies only a commenting role within appropriate and enforced time limits.

- Establish interagency task forces where appropriate (including, in some instances, federal/state/regional working groups), which can also serve as clearinghouses to which initiators can refer in the preparation of their applications and in the design of the project.

- Issue criteria to be considered in the final review process for evaluation and final decision.

- Perform public participation audits jointly (federal and state).

- Provide, whenever necessary, technical assistance to communities, groups and individuals impacted by a proposed development and guide or facilitate their access to public funds available under the law for education and planning purposes.

- Provide advice, to developers unfamiliar with the participation process, on techniques and approaches that have fostered constructive, two-way interaction while minimizing polarization and yielding tangible and timely inputs into the decision-making process.

- Generally foster informal working relationships among all concerned parties.

- Become in time thoroughly familiar with the dynamics and processes of citizen participation in particular geographical areas. A senior officer should be in charge of the participation effort within the agency, assisted by a day-to-day manager who should be rotated over a period of no less than one year but no more than two years, so that knowledge and experience are spread throughout the organization.

Recommendation 2--Participation Audit. The lead permitting agency--prior to accepting an application and prior to issuing a joint state-federal public notice--should perform a participation audit to determine whether an applicant has reasonably attempted to involve impacted or affected citizens and relevant local, state, and federal agencies in the predevelopment planning process. The lead agency should be obligated to withhold acceptance and issuance until appropriate actions have been initiated by the applicant.

Rationale

This procedure will encourage early and meaningful involvement of concerned constituencies in data gathering, site selection and facility design, construction and operating procedures and will ensure adequate consideration of the interests of those who have been impacted by the project. It will prevent the starting of the permit process by applicants who have not attempted in good faith to weed out potential problems with people and regulatory agencies. Such applications can only fail or be indefinitely delayed through agency opposition or citizen suits and thus result in waste and frustration for all concerned. Formal public hearings are a cumbersome, and often adversarial, process at best. Even in the face of multiple requirements for such hearings, they often do not provide an effective stage for the necessary balancing of issues and the trade-offs of mitigating and/or compensatory measures.

Process

General guidelines should be issued by the lead agency on the criteria and procedures of its participation audit, with due allowance for the project size and complexity.

The lead agency would review a separate section (participation audit) of the application showing comprehensive and meaningful involvement of all concerned parties (or, at least, reasonable attempts to foster such involvement), outlining in particular:

- Effective identification of impacted or duly concerned constituencies, and characterization of potential impacts.
- Open dialogue among the applicant and impacted constituencies at various phases of the project: data gathering, selection of

alternatives, design, and operating procedures of the facility.

- Similar dialogue among the lead agencies themselves and, where warranted, with any certifying or commenting agency.

The lead agency would then either accept the application or direct the applicant to pursue such additional consultations as necessary before submitting a revised participation statement, along with any amendments. (See the discussion of guidelines for impact analysis in Chapter II.)

Corollaries

This recommended procedure should help accelerate the regulatory process and improve the results when combined with these concomitant measures:

- Coordination and cooperation of federal and state or regional regulatory agencies in developing compatible policy guidelines and clear administrative procedures.

- Early designation of two lead agencies with permitting authority; one each at the federal and state or regional levels. Other agencies would have commenting authority only, or, in a very few instances, certifying authority.

- Coordination of the two lead agencies' procedures for early consultation by the applicant with commenting and certifying agencies (interagency task forces or a clearinghouse, etc.).

- Promulgation, by the two lead agencies, of common guidelines for participation and establishment of joint procedures (public notice, joint hearings, etc.), as well as stringent time limits.

Recommendation 3--Citizens Advisory Committees. Broad-based (industry, environment, local government, citizens) residents' committees should be formed to review the design and operations aspects of proposed hazardous cargo facilities and for public bond-supported projects and to recommend effective measures for accommodation, mitigation, or compensation. Lead agencies should provide a permanent liaison member for each committee and funding for independent technical analysis.

Rationale

This recommendation will encourage early and meaningful involvement of concerned constituencies in projects that have a particularly serious impact upon the local community. This would tend to defuse irrational fears and alienation, as well as marshal local expertise to help contribute to the safety of the project or to obtain early a rationally motivated "no" decision. Also fairer and more sensitive compensatory measures for duly impacted citizens would be devised.

Process

Some useful operating guidelines can be drawn from the Japanese experience. There, lead agencies worked with local government and Marine Casualty Insurance Association chapters to form an LNG Safe Entry Committee composed of representatives of

- Port authority and pilot associations
- Academic and environmental associations
- Industry--shipping, shipyards, construction companies, and consultants
- Insurance companies and banks

The list appears to be directly applicable in the United States, with labor, local government, and a citizen ombudsman providing useful additions, as well as possibly a media representative.

Funding could be raised locally with help from the Office of Coastal Zone Management and other federal and state agencies. The applicant could contribute through field trips, data collection, analysis of impacts from alternatives, etc.

The committee's recommendations would bear much weight in permit processing, on decisions to build or not to build, and on mitigation measures for design, construction, and operational procedures. The Citizen's Advisory Committee also would attempt to extend the "balancing of issues" to the compensation of duly impacted citizens who would not necessarily realize commensurate benefits. For example, should real estate values or insurance premiums be affected, compensation might be a mixture of tax rebates and differential reimbursements from the applicant or other source, depending on where benefits are diffused.

Recommendation 4--Staff Assistance. The applicant and/or the designated lead agency should provide time, appropriate staff, funds where necessary, and a comfortable setting to encourage a maximally effective public involvement process. Public involvement should start well in advance of and should extend beyond the scope of legally required formal public hearings.

Rationale

Although the statutory review procedures of the various licensing agencies are designed to include public involvement, in actual practice some segments of the affected constituency fail to participate. There are several reasons for this:

1. Inadequate notification: By way of example, the methods followed by the Corps of Engineers are not adequate in practice to ensure proper notification of affected parties. In some cases, notices of permit applications and notices of hearings are mailed by the corps to a standard list of parties made up to a great extent of local government officials, state agencies, and public advocacy groups.

2. Inappropriate settings: In general, involvement of the public usually consists of formal, highly structured hearings held in a large, public room under conditions that sometimes resemble a court trial. Important dignitaries seated at a head table or on a stage, an official stenographer taking notes or operating electronic recording equipment, and a crowd of friends and strangers in the audience all combine to overwhelm any but the most stouthearted. Thus the average member of the constituency is generally reluctant to participate actively in the deliberations.

3. Failure to understand the project: Although the permitting agency usually issues a notice of the proposed action with a brief description of the project, the affected constituency, even if properly notified, still may not have enough information to gain a perspective for full understanding of the implications of the proposed action. This makes it difficult for members of the constituency to make their value judgments known before the hearing deliberations begin.

Process

To help rectify the weaknesses of the public involvement process now mandated by law, several changes should be made in the methods and approaches currently in use:

1. Improved notification process: Better methods of examining more closely the specific impacts of a proposed change would lead to better identification of the affected constituency. In addition, innovative methods of notification should be tested, such as spot TV announcements during both daytime and evening prime viewing periods. Other methods might include saturation mailing, or mailbox stuffing, in a prescribed geographical area near the proposed project.

2. Improved settings for hearings: New approaches to the manner in which hearings are held should be implemented. Smaller groups, more relaxed settings, and less formality can lessen the "stage fright" problems suffered by members of the constituency, who usually will be reluctant to stand up before an audience.

3. Improved levels of understanding: The predicament of the layman should be considered more fully when the description of a proposed change is prepared. Jargon and technical terms should be kept to a minimum, and when they are used, they should be adequately explained.

MITIGATION AND COMPENSATION

Recommendation 1--Homeowner Compensation. Compensation measures should include, where applicable, the principle of "a home for a home," as enunciated in the Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (section 203(a)(1)(A)). The lead agency should require developers to comply with the terms of the legislation and should encourage them to offer technical assistance in relocation and financial management.

Rationale

The committee feels that serious inequities have been evident both in our own U.S.-based cases and in the case material on the foreign experience in terms of the ultimate impacts of maritime facility acquisition on people. This has been a long-recognized problem at the federal level--initially through the vast takings occasioned by the federal interstate highway program. In part, that experience gave impetus to the development of the Uniform Relocation Assistance and Real Property Acquisition Act of 1970. The provisions of that act have been largely applicable to projects that involve direct federal initiation and implementation.

The general principles of this recommendation concern maritime-related projects with legally mandated federal intervention of a financial and/or regulatory nature. We believe that such constraints should apply in all cases affecting maritime facility development. However, the committee recognizes the fundamental practicality of application only in those projects involving a substantial depth of federal participation, which indeed are the vast majority of maritime-related developments.

Process

This recommendation embraces the same general principles stated for the participation audit (recommendation 2 under "Citizen Involvement and Public Participation") and assumes the same measure of oversight by the involved federal agencies. If, in the judgment of the permit-issuing federal agency, insufficient attention has been given to the compensation aspect of the development problem, that fact should be taken into consideration as part of the permit-review process or, in more severe cases, should be grounds for delaying the review process until additional efforts have been exerted by the project sponsor.

In those instances where problems emerge after the actual permit issuance, sufficient coverage should be provided to assure a workable set of conditions that must be met as part of the responsibilities, incumbent upon the initiator, for maintaining the continuing validity of the already issued permit.

Corollaries

Many special considerations should apply for circumstances that can evolve. We would suggest some of these as examples rather than suggest that they cover the full spectrum of possible contingencies:

- In cases where "inverse condemnation"--adverse, spill-over impacts that may affect property owners adjacent to but not within the project boundaries--may be a significant factor, special considerations should be developed during the mitigation and compensation process. If the facts reveal a serious problem, the federal oversight agency should attend to the situation on a case-by-case basis.

- In cases where risks associated with hazardous cargos may be a significant factor and difficult technical issues are apparent, the federal agency with oversight should consider these factors in its own assessment of the merits and demerits of the permit issuance case.

- To the extent that financial management may become a significant issue for the relocatees (particularly those with limited means and experience), there should be a special responsibility incumbent upon the initiator to help relieve these problems.

- In cases where the sudden availability of property acquisition funds may create ineligibility for existing federal/state/municipal assistance programs for affected property owners, there should be a workable "court of last resort" for adjudication of these problems.

CASE MATERIALS

ARCO-BAYPORT TERMINAL: A NEW TANKER BERTH NEAR A RESIDENTIAL COMMUNITY IN TEXAS

The Atlantic Richfield Company proposed a new tanker berth near Seabrook, Texas, on property leased from the Houston Port Authority. The Corps of Engineers, in exercising its own obligations to assess the public interest implications of the proposal before permit issuance, was charged by some with taking a narrow view.

It would appear that the Corps gave limited consideration to both the proximity of the Shore Acres residential community and the potential adverse effects on aesthetics, safety, quality of life, and property values. Many homeowners were not formally notified of the proposal. Municipal authorities--following the letter of the law if not its intent--did not feel it necessary to communicate with nearby property owners, because no zoning change was at issue.

This illustrative case raises the knotty problem of "inverse condemnation"--the loss of property value through proximity to a new development without any recourse to compensation.

The Corps of Engineers ruled that an environmental impact statement was not required because it viewed the residents' objections as ones of land use--a primarily local discretionary issue. The residents did not agree. But where is their recourse?

ARCO BAYPORT TERMINAL
SEABROOK, TEXAS

On April 8, 1975, the Atlantic Richfield Company (ARCO) submitted an application to the Galveston District of the U.S. Army Corps of Engineers (COE), under section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), for a permit to construct a tanker berthing and unloading facility in the Bayport Channel near Seabrook, Texas. The facility would be constructed on property leased from the Port of Houston Authority. The application was subsequently processed through the various review steps required by law, including public notice, public hearings, actions by the applicant in response to protests, and analysis and investigation by the District Engineer. At the conclusion of this procedure, on January 29, 1976, the application was forwarded to the office of the Chief of Engineers in Washington with the recommendation that a permit be issued.

One of the conclusions by the District Engineer, leading to his recommendation for issuance of a permit, was that an environmental impact statement (EIS) was not required, due to the absence of significant adverse effects on the environment. Most of the protests related to land use and land use controls. Specifically, owners of homes adjacent to or near the proposed facility were concerned about the possible decline in property values that might result from construction on the north side of the Bayport Channel, on a narrow (300 ft (91 m; metric conversions are approximate throughout)) strip of land immediately adjacent to a number of homes. Figure 6 shows the close proximity of the proposed project to the nearby residential development known as Shore Acres.

Since this is not an environmental kind of objection, the Environmental Protection Agency (EPA) felt that it had no jurisdiction in the matter. Neither the EPA nor any state or local environmental agency has the power to control land use, and, for this reason, it was concluded that no EIS was required.

After due deliberation, the COE decided that the permit should be issued, and representatives of the protesting citizens group were informed of the pending action. They immediately filed suit in federal district court in Houston and, during May 1976, were granted a temporary restraining order that prevented issuance of the permit. The Corps, after consulting the Justice Department, decided to prepare an EIS rather than to force a court suit on the matter. The agreement to prepare the EIS was formalized in an agreed judgment of dismissal, and the case was dismissed on June 12, 1976.

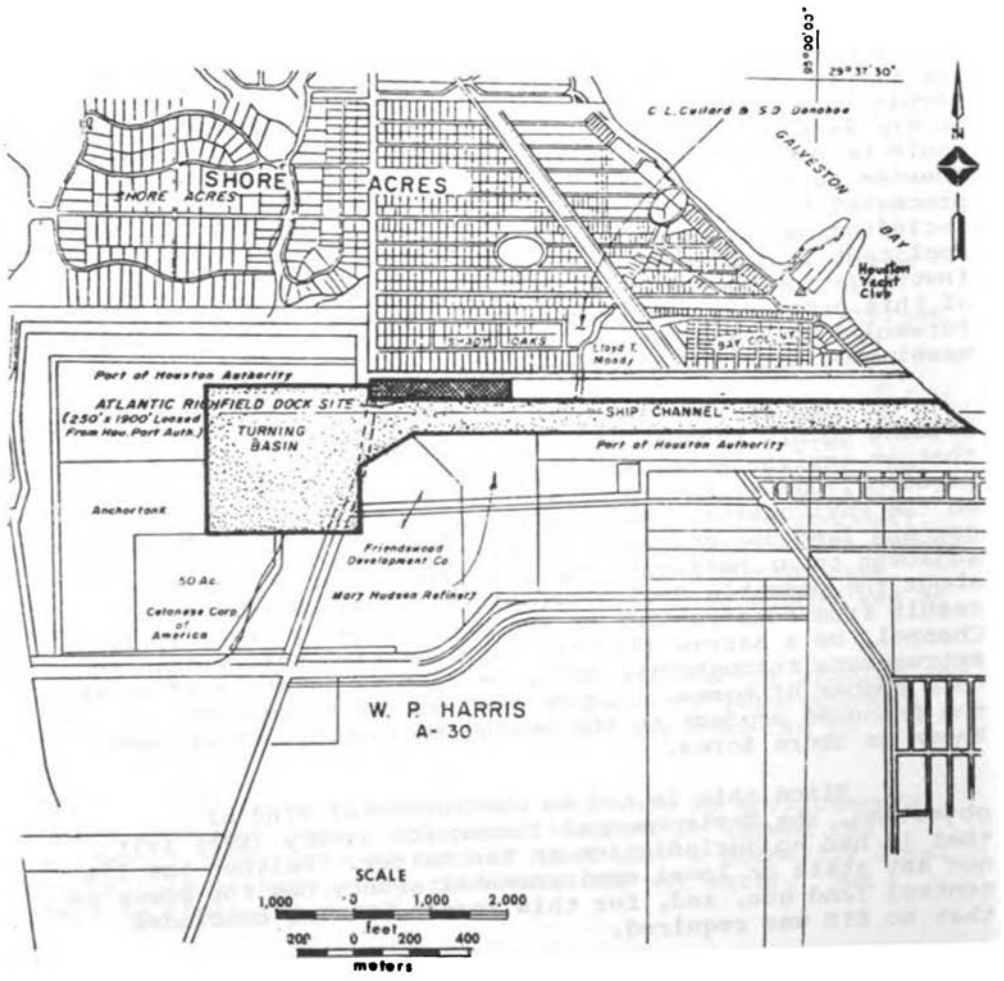


FIGURE 6

PROPOSED ARCO TERMINAL

BACKGROUND

The Bayport Industrial Complex

Bayport is a planned industrial park of 10,500 acres (4,200 ha), located between Houston and Texas City, near the Houston Ship Channel. Figure 7 is a vicinity map showing the proximity of Bayport to the Houston-Baytown-Ship Channel industrial complex.

Bayport is a project of the Friendswood Development Company, a subsidiary of the Exxon, U.S.A. Company. It is a fairly new area that had its first land sale in 1964. It is located near the NASA-Houston complex and is designed for heavy process industry, principally chemical manufacturers making use of the raw and semifinished materials that are so abundant in the ship channel area. The development has its own waste treatment plant, a deepwater port for large vessels, barge docks, and a pipeline distribution network.

The Bayport Channel is a private channel, built and operated by the Port of Houston. It is approximately 4.5 miles (7.2 km) long from the point where it leaves the Houston Ship Channel to the west end of the turning basin, located about 2 miles (3.2 km) inside the Bayport property line. Completed in 1966 as a 12-ft (3.7 m) deep by 150-ft (45.7 m) bottom width barge canal, the channel was enlarged to 40 × 300 ft (12 × 91 m) in 1974. It can currently accommodate conventionally configured vessels up to 70,000-80,000 DWT (deadweight tons) and even larger, shallow-draft vessels such as those currently being designed and built.

The Bayport complex is now home for a number of major chemical plants. Since its inception in the early sixties, it has been looked upon as a model industrial development and has been accepted by nearby residents as a good neighbor. Part of this, of course, is due to the tolerance of Houston area residents toward heavy industry. Most of it, however, is a direct result of environmental standards in Bayport that are enforced through the Bayport Industrial Association, an organization comprising owners and occupants of the development. For example, air emissions such as smoke, particulate matter, and "odorous or toxic materials" are strictly controlled. Hazardous, explosive, or radioactive materials must be handled and used according to specified regulations. Noise levels, vibration, and glare must all be measured and controlled. The volume, quality, and point of discharge of industrial and domestic liquid wastes must be approved by the Texas Water Quality Board. Waste collection and treatment are handled by the Central Waste Control Center through contract with each individual plant operator.

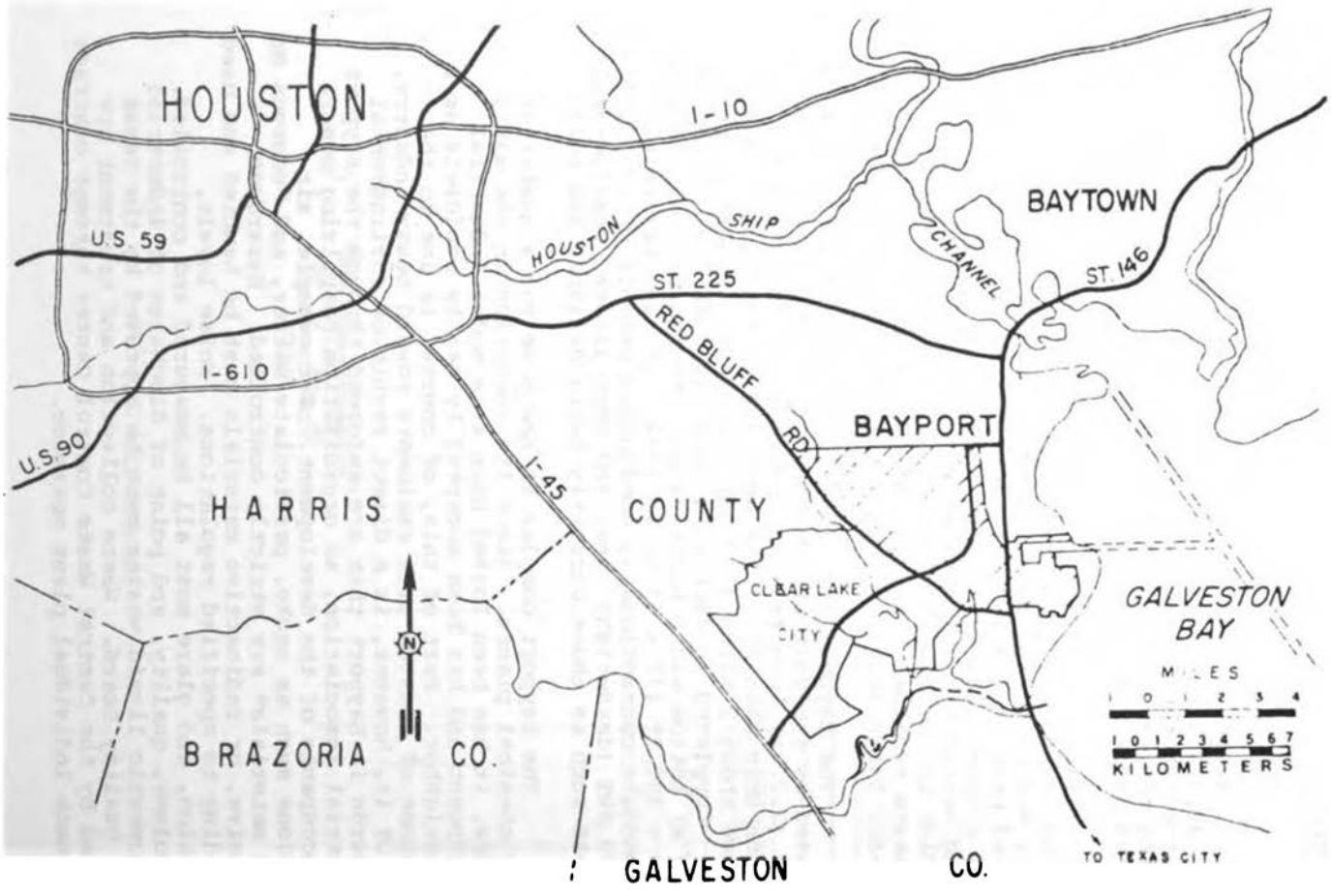


FIGURE 7 VICINITY MAP OF BAYPORT

Because of the stringent regulations, few objections had been raised against Bayport's industrial development or its occupants prior to the ARCO proposal. During the early sixties, however, when property was being acquired for Bayport by Friendswood and the Port of Houston, the port had to resort to its power of eminent domain to acquire several of the land blocks. Some of the owners whose property was condemned felt they did not receive adequate compensation, resulting in instances of hard feelings. These, could still exist today and could be a contributing factor in the ARCO controversy.

The ARCO Proposal

The proposed ARCO terminal consisted of a marine facility, with associated mooring structures, constructed in the Bayport Channel turning basin along its north edge. The completed facility was to be used for unloading crude oil from 50,000- to 150,000-DWT tankers and barges. The oil would be transported by underground pipeline to storage facilities several miles away. From there, the oil would be pumped to refineries in nearby areas as the need arose. No storage facilities would be constructed at the dock site; likewise, there were no plans for a refinery or any other facility to be built in Bayport by ARCO for processing imported crude oil.

The terminal would be constructed in an established port area under the jurisdiction of the Port of Houston Authority, a public agency established by act of the Texas legislature. Inasmuch as it would be located entirely within an area that was already dedicated to, and in use as, a heavy industrial zone, the proposed project would not represent a variance from prevailing land use patterns nor would it violate any existing land use regulations.

The basis for the proposed ARCO oil unloading terminal was the increase in demand for products made from oil, in the face of shrinking domestic oil supplies. This generated a large increase in the use of imported crude oil, which translated into more use of ships and less use of pipelines for the transportation of the oil. Not only has there been a forced shift to imported oil to meet existing refinery demands, but new demands for petroleum products have brought about the building of new refining capacity, which also must be supplied with raw materials that are, more and more, coming by ship from overseas suppliers. Although offshore deepwater terminals offer certain freight-saving advantages in the transportation of oil, these kinds of facilities are still in either the planning or the design stage and cannot alleviate the oil delivery demands of today. Thus arises the need for terminals such as that proposed at Bayport.

Another development that has created a need for the Bayport terminal is the changing technology in the water transportation of oil. A few years ago, most oceangoing oil tankers, as well as barges used in rivers and waterways, were of a size and draft designed to meet the physical limitations of the bodies of water through which they sailed. However, the rapid shift to overseas oil sources by many of the developed countries increased oil shipping costs dramatically and set off an intense race to build ever-larger tankers (most of which cannot enter U.S. harbors) to help reduce these costs. The trend to larger size has also been reflected in barges used for oil movement. The result is a critical mismatch between harbors and channels on the one hand and oil tankers on the other, in terms of water depths, channel widths, and the sizes of turning basins.

The dimensional mismatch became no more evident than in the Houston/Gulf Coast region. In this area alone there are more than 175 chemical plants, with an output of more than 650 different products, all heavily dependent upon crude oil as a raw material. A significant portion of this complex is located along the Houston Ship Channel. Yet, because of two tunnels beneath the channel, as well as other physical constraints, such as narrow width and sharp curves, transit by the newer generation of large vessels is somewhat restricted beyond the point where the channel leaves Galveston Bay and enters Buffalo Bayou. Since Bayport is located before this point, the restrictions on ship size are not as severe. Thus the proposed terminal at Bayport offers a number of advantages in terms of ship safety and the accommodation of large vessels, factors of great importance.

THE PEPMIT APPLICATION

On May 16, 1975, more than 700 public notices of the ARCO application were mailed. In response, approximately 90 protests were received by the Corps. These letters of protest were forwarded to the applicant for resolution, and a local meeting was held on July 8, 1975, to give the applicant a chance to explain the proposed project to the concerned citizens.

Objections to the application related to aesthetics, noise, air pollution, excessive lights, degradation of property values, safety, disposal of ships' wastes, oil spills, and potential explosion hazards. The meeting was an attempt by the applicant to resolve the objections, but it was evidently not enough. Prior to this meeting, numerous requests for a formal public hearing had been received by the Corps' District Engineer in Galveston from owners of adjoining property. In response, a public hearing was conducted on October 15, 1975, with approximately 330 persons in attendance. Exhibits and

testimony were received from all individuals, firms, and agencies wanting to comment. Testimony given at the hearing, as well as written statements submitted for the record, falls generally into three categories: (a) opponents of the permit, (b) proponents, and (c) persons who called for the preparation of an environmental impact statement prior to the granting of the permit.

Opposition to the Permit

Basically, the opponents were homeowners whose property adjoins, or is near, the Bayport Channel. Also, the Houston Yacht Club, located in the immediate vicinity, expressed concern regarding the application. Many of the opponents commented on the unknown factors regarding expected levels of noise, lighting, possible emissions and odors, impact on water quality, and safety of the operation.

The primary objection, however, was to permitting an additional marine facility adjacent to homesites. Residents of adjoining subdivisions maintained that the Friendswood Development Company had promised, in 1966, that nothing would be built on the north side of the channel. As their testimony relates, it was stated that a 300-ft (91.4 m) strip along the channel's north side would be left as a green belt to serve as a buffer between the industries south of the channel and the homes to the north of the channel. The opponents felt that the proposed ARCO terminal would constitute a violation of the earlier promise by Friendswood. Adjacent homeowners were concerned about the possibility of their homes declining in value if the ARCO construction were to take place.

Support of the Permit

ARCO, the applicant, contended that the benefits expected to accrue to the general public from the dock facility far exceeded the reasonably foreseeable detriments to adjacent homeowners. The facility would be an improvement to the capabilities of the Houston Ship Channel and would increase safety for the vessels on the waterway. It would also increase liquid cargo handling capabilities for the greater Houston petrochemical industry, a mainstay of the region's economy. Since the Bayport Channel is owned and operated by the Port of Houston Authority, the project would increase the income and assets of this agency.

The applicant, in answer to concerns about possible degradation of air and water quality, noted that no adverse comments were received from the Texas Air Control Board and that a Texas Water Quality Board certification had been obtained.

Although quantifiable data related to noise and lighting levels were not submitted by ARCO, the anticipated noise levels were projected to be comparable to similar operations elsewhere, and the lighting was to be directional, meeting safety requirements of the Occupational Safety and Health Act. The applicant further stated that safety standards for unloading ships and control of oil spills are enforced by the U.S. Coast Guard and that they would comply fully with all regulations.

Requests for an Environmental Impact Statement

The original Bayport Channel was constructed prior to the passage of the National Environmental Policy Act of 1969. Subsequently, the channel has been deepened and dredged, and dock facilities have been installed on the south shore of the channel in recent years. Permits were issued for each of these activities, and there have been no unresolved substantive objections in connection with this earlier work. Development of the industrial park and the Bayport Channel port complex proceeded with little or no opposition until the ARCO permit application.

Those who argued for the preparation of an EIS contended that the addition of the pipeline and docking facilities by ARCO would enlarge the Bayport Channel development beyond the scope for which it was originally intended. This contention is based on the public announcement, at the time of its original construction and during the later deepening phase, that the channel was to serve the Bayport industry complex and nothing else. However, ARCO's plans contemplated that the dock and pipeline would be used to serve industries in the upper channel area, far removed from Bayport. Thus, it was argued, the primary and secondary environmental impacts of the enlarged facility would range beyond the immediate vicinity of the channel, and these potential effects should be treated in a separate EIS.

RETROSPECT ON THE ISSUES

On the basis of these arguments, the Galveston District of the U.S. Army Corps of Engineers concluded that issuing the ARCO permit would be in the general public interest. No federal or state agencies had offered objections to the permit application. The extensive number of objections by local residents and other members of the general public were for the most part nonspecific or related to matters in which the adverse effects could be controlled or mitigated by existing private and public organizations.

The principal objection to issuing the permit was that construction of the marine facility in the location

contemplated would have an adverse effect upon the local population to the extent that residential property values could decline. The COE has stated that "this consideration is one that could be, but is not, determined through (proper) utilization of local zoning authority. The COE is not authorized to determine or impose land use requirements. However, it is the responsibility of the Corps to determine whether granting the permit is in the public interest, and in doing so, to weigh the benefits of the project against all detriments, including possible adverse effects on the desirability and value of homesites located in the vicinity of the proposed project."

This decision raises the problem of "inverse condemnation"--that is, the loss of property values through proximity to a new development without any recourse to compensation for that loss. It is clear that the Corps of Engineers considered this a relatively minor factor in relation to its total assessment of "the public interest." It seems apparent that the potentially affected residents had great difficulty in obtaining the serious consideration they sought.

Assessment of the environmental impact of a proposed project to determine whether it significantly affects the quality of the human environment is a requirement of state and federal law. However, the mandated assessment is primarily limited to easily quantified factors that are specified in standard procedures for certain defined kinds of projects. Other factors, especially those that exist in just one situation, will usually be included in the assessment only when protests are made by the affected constituency. For example, after the ARCO Bayport application was received, the COE made an assessment of potential air and water pollution effects and the potential impact of the proposal on natural or man-made resources. No consideration was given to other environmental effects, such as aesthetics, safety hazards, lights, and noise, until the local population protested.

In other words, the homesite proximity was not seriously considered by the COE at this early stage. Also, as far as is known, there was no attempt on the part of municipal authorities to advise adjoining and nearby property owners of the impending construction. This, of course, could be because there are no zoning laws, deed restrictions, or platting standards that apply jointly to both the Shore Acres subdivision and the Bayport industrial park.

Even after protests on aesthetics, noise, light, and safety were taken into consideration, the COE still felt that adverse environmental impacts were lacking and a permit

should be issued. The issue of a possible decline in property values was evidently ignored, and only the granting of a temporary restraining order by the federal district court served to throw enough light on the citizen's concerns to force a more complete examination of all factors.

As a result of the Bayport case, the local representatives of the COE have arrived at several conclusions, some of which may represent a new awareness:

1. Since all relevant factors now appear to be under assessment, it is felt that the established permit procedure worked in this case.

2. A proposed facility, such as the Bayport Channel complex, needs to be fully planned, widely disclosed, and thoroughly understood by the general public well before a permit application is accepted. This is necessary to ensure that funds are not expended on a project that would later be subject to controversy that would jeopardize the initial investment.

3. Bayport Channel was constructed in full compliance with existing statutory and regulatory requirements in effect at the time. Development projects, however, are now under NEPA procedures, and further work on them is subject to more intensive environmental scrutiny. It is the general conclusion therefore that the difficulties encountered during the assessment of the ARCO permit application are inherent in any facility conceived and started during the pre-NEPA period and continuing today.

BALTIMORE DREDGING: A DREDGE DISPOSAL SITE IN CHESAPEAKE BAY

The Hart-Miller Island dredge disposal site had the two-fold purpose of (a) handling dredged materials whose removal was vital to the operations of the Port of Baltimore and (b) providing a water-related recreational area open to the general public.

Including technical studies and public hearings, it took 71 months from initial site selection to permit issuance and 57 months from permit application to permit issuance.

Regional and statewide support for the proposal was almost unanimous; localized opposition was equally compelling. Even though the site selection had been made on economic and environmental grounds, the divergence between economic and environmental considerations was sharply drawn in the final arguments.

The illustrative case suggests the need for an early warning system to identify incipient opposition and thus provide a framework for resolving differences.

HART-MILLER ISLAND
BALTIMORE DREDGE DISPOSAL SITE

Dredging is an essential and ongoing housekeeping function at all ports in the nation for developing deeper channels, for providing new facilities, and for maintaining main channels and facility service channels. Until the emergence of environmental concerns, decisions on disposal of dredged materials had been based on minimum cost alternatives. Now decisions have become far more complex and difficult.

BACKGROUND

The Port of Baltimore, located on the estuary of the Patapsco River, where it enters the Chesapeake Bay, is one of the prime maritime centers of the United States. From its beginning as a colonial port, it has weathered the trials of 270 years to become a prominent international maritime center. Today, the activities of the port represent an important economic activity in Baltimore and Maryland. The maritime complex provides 65,000 jobs directly and indirect (port-dependent) employment to an additional 104,000 workers. Of every 10 jobs in the state of Maryland, one is directly or indirectly dependent on the port.

It was not until 1836 that the federal government took part in deepening the main channels of the harbor. Since that time, many improvements to the channels have been made by the federal government. The most notable have been the authorized deepenings to 27 ft (8.2 m) in 1881, 35 ft (10.7 m) in 1905, 37 ft (11.3 m) in 1930, 39 ft (11.9 m) in 1945, and 42 ft (12.8 m) in 1958. A 1969 study by the Corps of Engineers has shown the optimal depth of the main channel to be 50 ft (15.2 m). Studies and channel deepenings have become more frequent in recent years as larger ships have proved to be more efficient and economical.

Historically, the disposal of dredged materials from Baltimore Harbor had been in open water areas either adjacent to the channels to be dredged or in nearby deep basins or trenches. The harbor limits are defined as being west of a line drawn from North Point south to Rock Point.

Two such open water disposal sites were provided in Chesapeake Bay by Maryland: the Kent Island disposal area and the Poole's Island Deep. In recent years, the Kent Island area has been used for uncontaminated spoil material from maintenance dredging of federal channels outside of Baltimore Harbor, and the Poole's Island Deep for disposal of contaminated material from specifically approved federal,

state, local, or private projects. However, in 1968, state conservationists began to question this practice, and, as a consequence, a program to phase out the use of Kent Island and Poole's Island Deep was proposed by the Maryland State Commission on Submerged Lands.

On the basis of recommendations of this commission, on May 2, 1969, the General Assembly of Maryland passed Senate Bill 623, which authorized $13 million for "the design and construction of one or more diked disposal areas" to receive dredged materials from the Baltimore Harbor and the approach channels. Two consulting firms studied some seventy potential disposal sites for the location of a spoil containment area. The Hart-Miller Island site was finally selected as meeting the best balance between economic and environmental considerations. Hence a request for a federal permit for construction was filed on February 25, 1972.

Hart Island and Miller Island are located in the upper Chesapeake Bay, north of the mouth of the Patapsco River. The site is approximately 13 miles (21 km) due east of Baltimore City, near the mouth of the Back River in Baltimore County. The islands are adjacent to one another, once having been a single land mass composed of sediments, primarily sand, with an underlying clay bottom. There are wetlands on both islands, and a significant portion of Hart Island is forested.

Since the application was filed, the Hart-Miller Island proposal has been opposed by Congressman Clarence D. Long, Second District, Maryland, and by certain environmental groups and boating associations. In opposition statements, the Hart-Miller proposal has been challenged as a less desirable spoil containment site than other potential sites in the bay area. Despite opposition, in past years several steps have been taken that give hope that the concerns will be resolved and the state brought closer to its goal.

Major land use planning efforts, such as the 1974 Baltimore Harbor Plan developed with the coordination of the Regional Planning Council, have endorsed the concept of continuous and generally compatible industrial and terminal development in the tidal Patapsco River area. Preparation of the Baltimore Harbor Plan is an important step in giving broad-based emphasis to future development patterns.

During 1975 the Maryland Board of Public Works, after considerable deliberation, approved Hart-Miller Island as the location of a contaminated spoil disposal facility. The facility would safely contain some 50,000,000 cubic yards (38,000,000 m^3) of dredged material. Subsequent to

that action, the decision rested entirely at the federal level.

In response to further opposition concerning the site selection process, Secretary James B. Coulter, of the State Department of Natural Resources, agreed to a reappraisal of site selections and contracted with Roy Mann Associates, Inc., on May 5, 1975, to conduct a "Peer Review of the Evaluation and Decisions of the Hart-Miller Island and Alternate Spoils Disposal Sites."

The Roy Mann report, submitted on July 28, 1975, rated the Hart-Miller site highest among those evaluated outside of the Baltimore Harbor. The consultant also reported that two inner harbor sites appeared to be suitable as bulkheaded containment facilities with a combined capacity of approximately 19,000,000 cubic yards (14,440,000 m^3), or approximately 18 percent of the projected probable 20-year dredging program, consisting of the removal of 102,000,000 cubic yards (77,520,000 m^3) of spoils. This includes the 21-mile (33 km) long proposed 50-ft (15.2 km) channel dredging and that associated with channel access to piers and depths alongside.

It should be made clear that inner harbor sites are <u>not</u> considered to be alternatives to a Hart-Miller Island project. These inner harbor sites are needed to contain approximately 56,000,000 cubic yards (42,560,000 m^3) of dredged material from nonfederal dredging activities. Outside the designated harbor area a need is projected to dredge and dispose of some 50,000,000 cubic yards (38,000,000 m^3) of dredged material over the next 20 years. This total will increase to 84,000,000 cubic yards (63,840,000 m^3) if urgently needed maintenance dredging of the C&D Canal approach channels is included. The Hart-Miller facility will be used primarily (but not necessarily exclusively) for containment of dredged materials from those outer harbor projects.

The permit for the Hart-Miller Island project was finally issued on November 2, 1976, after almost five years, as shown in the chronology.

Issuance of the permit has not signalled the surmounting of all obstacles. On June 30, 1977, a court challenge was filed in United States district court. On October 20, 1978, the court decided in favor of the opponents to the project, by holding the COE had exceeded its authority to grant a permit under section 10 of the 1899 Rivers and Harbors Act. Grounds for the decision were based on the court's finding that the application fell under section 9 of the 1899 act and therefore required

congressional approval for construction of a diked containment area.

Magnitude of Spoil Disposal Problem

From all considerations and estimates, it is anticipated that the dredged material disposal needs of the Port of Baltimore for the 20-year period from 1977 to 1997 will probably reach 102,000,000 cubic yards (77,520,000 m^3). Provision for such disposal involves both the development of the Hart Miller Island containment site and a series of confined inner harbor containment sites.

The Nature of the Disposal Site

The dikes will be constructed from sand deposits in adjacent water and underlying the enclosure. The northwest boundary of the project will lie on the longitudinal axes of both Miller and Hart islands, roughly following the bay-side beach of Hart Island. Miller Island will be nearly covered by the dike. Typical side slopes are 3:1 (3 horizontal to 1 vertical) on the exposed outside face of the dike and 5:1 on the inside face. Where the dike faces wetlands, the slope will be 10:1. In addition, the bay-side face will be riprapped with stone.

Construction will take about two years. The project life is estimated to be 9-10 years if dredged material from the authorized 21-mile (33 km) long, 50-ft (15.2 m) deep Baltimore Harbor Channel project is placed in the enclosure. Approximately half the channel is in Chesapeake Bay, beyond the harbor limits. If the dredged material is found to be uncontaminated, it can be deposited elsewhere, and the project life will be 20-30 years.

Dredged material will be pumped through hydraulic pipelines either from the dredging site, from barges used to transport the spoil, or from hopper dredges (large ships that carry the materials they dredge in their hold). In the latter two cases the vessel will be moored at a pumping station adjacent to the diked area. Dredged material and water are pumped into the enclosure where sediments settle and water slowly percolates through the bottom of the dike until a water level equilibrium is reached. When the dike approaches full storage (during the last 30 percent of its life), effluent will discharge to the bay through three sluice gates. This effluent will equal or exceed water quality of the receiving bay waters and will meet state water quality standards.

The waters of the Back River will not be dredged for dike construction, nor will dredging be done closer than

three quarters of a mile to any point on the mainland. The dredged material will be predominantly sand and will be from waters physically separated from the mainland by Hart, Miller, and Pleasure islands.

The state has pledged to develop and utilize the ultimate, enlarged island site as a state park featuring wildlife preserves and picnic areas for boating enthusiasts. The two islands are presently privately owned, and use by the boating public is regarded by the owners as trespass. Further, the islands are now eroding, and the proposed containment site will serve to arrest this condition.

CONCLUSIONS

Given the crucial relationship of dredging to the operational viability of the Port of Baltimore, the lead times involved in this project are long. From the time of the Green/Trident report that first recommended the Hart-Miller Island site, 71 months elapsed; from permit application to permit issuance, 57 months.

The case represents a classic example of the collision of significant regional self-interests with local aspirations and expectations. There seems to be little question about the importance of the project to Baltimore and to the state of Maryland, in which 10 percent of the total employment is in one way or another attributable to the port. The Department of Natural Resources--through Secretary James B. Coulter--designated the proposed site and worked vigorously for its acceptance. At the same time, however, boating interests in the vicinity and adjacent private property owners enlisted the support of their representative in the United States Congress, Congressman Clarence D. Long, and subsequently the political support of some local governments in Baltimore County, to provide a rallying point for opposition. Virtually all other respondents in the state had supported the concept and location of the proposed dredge disposal area. In short, while a project of this kind can be beneficial in the broad public interest, it can--and in this case, did--elicit strong opposition from the immediate locality directly affected.

It is quite possible to argue that special efforts should have been made by the initiators to identify potential opposing constituencies earlier in the process to work out suitable compromises with them. The written record suggests that the first formal opposition emerged on May 10, 1975--nearly three years after the first Corps of Engineers public hearing on the Hart-Miller Island site and more than 26 months after the Draft Environmental Impact Statement was issued. While the initiators may have hoped that opposition

would not emerge, this was evidently an unreasonable expectation. Thus some form of early warning system would have undoubtedly been useful.

One interesting concept was injected into the controversy. In an endeavor to counter the opposition of local opponents, Secretary Coulter funded an independent study (at a cost in excess of $300,000) to review the entire site selection process. The selection of the consultant and the monitoring of his work assignment were undertaken by a Peer Review Committee, which had substantial representation from the opposition forces. The report that emerged from that effort left the issue still unresolved; both sides could legitimately cite the report as giving credence to their particular contentions.

In a sense, this procedure had the appearance of allocating public monies--i.e., Secretary Coulter's payment for the Peer Review study--to provide technical expertise to the opposition forces. It highlights the ambiguities that can becloud such a situation.

CHRONOLOGY

May 2, 1969 — General Assembly approved Senate Bill 623.

- The bill provides $13 million for design and construction of one or more diked disposal areas to receive dredgings from the Baltimore Harbor.

Dec. 21, 1970 — Green/Trident report (under contract with General Services Administration of Maryland).

- Four volumes evaluating 70 potential disposal areas for Baltimore Harbor dredgings.
- Hart-Miller site recommended.
- Estimated cost for Hart-Miller is $11.5 million.

Aug. 1971 — Department of General Services; George Lewis appoints Hart-Miller Committee.

- Advisory Committee on Future Uses of Hart-Miller Island's Complex--nine members: Deptartment of General Services; Department of Natural Resources; Board of Public Works; County Executive; Regional Planning Council; Department of Economic and Community Development; and Department of Transportation.

Feb. 8, 1972 — Advisory Committee on Future Uses of Hart-Miller Island's complex.

- Recommends project: First 1,100 acres (440 ha) recommended for state park; Second 1,000 acres (400 ha) recommended either for recreation, too, or for later evaluation of uses.

Feb. 14, 1972 — Department of General Services estimated total for project at $23.6 million (including design and channels).

Feb. 24, 1972 — Department of General Services submitted application for Wetlands License from Board of Public Works.

Feb. 25, 1972 — Department of General Services submitted application for COE permit.

March 1, 1972	Maryland Department of Natural Resources draft of "Environmental Evaluation of Hart-Miller Project" favoring recreational usage.
	• Department of Natural Resources Secretary Coulter recommends recreation and offers to develop plans.
Aug. 29, 1972	Public hearing, conducted by the Baltimore District Corps of Engineers.
	• Maryland Port Authority position paper delivered by Dr. Boyer.
	• Cites reasons for MPA/port support of Hart-Miller project.
Feb. 28, 1973	Draft EIS published by the COE.
April 10, 1975	Public hearing notice.
May 10, 1975	Statement by Mr. Farragut.
	• Discussed land use of Hart-Miller.
	• Environmental matters.
	Congressman Long to COE hearing.
	• Expressed opposition to Hart-Miller.
May 16, 1975	First briefing by Roy Mann Associates.
Aug. 14, 1976	Receipt of final EIS on Hart-Miller.
Nov. 22, 1976	Permit issued by Corps of Engineers for Hart-Miller Island containment area.

A NEW LIQUEFIED NATURAL GAS TERMINAL AT COVE POINT, MARYLAND

A liquefied natural gas (LNG) terminal was built in a remote sector of Calvert County, Maryland, on the western shore of the Chesapeake Bay . The state's interpretation of the "public interest"--an interpretation that had dictated the first steps in the development of a public park in the mid-1960's--changed sharply after Columbia Gas obtained options on a key parcel. The state became a strong proponent for the terminal in the Corps of Engineers' permitting process and was apparently not swayed by the pleas of environmental groups and local citizens. Safety problems--usually the central issue in siting of LNG facilities--were secondary to environmental and open space concerns.

At the eleventh hour a threatened lawsuit brought serious negotiations between the developer and the environmentalists (the Maryland Conservation Council and the Sierra Club). The result? . . . pier-to-shore pipelines buried in an underground tunnel (instead of an over-water trestle) plus other design modifications costing $23 million and long-term limitations on the future development of the Columbia parcel.

A key lesson: sufficient incentives must be built in to encourage the project sponsor to seek an accommodation of conflicting interests, if unsatisfactory outcomes are to be avoided. In this case, the state bureaucracy did not provide those incentives.

COVE POINT LNG TERMINAL

In September 1970 the Columbia Gas System and the Consolidated Natural Gas Company signed an agreement with El Paso Natural Gas to purchase the equivalent of 650,000,000 cubic feet per day (MMCFD) of natural gas for 25 years. The gas would be transported from Algeria in the form of liquefied natural gas (LNG) aboard specially built cryogenic tankers owned by El Paso. LNG is produced by cooling natural gas to -260°F, a process that reduces its volume to approximately 1/600 of its gaseous state.

The site selected by the two companies to receive and regasify the cargo was in a remote section of Calvert County, Maryland, just north of the entry of the Patuxent River into Chesapeake Bay, about 80 miles (128 km) south of Baltimore. Columbia LNG Corporation, a subsidiary of the Columbia Gas System, is responsible for the construction and operation of the facility. The location was ideal from the perspective of the two companies, for its proximity to the Atlantic Seaboard Transmission Line would enable them to minimize the cost of pipeline construction. Moreover, the remote location, particularly the absence of nearby residents, encouraged them to anticipate few difficulties in obtaining the required permits for construction and operation.

The procedures required for licensing an LNG terminal are labyrinthine; more than 49 separate permits were required by the companies before operations could begin at Cove Point (see Attachment I). The first application was submitted in August 1970, when the Calvert County Commissioners received a request to rezone a 300 acre (120 ha) tract in the middle of the optioned site of 1,000 acres (400 ha) from agricultural to light industrial purposes. The final permit was granted more than 6 1/2 years later when the U.S. Coast Guard issued a license for vessels under 20 tons to enter the terminal. The entire process was expensive and time-consuming for the companies, but, in the final analysis, it proved an effective tool in molding a workable compromise among conflicting interests. For, despite its remote location, the Cove Point terminal project proved to be controversial.

PROPOSAL

The Cove Point terminal is one part of a system for supplying natural gas to customers of the two companies. Other elements include a fleet of nine LNG carriers and a liquefication facility at Arzew, Algeria. Each of the carriers has a capacity of 125,000 cubic meters, which translates into approximately 786,000 barrels of LNG, or 2.6 billion cubic feet of gas. The ships are approximately 940

ft (286.5 m) long with a draft of 36 ft (11 m); in terms of oil tanker capacity, each ship can be equated to a tanker of 63,000 DWT.

The Cove Point project consists of a tanker berth located about a mile offshore in Chesapeake Bay, four storage tanks, and gas processing facilities. The berth is a 2,500-ft (762 m) pier, capable of mooring two ships simultaneously. Originally, it was to be connected to shore by a 6,000-ft (1,828 m) concrete trestle. Each of the four tanks has a capacity of 375,000 barrels of LNG, which is equivalent to approximately 1.25 billion cubic feet of gas. The terminal provides storage capacity for over 5 billion cubic feet. The LNG is to be gasified and moved through the distribution system at the rate of 1 billion cubic feet a day, emptying two tanks, or one ship, in 2 1/2 days.

The terminal itself is located on approximately 300 acres (120 ha)--less than one third of the total site. The actual land occupied by structures, equipment, and roads is 60 acres (24 ha). Spokesmen for the companies asserted that the terminal would provide employment for 90 people, with a payroll of approximately $1 million annually, and that the project would provide about $1.5 million in taxes to Calvert County and to Maryland. (See Chronology.)

PROBLEMS

The site selected by Columbia for the terminal had been previously planned as part of the Calvert Cliffs State Park. The history of the park began in 1964, when the state of Maryland conceived the idea of creating a recreational area in Calvert County--the only one of Maryland's 24 subdivisions that had not participated in state and federal programs for development of public recreation lands. The acquisition of Cove Point was recommended by the State Director of Forests and Parks, Spencer Ellis, on March 4, 1966. The goal was to acquire about 1,800 acres (720 ha) of land. On June 24, 1967, the state of Maryland and the Bureau of Outdoor Recreation (BOR) of the Department of the Interior signed a contract providing for joint funding for the purchase of 847 acres to add to land previously bought. The "take line" was established, one year later, by the Maryland Board of Public Works, which comprised Governor Spiro Agnew, Comptroller Louis Goldstein, and State Treasurer John Leutkemeyer.

By November 13, 1968, state and federal officials had agreed on all phases of the contract, which called for spending $513,282 on a 50/50 basis. The state received about $87,000 from the federal government for land acquisition by 1970. However, Maryland's bond issue crisis in 1969 and 1970, when interest rates exceeded limits set by

the General Assembly, halted negotiations with private landholders as well as condemnation proceedings. The largest single holding, a 734-acre (294 ha) tract in the southern section of the proposed park, remained unacquired during the crisis. This portion began where the cliffs descended to a sandy beach which ran toward Cove Point. Considered unique parkland, the southern section contained a 200-acre (80 ha) freshwater marsh behind a sand barrier.

The financial crisis was over by April 1970, and the state uncovered sufficient funds to purchase the remaining land areas for the park. By this time, however, Columbia had purchased options on the 734-acre (294 ha) tract as well as two additional land packages of 155 (62 ha) and 152 acres (61 ha), the latter owned by one of the Calvert County commissioners. The company paid $2.1 million for the land (about $2,000 an acre). As a result, the state owned only 1,000 acres (400 ha) of the proposed 1,800-acre (720 ha) park, all in the northern section and without easy access to the shore.

Columbia claimed that it did not learn of the proposed park or the contract between the state and BOR until November 1971. The plan, however, was not a secret. In January 1970 the Maryland Department of Natural Resources had prepared a "Report on Master Planning for the Calvert Cliffs State Park," which described the plan and warned that "a diminished park will not be as successful." Moreover, the State Director of Forests and Parks claimed that Columbia was privy to the contract between the state and the BOR. But the company was not the only actor to ignore the park proposal. On August 11, 1970, the Calvert County commissioners approved the rezoning request unanimously, with Commissioner Grover, the owner of the 152 acre tract sold to Columbia, abstaining. The proposal was supported by the local business community and the Beach Association and was opposed by the Calvert Civic Association. The records of the hearings indicate that Maryland "made ... [no] representations about its contractual agreement with the federal government to buy the same land."

Maryland officials clearly wished to avoid any public discussion of the conflict between park development and the Columbia project. In August 1971 the Maryland Board of Public Works approved Columbia's request for a wetlands permit to dredge Chesapeake Bay off Cove Point for the construction of a trestle pier. No mention was made at this hearing of the state contract with the BOR to develop a park. The board, however, was clearly aware of the agreement, since two of its members, Louis Goldstein and John Leutkemeyer, had helped establish the "take lines" for the state park two years earlier.

But if company spokesmen and state and local officials sought to downplay the conflicting plans for the area, the Department of the Interior (DOI) was not prepared to ignore the problem. In April 1971, when Columbia applied to the Corps of Engineers for a permit to construct a trestle in the Bay, DOI intervened. William Spaulding of the Bureau of Sport Fisheries and Wildlife recommended denial of the permit on the grounds that:

> It will ... seriously jeopardize the potential for a high quality experience which presently exists in the area. Of particular concern to this Department is the effect of such a project upon the on-going Federally-assisted acquisition, expansion, and development of the Calvert Cliffs State Park located on adjacent property.

Maryland's Secretary of Natural Resources, James Coulter, responded to DOI's complaint by stating, "After careful study, bearing in mind that one of our prime responsibilities is the protection of Maryland's natural resources, we have reached the conclusion that the proposed project is in the best interests of the public."

A meeting was arranged in Philadelphia in early November 1971 to clarify the issue. The BOR accused Maryland officials of failing to inform the bureau of their changing attitude about the Calvert Cliffs contract of 1967. The accusation was rejected by Maryland officials, who pointed out that the state is entitled to seek amendments to the initial agreement and had done so on a number of occasions. Moreover, state officials insisted that the Columbia project was not in conflict with their overall plans for open spaces and recreational areas, arguing that:

> ...it is in the best interests of the public...[to]...keep... a sizeable area in open space...by allowing Columbia to construct the proposed liquefied natural gas terminal. If that proposal is approved, the State intends to apply for an amendment to our request for Land and Water Conservation Fund support. If the proposal fails to become a reality or in the very unlikely event that Columbia attempts to develop the land for other purposes, the State should purchase the land using the federal assistance provided under the project agreement.

OPPOSITION

Support of the Columbia project by state officials eased the company's problem of obtaining the necessary state permits for construction. But opponents of the terminal--largely, but not exclusively, environmental interests--succeeded in eliciting support from a number of state legislators and federal officials. The ensuing battle, which consumed the greater part of 1972, was fought simultaneously on three levels: (a) in the Maryland Legislature; (b) at the Federal Power Commission; and (c) at the Bureau of Outdoor Recreation.

The first step to block development of the LNG terminal was the introduction of legislation by State Delegate Frank Heintz of Baltimore City to require the Department of Natural Resources to purchase the land owned by Columbia. Heintz argued that "somewhere within the executive department, a decision was reached that the gas facility was to be given preference over the state park," and he claimed that the decision was "another example of the executive department making a decision that circumvents and indeed alters legislative policy decisions."

Hearings on the Heintz bill were held before the House of Delegates Environmental Matters Committee on February 16, 1972. Secretary Coulter opposed the bill, claiming that "his department [Natural Resources] had decided that it would be in the best interests of all the citizens of the state to allow the gas terminal to take precedence over the southern portion of the park." Coulter justified the decision on the grounds that new air pollution standards would be unenforceable without adequate supplies of natural gas, which could "replace the need for oil with a high potential for both air and water pollution with a clean fuel." Moreover, Coulter argued that the LNG plant would ease the growing energy crisis on the East Coast. This perspective was shared by the Baltimore Gas and Electric Company, which claimed that preventing the terminal from being built as planned would "cause a very serious curtailment of natural gas supply in the area."

Supporters of the Heintz bill did not dispute the need for more natural gas, but objected to the site for the terminal. Heintz feared that the LNG plant would generate industrial growth in the area and that the state would "totally run out of adequate recreation areas." But supporters also resented the lack of communication between state authorities and the public. The League of Women Voters, testifying at the hearings in support of the legislation, expressed this resentment:

> The state legislature mandates a park. Take lines are established. Appropriations are made and then by some sort of hocus-pocus a special piece is exempted and becomes available to a special buyer. There is no public hearing. There is no legislative review.

In response, Secretary Coulter claimed that the site would minimize environmental degradation, but he confessed that no formal report examining alternative sites had been prepared. A spokesman for Columbia stated that Cove Point was the only location acceptable to the company. He did provide verbal assurances, however, that satellite industries would not be developed on the remainder of the land. The response, apparently, was persuasive; on February 24, 1972, the Heintz bill was killed by the Environmental Affairs Committee.

The setback in the legislature shifted the focus of opposition to the Federal Power Commission, whose approval was required for both the importation of LNG and the construction and operation of the Cove Point facility. The original application was filed by Columbia in September 1970, and hearings took place between April and July of 1971. On August 16, a draft environmental impact statement was submitted by the FPC staff to pertinent federal, state, and local agencies. Further hearings were held in January 1972 on a number of amendments to the basic application that were filed after the initial hearings. Throughout this lengthy process there had been no substantial opposition to the project expressed to the FPC. But as the legislative route was becoming increasingly difficult, opponents turned to the FPC.

On February 22, 1972, the Sierra Club and the Maryland Conservation Council petitioned the FPC to intervene in the proceedings on Columbia's application. Although the hearings had been completed, the FPC agreed, on March 24, to allow the two groups to present their views on the proposal. The effort was in vain: on May 22 the Hearing Examiner determined that the application should be granted.

Project opponents filed exceptions to the examiner's decision, claiming that they had not received sufficient notice of the hearing on May 22 and were unable to assemble expert witnesses on the potential ecological threat from the terminal. Ronald Wilson, the counsel for the Sierra Club and Maryland Conservation Council, was particularly upset with the failure of the commission to circulate the August 1971 environmental impact statement to interested citizen groups:

> One of four points of exception is that the commission failed to follow its own procedures with respect to how they prepared the environmental statement and how they notified the public. Because of that disregard of their own rules we were prejudiced because we could not appear before the hearing in January.

In addition to pointing out these procedural objections, Wilson contended that the commission had failed to give adequate consideration to other sites, several of which were available in Baltimore Harbor.

A spokesman for the FPC responded that all interested parties were informed of the hearing and were given adequate opportunity to testify. This view was supported by the commissioners themselves in their Findings and Order for Docket #CP71-289, which contained a review of the history of the proceedings since their inception in September 1970. The commissioners pointed out that:

> As a result of the filing in November 1971 of amendments to the basic applications, further hearings were held from January 11 to January 24, 1972. At that time, as at the initial hearings, all parties had the opportunity to submit testimony on environmental matters and to conduct cross-examination on such matters. A representative of the Sierra Club was present during the January 1972 hearings but declined an invitation to participate.

The project was formally approved by the FPC on June 28, 1972. Additional hearings were held on appeal in August, but the FPC reaffirmed its original decision on October 5, 1972.

While the fight was continuing at the FPC, project opponents sought another mechanism to delay or defeat the project. In order to bring in floating construction equipment to build the trestle, it would have been necessary to dredge a channel 4,200 ft (1,280 m) long, 12 ft (13.6 m) deep, and 125 ft (38 m) wide. The volume of dredge materials would amount to 125,000 cubic yards (95,000 m^3) and would be deposited in a dry ravine on the terminal property. Two major permits were required before construction could begin--a wetlands license from the state of Maryland and a permit from the Corps of Engineers (COE). On May 5, 1971, a Public Wetlands hearing took place in Prince Frederick, Maryland, the seat of Calvert County. The

Maryland Department of Natural Resources found that the dredging, the disposal of dredged material, and the crossing of the tidal marsh would have no lasting adverse effect on the environment. Opposing views were heard at the hearing, but the Board of Public Works approved the license on August 18, 1971.

The second license, however, could not be obtained as easily. The District Engineer of the Baltimore District COE refused to issue a permit for construction of the trestle "until there was agreement between all federal agencies." This meant, in particular, that Maryland officials would have to obtain the concurrence of the BOR to their revised plans for Calvert Cliffs State Park. On March 13, 1972, the state of Maryland formally requested that approval. The amended plans, which were prepared by the Department of Natural Resources after a meeting with the BOR staff on February 10, called for acquisition of 422 acres (169 ha) on the north side of the existing park to replace the 870 acres (348 ha) that had been acquired by Columbia. The result would be a 1,400-acre (560 ha) park, somewhat smaller than that originally envisioned.

State officials had attempted to persuade Columbia to allow access to its shoreline land by park visitors. The company refused the request but agreed to maintain 700 acres (280 ha) of its land as open space, including approximately 190 acres (76 ha) of freshwater marsh, and to lease a portion of the southern end of its property to the Cove Point Beach Association. Although possibly disappointed with this refusal, the state felt that the company's offer was compatible with its open space program. Indeed, the cover letter that accompanied the amended plan claimed that "the use of state and federal money to buy reduced acreage to the north provides a park in some respects superior to that originally planned."

The contention that the new park would be superior to the original proposal was disputed by the opponents of the LNG terminal. Armin Behr, President of the Maryland Conservation Council, claimed that "Delegate Frank Heintz told us that in his investigations, he was unable to find any basis for a reversal of the judgments stated in the 1970 'Report on Master Planning--Calvert Cliffs State Park' favoring the inclusion of the Cove Point area in the park." A pamphlet prepared by the Potomac Chapter of the Sierra Club and the Conservation Council to elicit support for their opposition called attention to the master plan, which claimed, among other things, that "a diminished park will not be as successful."

Once again, however, the effort to stop the project was unsuccessful. On June 22, 1972, the DOI, on behalf of

the BOP, notified the District Engineer in Baltimore of its decision to remove objections to the granting of the permit to Columbia. As a result, the Corps of Engineers approved the building of the pier on August 31, 1972.

ACCOMMODATION

With the approval by the Corps of the necessary dredging permit, the bureaucratic battle was essentially won. Yet victory was short-lived, as opponents shifted the battle to another level--the courts. The legal objection was to the October 5 decision of the FPC to reaffirm its approval of the project. Opponents contended that the proposed terminal would mar the environment and that other sites that could serve Columbia had not been adequately considered by either the company or the FPC.

Although both Maryland officials and Columbia had steadfastly refused to seek an accommodation with opponents during the protracted bureaucratic battle, the lawsuit stimulated the company to negotiate a compromise. The prospects that the court might reverse the FPC decision were not substantial, but additional, lengthy delays were possible. Columbia could not afford any further postponement, for its supplier, El Paso Natural Gas, was in danger of losing its contract with the Algerian government to purchase the gas for 30.5 cents per thousand cubic feet (MCF). The Algerians had negotiated contracts with other parties at a higher price after concluding their agreement with El Paso and were talking about a renegotiated contract. Thus Columbia needed a firm agreement by the end of December 1972 that the Cove Point terminal would not be challenged, to ensure that the Algerians would not cancel the contract to supply gas.

During November, project opponents held discussions with Columbia to work out an accommodation. The conservationists wanted Columbia to deed to the state government the 700 acres (280 ha) it had promised to keep as open space. This would amount to a gift of about $1.7 million. Columbia, however, was unwilling to lose control over the land surrounding its terminal. Eventually, a compromise was reached between the contending parties, stipulating, among other things, that:

- pipelines, housed in underwater tunnels, would link the unloading platform to the storage tanks;
- no structures other than the tunnel would be built on the shoreline;

- a scenic easement would be given to the state of Maryland to guarantee that the 600 acres (240 ha) of land not rezoned for the terminal would be maintained as open space;

- fifty acres (20 ha) or more of the open space at the southwest portion and 75 acres (30 ha) or more at the northern end would be made accessible to the public for recreational purposes; and

- Columbia would not use the 300 acres (120 ha) of rezoned land for any purposes other than an LNG terminal and expansion of facilities beyond a specified limit would require the approval of the Sierra Club and the Maryland Conservation Council.

The agreement was contingent upon FPC approval of the revised plan for the terminal. The two opposition groups promised to support the company in its attempt to obtain the necessary authorization from federal agencies. The petition to amend the opinion of October 5, 1972, was filed by Columbia on December 8. The U.S. Court of Appeals was also petitioned for permission to approach the FPC with the revised plan; that permission was granted on January 2, 1973. Public notice of the Petition to Amend was published in the Federal Register on December 14, 1972. No protests or requests to intervene were received, and authorization for the terminal revisions was granted by the FPC on March 30, 1973.

The extra cost of the modifications was estimated to be $23 million out of a total of about $1.7 billion for the entire project, including the LNG carriers. The additional cost for the tunnel was about $17.4 million; a second set of LNG unloading and vapor return lines cost $2.6 million and the remaining $3 million was related to the mooring dock. The increase in costs would lead to an approximate extra price to the consumer of 2 cents/MCF.

CONCLUSIONS

Three years elapsed from the time Columbia initiated its rezoning request with the Calvert County commissioners until the first dirt was moved for site preparation. In the long run the delay did not interfere with Columbia's plans, since problems in the construction of the liquefication facility at Arzew delayed the importation program well beyond the projected 1975 date. The Cove Point terminal is currently completed, and the first shipment of gas was received in the spring of 1978.

From its inception the Cove Point controversy was enmeshed in the Byzantine politics of Maryland. The abrupt reversal by state officials of recently developed plans for a state park at Calvert Cliffs and the reluctance of the Bureau of Outdoor Recreation to accept alterations in the contract with Maryland set the stage for the ensuing battle between conservation interests and project proponents. Maryland officials were strong supporters of the Columbia project; indeed, a major portion of the battle was fought by the state on behalf of the company. As a result, the state bureaucracy was as reluctant to seek an accommodation as the company, and the opponents inevitably moved the struggle to more hospitable environments in the state legislature, the federal bureaucracy, and, eventually, the courts.

Importation of liquefied natural gas has been a controversial issue in the United States, largely because of the dangers involved in handling an explosive and highly flammable cargo. In Maryland, however, the issue was not primarily safety but rather the environment. The remote location selected by the company for its terminal did not eliminate opposition. Environmental interests were much more concerned about recreation areas and open space than about safety; they proposed, in fact, alternative sites in the more inhabited areas of Baltimore Harbor. The struggle was precipitated, of course, by the infringement of the project on the proposed state park at Calvert Cliffs, but environmental interests may well have objected to the site even if no formal plan had been formulated.

The major point of interest in the Cove Point controversy, however, is its eventual resolution. Columbia LNG proved unwilling to discuss any revisions in its plans until an economic imperative, in the form of the threatened termination of its contract with El Paso and the Algerian government, intervened. The complex permit process required for construction and operation of an LNG terminal did not generate an accommodation among conflicting interests; it did, however, delay the proceeding sufficiently to allow the intervention of economic reality. The ensuing compromise may have satisfied neither party and, possibly, may not have been in the best interests of the public, but no accommodation would have been possible if the process of obtaining the necessary permits had been speeded up.

Once more, one finds as well the enigma of the citizen participant in an issue of this kind. In the words of one of the leading participants: "Hundreds of volunteer hours, thousands of volunteer dollars, headaches, divorces, and other agonies went into the fray. Citizens who spend their leisure time on this kind of project are not usually interested in compromise!"

There is no question that this type of citizen intervention is personally demanding and often underfinanced. In this particular case the citizens of Calvert County who cared about its shoreline (in the words of one participant) "had already pretty much exhausted themselves on the Calvert Cliffs nuclear plant fight during 1969 and 1970 and were in no mood to do battle soon again--either emotionally or financially in 1971 and 1972."

The lesson of Cove Point is clear. Sufficient incentives are necessary to encourage project sponsors and developers to seek an accommodation with conflicting interests if unsatisfactory outcomes are to be avoided. The behavior of Maryland officials in this controversy suggests that the state bureaucracy does not always provide those incentives. The participation of other actors, with different interests and concerns, is indispensable if the public interest is to be served. The multiplication of permits, and therefore regulators, may not be the only solution to the problem; but unless structured incentives for compromise are established, efforts to speed up the permit process will intensify, rather than resolve, the problem.

CHRONOLOGY

1964	Calvert Cliffs State Park proposed.
March 4, 1966	Acquisition of 1,800 acres off Calvert Cliffs--Cove Point property recommended by Maryland Director of Forests and Parks.
June 24, 1967	State of Maryland and Bureau of Outdoor Recreation (BOR) sign a contract under authority of the Land and Water Conservation Act to purchase 847 acres in addition to approximately 1,000 acres previously bought.
June 24, 1968	State Board of Public Works establishes "take lines."
November 13, 1968	Maryland and BOR agreed on 50/50 cost sharing of $513,282 for land acquisition.
April 1, 1968-1970	Land acquisition halted due to Maryland bond issue crisis, due to interest rates exceeding State legal limits.
April 1, 1970	State receives funds to continue acquisition of 847 acres to be added to 1,000 acres already owned.
May 20, 1970	Columbia LNG announces it has purchase options for over 1,000 acres at Cove Point, which included proposed park land.
August 6, 1970	Columbia requests rezoning of 300 acres from agricultural to industrial use before Calvert County Commissioners at local hearing.
August 11, 1970	Rezoning approved.
September 8, 1970	Columbia Gas announces 25-year agreement with El Paso Natural Gas to purchase LNG equivalent to 300 million cubic feet of gas a day for 58 cents MCF, to be delivered starting in late 1974.
September 21, 1970	Application filed with Federal Power Commission to import LNG--Docket #CP71-68.
April 7, 1971	Application filed with Corps of Engineers to build mooring dock and pier.
April 8, 1971 to July 8, 1971	Initial hearings commenced before Federal Power Commission--first round.

May 5, 1971	Public hearing in Calvert County for Wetlands Permit.
August 18, 1971	Wetlands Permit #71-107 approved by Maryland Board of Public Works allowing dredging to construct 5,900 - ft. pier.
August 1971	Draft Environmental Impact Statement prepared by FPC staff.
September 28, 1971	Letter from Department of Interior Sport Fisheries and Wildlife Bureau requesting the Corps of Engineers to delay awarding permit to build dock and pier.
November 1, 1971	Meeting with officials of the Bureau of Outdoor Recreation, State of Maryland, and Columbia in Philadelphia to discuss agreement between State and Department of the Interior.
January 11, 1972 to January 24, 1972	Second round of hearings at FPC.
February 16, 1972	State Delegate Frank O. Heintz introduces legislation to prohibit construction of Cove Point terminal by requiring Maryland to purchase the property.
February 24, 1972	Heintz Bill killed in the Environmental Matters Committee of the Maryland House of Delegates.
March 13, 1972	Amendment #5 to the BOR agreement, including new Land Use Plan for Calvert Cliffs, sent to BOR from Maryland Department of Natural Resources.
May 22, 1972	Initial Decision of FPC Hearing Examiner approved Columbia Gas application.
June 22, 1972	Department of Interior withdrew objection to the Corps of Engineers, basing decision on Land Use Plan dated June 15, 1972.
June 28, 1972	FPC endorsed decision of Hearing Examiner - Opinion #622.
August 31, 1972	Corps of Engineers approved permit to build pier.
October 5, 1972	FPC reaffirmed Opinion #622 (June 28) with Opinion #622-A.
October 5, 1972	Sierra Club and Maryland Conservation Council appeal ruling to Court of Appeals.

December 5, 1972	Columbia Gas and Sierra Club-Maryland Conservation Council conclude compromise. Major concession is construction of a tunnel to replace pipeline trestle/ pier.
December 8, 1972	Columbia petitions FPC to amend Opinion #622 and #622-A to allow tunnel rather than trestle.
March 30, 1973	FPC grants petition.
August 1973	Site preparation begins at Cove Point.

Attachment I

COVE POINT PERMITS

TERMINAL

Regulatory Agency	Description of Action	Application Date	Permit Date
Federal Power Commission	Opinion No. 622 CP71-68	9/21/70	6/28/72
Federal Power Commission	Opinion No. 622A CP71-289	6/4/71	10/5/72
Federal Power Commission	Amended - Tunnel Plan	12/8/72	3/30/73
Calvert County Department of Inspections and Permits	Site grading for office building	6/9/72	6/14/72
Calvert County Health Department	Deep drilled well and sewage disposal system Completion certificate	6/19/72	7/13/72 11/15/72
Calvert County Department of Inspections and Permits	Construction of office and maintenance building	6/22/72	7/21/72
Department of the Army, Baltimore District, Corps of Engineers	Construction of pier	4/7/71	9/1/72 8/31/72
State of Maryland, Department of Natural Resources	Water Quality Certification		12/18/72
State of Maryland, Department of Natural Resources	Wetlands License	12/4/72	12/26/72
Department of the Army, Baltimore District, Corps of Engineers	Construct unloading terminal and tunnel and dredge in Chesapeake Bay	12/4/72	12/29/72
State of Maryland, Department of Natural Resources	Appropriate and use ground water for sanitary facilities	10/21/72	11/28/72
State of Maryland, State Highway Administration	Construction of two entrances Extension	11/20/72	3/12/73 7/5/73
Calvert Soil Conservation District	Erosion and Sediment Control Measures	4/5/73	5/14/73
Calvert County Department of Inspections and Permits	Site grade and preparation for construction; LNG terminal process area	4/5/73	5/18/73
Calvert County Department of Inspections and Permits	Construction of Cofferdam	8/14/73	8/15/73
State of Maryland Fire Marshal	Approval of office and warehouse		8/31/73
State of Maryland, Department of Forests and Parks	Burning debris		9/17/73
State of Maryland, Department of Natural Resources	Small pond permit		10/1/73
Calvert County Department of Inspections and Permits	Site grading in lowland area	10/12/73	10/12/73

Attachment I (Cont)

Regulatory Agency	Description of Action	Application Date	Permit Date
Calvert County Department of Inspections and Permits	Construction of LNG storage tanks	10/15/73	10/24/73
State of Maryland Comptroller of the Treasury	Sales and use tax direct payment permit		1/2/74
Calvert County Health Department	Construction of deep drilled well and sewage disposal system	10/25/73	1/29/74
	Completion certificate		2/24/75
Calvert County Health Department	Construction of deep drilled well and sewage disposal system	10/25/73	1/29/74
	Completion certificate		1/7/75
State of Maryland, Water Resources Administration	Appropriate and use water for sanitary facilities, cooling water, testing and fire protection		1/31/74
Federal Communications Commission	Radio license		4/15/74
State of Maryland Fire Marshal	Approval of fire protection plan		5/30/74
Department of Transportation, U.S. Coast Guard	Private aids to navigation (5 lighted survey towers)	7/5/74	7/18/74
State of Maryland Fire Marshal	Approval of use of tunnel by personnel		8/26/74
Calvert County Department of Inspections and Permits	Construction of 2 fire water storage tanks	9/18/74	9/20/74
Calvert County Department of Inspections and Permits	Construction of 12 buildings for use with receiving terminal	10/21/74	10/23/74
State of Maryland Environmental Health Administration	Construction of emergency vent heater	7/11/75	9/16/75
State of Maryland Environmental Health Administration	Construction of LNG vaporizer	7/11/75	9/16/75
State of Maryland Environmental Health Administration	Construction of emergency purge nitrogen vaporizer	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of fire water tank heater	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of gas turbine fuel gas heater	7/11/75	9/17/95
State of Maryland Environmental Health Administration	Construction of boil-off gas reheater	7/11/75	9/17/75
State of Maryland Environmental Health Administration	Construction of gas turbine generator	7/11/75	9/17/75
Calvert County Department of Electrical Inspections	Electrical permit for onshore ventilation building	9/5/75	

Attachment I (Cont)

Regulatory Agency	Description of Action	Application Date	Permit Date
Calvert County Department of Inspections and Permits	Construction of 7 offshore buildings	1/23/76	2/3/76
State of Maryland Fire Marshal	Review of electrical area classifications		6/4/76
Calvert County Fire and Rescue Commission	Inspection of fire apparatus		8/3/76
Calvert County Department of Inspections and Permits	Site grade for warehouse		8/11/76
Calvert County Department of Inspections and Permits	Construction of warehouse		8/11/76
Calvert County Department of Inspections and Permits	Construction of sign at terminal entrance	8/27/76	8/31/76
United States Department of the Interior	Seagull Depredation		11/9/76
United States Coast Guard	Approval of Survival Capsules		6/17/76
State of Maryland	License and Regulation Certificate for Offshore Elevator		1/7/77
United States Coast Guard	Certificate of Inspection for Miss Methane		9/30/76
United States Coast Guard	License of Vessel under 20 tons		1/31/77

HOUSTON CONTAINERPORT-BARBOURS CUT TERMINAL: TRAUMA FOR MORGANS POINT, TEXAS

The Barbours Cut Container Terminal, launched in 1970, has been a financial success for the Port of Houston--and for the booming Houston region. It has been something else again for the residents of 140-year-old Morgans Point.

The Port Authority's first bite into the town was a modest one, but later bites have involved a city park, a cemetery, a City Hall, and portions of several streets and alleys along with the sewer and water lines located therein.

The Port Authority has said it made no commitments; some of the residents see it differently. And it is not clear that the end is in sight. The town's zoning code has been ineffectual in the face of the powers and prestige of the Port of Houston Authority.

Some other local problems: the tax-exempt Port Authority has eroded the town tax base, and the public safety budget is out of kilter. Many homeowners who sold out under pressure found hidden pitfalls they knew nothing about when the payments for their homes actually reached them.

The trauma of a small town went comparatively unnoticed in the euphoria of a booming metropolitan area. But should it have?

BARBOURS CUT TERMINAL
MORGANS POINT, TEXAS

On June 29, 1972, the LASH vessel Bilderdyk, of the Combi Line, tied up at the Barbours Cut Terminal of the Port of Houston to help celebrate the formal dedication of phase one of the new LASH-container-RO/RO facility, located at the head of Galveston Bay in Morgans Point, Texas. Barbours Cut, an entirely new, multimillion dollar port complex, is Houston's answer to the challenge of the larger container- and barge-carrying ships that are unable to maneuver through the landlocked sections of the ship channel, where sharp curves and restricted widths are the rule rather than the exception.

Designed to cover 600 acres (240 ha) and to offer berths for up to twenty 800-ft (243.8 m) ships, Barbours Cut--with a channel 40 ft (12.2 m) deep and a turning basin 1,600 ft (487.7 m) wide--constitutes one third of the Port of Houston's new "tri-port" system. This concept, including the Bayport liquids terminal, also on Galveston Bay, and the break-bulk facilities in the upstream Turning Basin, is designed to ensure that Houston stays abreast of the latest technologies in water transportation equipment with facilities capable of meeting any reasonable demand that may arise.

Unfortunately for the residents of the town of Morgans Point, Texas, the Port of Houston Authority selected their village as the site for this latest expansion. Situated on a finger of land known as Morgans Point, located at the head of Galveston Bay alongside the Houston Ship Channel, where it opens out from the mouth of Buffalo Bayou into the bay, the little town has been in the backwater of Houston for more than a century. The domicile for 593 persons, many of them retired or near retirement age, Morgans Point was also the location for several small commercial boat works, a number of fishing piers, and a water pollution research station operated by Texas A&M University. However, a major part of the northern sector of the village, along with the boat works, piers, and the research station, has been taken over by the Port Authority for the new intermodal cargo terminal.

When the planning for Barbours Cut began, the port already held title to several hundred acres of land in the vicinity. However, the unexpectedly rapid growth in container trade, along with an increase in average vessel size, created a need for more space than the port controlled. The acquisition of additional acreage, in some cases through the power of eminent domain, displaced a

number of Morgans Point residents from their homes and caused a severe hardship for some of the retired persons.

BACKGROUND

The Port of Houston

When the Port of Houston was first established by city ordinance in 1841, it was ridiculed by experienced world travelers because of its location 50 miles (80 km) from the sea up Buffalo Bayou, a shallow and meandering stream less than 20 ft (6.1 m) wide in the vicinity of the first wharves. Commercially, the port remained in a somewhat primitive state until 1914, when the deepening and widening of the bayou were completed. For the first time, oceangoing vessels were able to navigate from the Gulf of Mexico to the port wharves. Houston's population then was less than 100,000; today, the number of persons inside the city limits is over 1,000,000, while in the metropolitan area there are around 2,000,000 more people.

The growth in waterborne commerce through the Port of Houston and the Houston Ship Channel has kept pace with the other growth indicators of Houston. Some 4,000 ships and 20,000 barges annually handle almost 100,000,000 tons of diverse commodities in and out of the Houston area via the channel entrance in Galveston Harbor.

The primary stimulus to the growth of waterborne trade through the ship channel has been the growth in waterside industry and other industries making heavy use of the indigenous raw materials of the Gulf Coast (petroleum, natural gas, sulphur, limestone, fresh water, brine, and salt) and shipping out finished or semifinished goods in bulk form by rail, pipeline, and water. Also, in recent years, shrinking local supplies of some commodities, such as petroleum, have caused a rise in imports carried by barge and ship, resulting in greater demands on port facilities.

Although the majority of the waterborne tonnage moving in and out of Houston is in the form of liquids, a large volume of general cargo (break-bulk and container) and other dry bulk tonnage has led to a proportional growth along with the liquids. And with the advent of new technology in waterborne transportation, such as supertankers, containers, barge-carrying ships, and similar innovations, new challenges have arisen from the need for channels, wharves, and onshore handling equipment adequate to take full advantage of the latest seagoing developments.

Houston faced an unusually difficult task because of the sharply winding and narrow ship channel. As vessel dimensions have progressively increased, concern for safety

and maneuverability in the congested waterway has also increased. Also, recent and projected growth of the channel-side industrial complex promises to exacerbate the problem in years to come.

In attempting to resolve the dilemma and remain competitive with other ports, Houston has evolved a concept known as the tri-ports. Since most break-bulk cargo and grain moves in vessels of moderate size, the dimensions of the ship channel present no problem for the transit of this type of commerce. Therefore the upstream wharves area near the turning basin has been designated for break-bulk, and the large investment in docks, transit sheds, railroad tracks, and other facilities will still be fully used for this purpose. This area thus becomes one arm of the tri-port concept.

To better accommodate bulk cargos other than grain, the port has dredged two new channels leading directly off Galveston Bay. Both these facilities are designed to provide berths for larger vessels to preclude the need for these ships to venture up the Buffalo Bayou section of the main ship channel. These channels constitute the other two arms of the Houston tri-ports.

One of these channels has been provided at Morgans Point to serve the Barbours Cut Terminal. This facility is designed for barge carriers, such as LASH and SEABEE, and container vessels too large to safely use the main ship channel up to the turning basin area.

Barbours Cut Terminal

Barbours Cut offers several advantages that were instrumental in the Port Authority's decision to build a terminal at the location. First, it offers a saving in turnaround time for vessels because it is only two hours sailing distance from the Gulf of Mexico compared to the six or seven hours for the trip to the main turning basin area. Second, it permits the larger size, new generation LASH, SEABEE, and container vessels to dock without having to navigate the dangerous curves and bends of the upper ship channel, where safety is becoming more of an issue daily. And, finally, it provides for "unlimited" expansion of container staging yards, a freedom that is not possible in the upper turning basin area because of the high density of development around the port.

Other advantages of Barbours Cut include the following: immediate access to the nearby intersection of state highways 146 and 225, both freeways; rail service to the site through port terminal railway facilities; and the

absence of currents in the Barbours Cut Channel, resulting in low sedimentation rates and minimal maintenance dredging.

The City of Morgans Point

Morgans Point, Texas, is a drowsy little village that was settled 140 years ago by Captain James Morgan. Although recognized for its potential as a port many years earlier, nothing much in the form of development took place on the point until Captain Morgan established the first settlement there in 1836, at about the beginning of the Texas Revolutionary War with Mexico. Early French settlers in Texas had long used the spot as a point of entry and had, in fact, named it La Porte (the door). Today, the city of La Porte lies immediately to the west of Morgans Point.

The first major maritime development at Morgans Point occurred in 1864 with the construction of a Confederate shipyard. History was made again in 1876, when Charles Morgan, a descendant of the original captain, first dredged a deeper cut from Morgans Point to Bolivar Pass, along approximately the same route as the present Houston Ship Channel.

This is not the first time the city's existence has been threatened by maritime-related activities. In late 1929, Captain Clyde Barbour steamed into the bay and moved thousands of tons of mud and silt to create today's Barbours Cut. However, two events transpired to halt this development before its completion: the death of Captain Barbour on June 24, 1931, and the Great Depression, which stopped the flow of money.

Barbour had acquired 1,435 acres (581 ha) of land, which was split up after his death. In 1951 the Port of Houston Authority gained title to 445 acres (180 ha) at $900 an acre from the First National Bank of Houston and the Dredging Realization Corporation. The port has subsequently acquired additional land sufficient to give it a strip 2,500 ft (762 m) wide, measured from the center line of the Barbours Cut Channel along the south side of the channel. Some of this additional land, unfortunately, has been dissected from Morgans Point and has involved not only a number of private homes, but also the City Hall, several streets and alleys, part of the municipal water and sewer system, and a city park. Figure 8 shows how the 2,500-ft (762 m) wide strip occupied a significant part of the platted and dedicated area of the city.

A part of the community that has been adversely affected by the port project (the source of more concern on the part of the residents than any other aspect) is the old cemetery. Established by the will of Captain Morgan, the

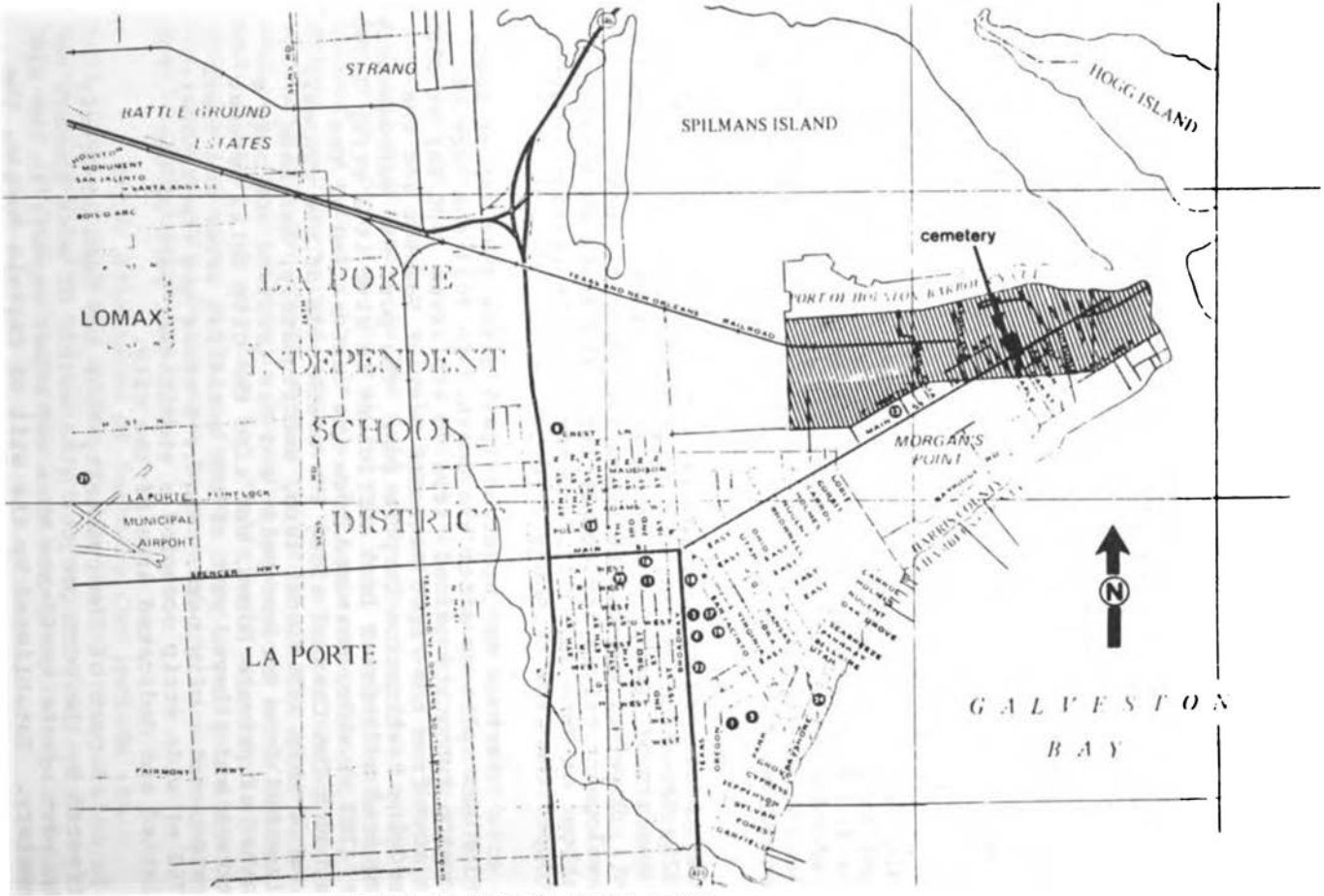


FIGURE 8 BARBOURS CUT TERMINAL AT MORGANS POINT, TEXAS

land on which the cemetery rests was given to the city on the condition that its care and upkeep be perpetual and that all bona fide residents of Morgans Point be provided free burial places.

When land acquisition by the port began, the rumor among the village residents was that this unique plot of ground would be violated. However, spokesmen for the Port Authority reassured them that the cemetery would be spared. Yet, today, less than 5 acres (2 ha) remain from a formerly 60-acre (24 ha) plot of land that once constituted the cemetery. In addition, the remaining piece of ground, when the port is completed, will be totally surrounded by access roads, staging yards, and service buildings of the port complex, as Figures 8 and 9 show. Only an entry drive, with nominal parking space, will remain, and this most likely will be inadequate to accommodate the usual funeral entourage.

SUMMARY OF SALIENT ISSUES

The Port Authority Side

In summary, the Barbours Cut project represents action on the part of the Port of Houston Authority aimed at achieving the greatest benefit for the general public, insofar as efficient maritime services can be construed to be a benefit to the populace in general. The project is an attempt to stay competitive with other Gulf Coast ports, particularly those in the central and western Gulf, by keeping abreast of the latest demands imposed on port operators by the ever-changing technology of water transportation.

A question that probably should be asked, however, pertains to the judgment used by the Port Authority planners and officials in choosing the piece of land on which to build the terminal's land-based components. Why did the port decide to build the wharves, staging areas, offices, and supporting infrastructure on the south side of the channel instead of the north? The south bank was occupied by the town, while on the north the land was, and still is, undeveloped.

Several reasons apply. For one thing, not enough land is available on the north side of the channel. The land that is available is principally man-made, the result of the disposal of dredged materials. Also, as Figure 10 shows, all of the north side land is in a special flood hazard area, while very little land on the south side--except for portions along the channel, which will be bulkheaded and filled, anyway--is subject to flooding. And finally, water and other utilities, as well as streets and

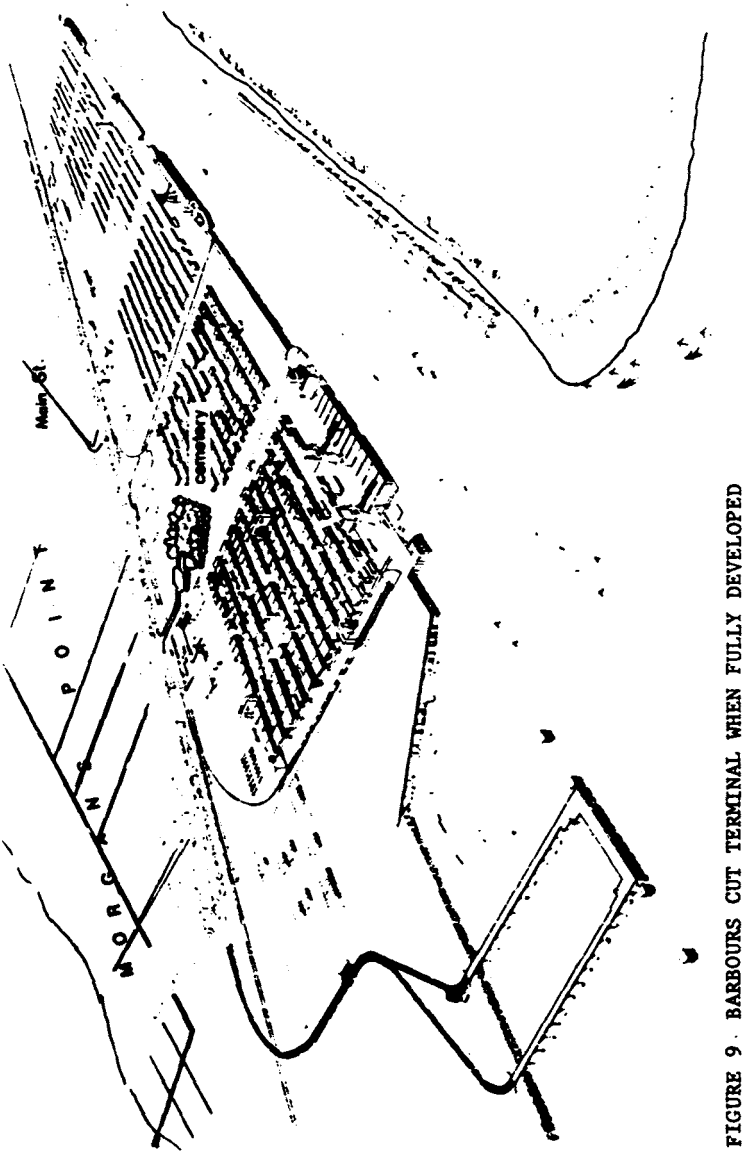


FIGURE 9 BARBOURS CUT TERMINAL WHEN FULLY DEVELOPED

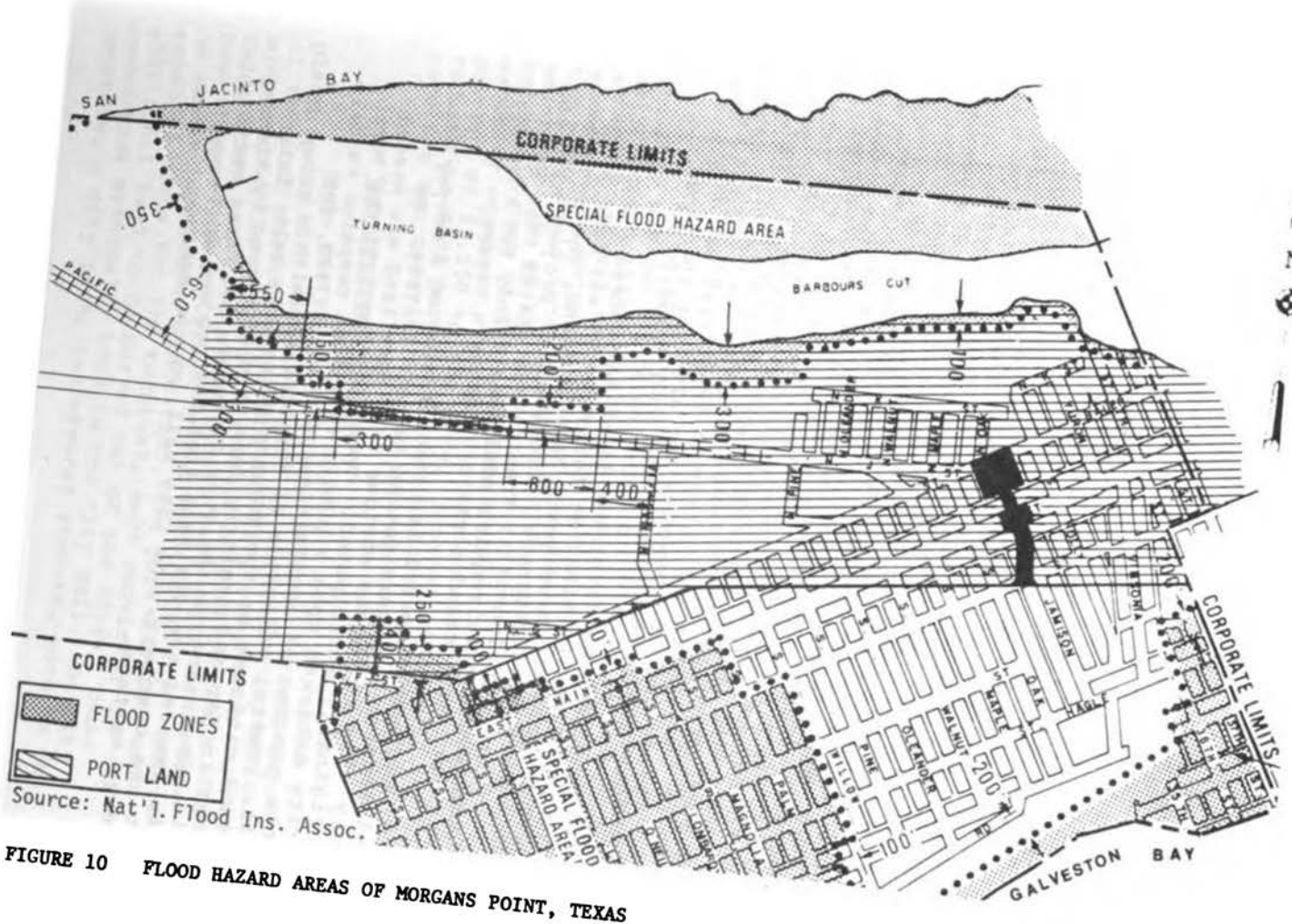


FIGURE 10 FLOOD HAZARD AREAS OF MORGANS POINT, TEXAS

rail service, exist on the south side; all of these would have had to be built if the north side of the channel were used.

Among factors considered by the Port Authority in locating the project was that a sizeable portion of the required land was already owned at Morgans Point, thus reducing the new capital investment required, in comparison to a location elsewhere. This, along with the existence of the old Barbours Cut Channel, made the location a natural choice for the project.

At the heart of the whole idea, besides the providing of more container berths and a LASH terminal for the Port of Houston, was the promise of reduced accident risk because of the ability to berth large vessels at this location instead of running them up the tortuous ship channel route. This latter consideration undoubtedly represents a benefit to the region's population as a whole. Galveston Bay contains within its boundaries a large, highly productive, yet extremely fragile, estuarine ecosystem that is important to both the ecology and the economy of the region. Also, high accident potentials that ships are exposed to as they use the ship channel are becoming even higher as average ship sizes and traffic levels go up. Actions such as those that have resulted in the Barbours Cut and Bayport facilities are therefore beneficial not only from the standpoint of economics but also for increased vessel safety and protection of the environment.

On August 6, 1970, the first announcement concerning the new terminal at Barbours Cut was made. On September 10 of that same year, James Fonteno, one of Houston's port commissioners, discussed the project with the Morgans Point City Council. Then it was stated that the port would eventually require additional land, but that all of this would be located north of East Main Street.

Bids were opened for the dredging of a deeper channel through Barbours Cut on August 12, 1971. By February 1972 it became obvious that more land was needed than originally anticipated. Upon learning this the Port Authority embarked upon a public relations campaign to help ease the process of acquisition. In April 1972, for example, several officials of the port met with a group of concerned citizens at the Morgans Point City Hall; later meetings in May and again in June were addressed by Michael Scorcio, Assistant to the Port Director. At these meetings, Scorcio assured the citizens that the project would not affect the cemetery, the City Hall, or the municipal water and sewer systems.

In late June 1972 the port planners decided that additional land in the town was needed. Taken in this series of acquisitions was the cemetery, the City Hall, a city park, and portions of several streets and alleys with their water and sewer lines. A church was also eliminated at this time.

The City Hall was leased back to the city of Morgans Point for an indefinite period of time for a token rent. Provision was made in the plans of the port to preserve the portion of the cemetery then in use. The city was also compensated for the water and sewer lines located in the closed streets and alleys.

The process of land acquisition was carried out fairly smoothly. The port had individually owned land parcels appraised and made offers to the owners based upon the appraisals. The Mayor, Anthony Polker, agreed early to a price for his holdings and became a strong ally of the Port Authority in convincing other residents to sell their property. His mother, Madeline Polker, 76, felt that the offer for her land was unfair, but finally agreed to sell upon the insistence of her son. Only a few of the tracts had to be acquired through condemnation. By the end of 1976, all of these had been settled, even though litigation was required for some of them.

Among the concessions made by the Port Authority to the city was one concerned with security. In return for the city's cooperation in the land acquisition program-- e.g., agreeing to sell the City Hall and to close certain streets--and recognizing that the day-to-day operation of the port would increase the need for security in nearby neighborhoods of the city, the Port Authority agreed to subsidize part of the additional cost of the strengthened security service. Currently, this amounts to a monthly payment of $1,350 to the city. However, this will be reduced to $500 per month in the near future when the port puts its own security system into operation.

The Citizens' Side

When the Port of Houston Authority first announced plans to build a container port at Barbours Cut, officials of the port assured residents and city councilmen that all elements of the port complex would be located north of East Main Street and little additional land would be needed beyond that already owned by the Port Authority. However, on several occasions since then, the port has announced expanded plans for the terminal, each requiring new and additional land to be carved out of the city. These expansions eventually took in the City Hall, the city cemetery, a city park, and several streets, much to the

chagrin of the citizenry, who recall being told in 1972 that none of these facilities would be affected.

When the Port Authority announced in 1972 that large areas of the town would be required for the terminal, the city council formally petitioned them to dredge the channel 1,000 ft (305 m) further to the west. By doing so, no homes or other improvements would be disturbed. However, this request was rejected by the port owing to excessive cost, and the original location and channel length were retained.

Throughout the whole period of negotiation with the Port Authority, the city of Morgans Point has found itself virtually powerless to resist the port's actions. For example, although the areas taken by the Port Authority are zoned for residential use under the city zoning code, the port has not been deterred from developing the land for industrial uses.

As to security and public safety, the city has been presented with a new set of problems. Morgans Point is a small village without industry, primarily a bedroom community, located in a rural area but within 45 minutes of Houston. Consequently, there are few restaurants, bars, motels, or other commercial establishments in the town catering to the needs of visitors or travelers. Since there is little outside intrusion, crime is almost nonexistent and the necessary peacekeeping has always been handled by a constable, aided by the county sheriff when required.

However, a dozen or so ships a month now call at the new container terminal, and crewmen of these vessels generally get shore leave while their ships are in port. Because the city is a rural area, with no night life other than one rundown tavern next to the old fishing pier near the ship channel, and lacks any form of public transportation connecting it to the big city, Morgans Point offers little to do for the crew members. To date there have been no violent crimes committed ashore, but in several instances, residents have been startled by strangers wandering through yards and garages. And frequently, crew members have been seen walking through various sections of town at all hours of the day and night. Although an innocent action in itself, this activity upsets the residents, particularly the elderly and those women whose husbands are away.

As a result of concern on the part of citizens, the city now has three full-time policemen plus onr patrol car. This has created a burden on city finances that has been offset in part by the $1,350 per month paid by the Port Authority. However, the monthly amount will be reduced to

$500 in the near future if the port has its way. Yet, as the container facility grows, even greater demands will be placed on the local police. Already, the city has rejected an application for a zoning variance to permit construction of a tavern near the port, a type of development that would likely create a new burden on the police force much in excess of the increased tax revenues from such an activity.

Since the new port facility at Barbours Cut is owned by a state agency, all of the land occupied by the port is completely tax exempt. To help offset the drop in municipal income resulting from the removal of so much land from the tax rolls, along with the revenue lost as the result of a 25 percent drop in the city's population and utility connections, the city has undergone a tax revaluation program. This has resulted in an increase in tax revenues sufficient to restore the city's financial stability, but it has also resulted in a large tax increase for the remaining property owners throughout the city.

An increase in vehicular traffic generated by the new container terminal has begun to be felt by the town. Although the Port Authority constructed a new, heavy-duty road leading from the port directly to State Highway 146 on the west, misdirected traffic has moved along city streets to and from the port. Signs prohibiting through truck traffic have been of little help, and street maintenance has had to be increased.

The Port Authority's land acquisition was handled on the basis of offering the owners the fair market value, as determined by an official appraisal of each property. Unfortunately for the owners, particularly those at or near retirement age who were occupying residences they had lived in for 40 or 50 years, fair market value was not in any sense tantamount to replacement cost. Not only was the cost of a replacement house not fully covered, but also relocation costs were not covered. Thus, although the accepted system of paying market value is traditionally considered fair to all parties, it does not wholly compensate homeowners who must relocate, and therefore it is not really fair in practice.

A paradox of our modern society that emerged in the Morgans Point case was the special economic impact that a large cash payment for a home had on the income status of the property seller. The result was a capital gains tax liability that had to be paid, if it could not be deferred under the provisions of current federal and state income tax laws, and that, if paid, reduced the amount of money left to use for the ultimate purchase of a new home. Most persons are aware of the tax issue (although little has been done to compensate for this inequity), but few are conscious of the

other impacts on incomes of elderly and economically disadvantaged persons. As a result of the broad welfare base of the U.S. economy today, many millions of people are dependent upon supplemental sources of income, such as Medicaid and Social Security. Eligibility for this assistance is determined by a family's income and cash resources. In the case of resources, if they exceed $1,500 in value, a person or family becomes ineligible for welfare-type aid, regardless of income level. Some Morgans Point residents suffered through this change in eligibility status.

Under present laws, an individual or family that receives a large sum of money from the sale of a home is given six months to buy another one before the $1,500 limit on resources is applied to the determination of eligibility. However, when fair market value is the basis for selling property, today's inflationary economy effectively prevents buying a replacement residence with the money received. In some cases therefore the property owner stands to lose not only his home, but also his eligibility to receive sorely needed supplemental income.

Another issue that has disturbed many Morgans Point residents concerns the procedure followed by the Corps of Engineers in regard to the permit for the deepening of Barbours Cut Channel. The standard procedure normally followed by the COE in such cases calls for issuing a public notice early in the process and giving the facts of the application, followed by notices for a formal hearing, if such is deemed necessary. Josephine Wakefield, longtime City Secretary of Morgans Point, states that she has no record of receiving either of the above notices for Barbours Cut, even though she regularly receives and files notices on all types of permit applications for projects up and down the length of the Texas coast.

A city council member, George Paulson, states that he indirectly heard about the public hearing from a third party outside of Morgans Point. When Paulson went to the hearing, however, he found it poorly attended, owing, no doubt, to the lack of notice. To the knowledge of both Wakefield and Paulson, no one living in Morgans Point received either one of the notices concerning this project.

Other attempts by the citizens to find out what could be done to better control the development taking place in their town met with little success. A series of meetings of the port commissioners were attended by groups of citizens to discuss the pros and cons of the project. At one meeting a resident raised a question about preparation of an environmental impact statement (EIS). Reportedly, the

reply was that no EIS was required since the project did not involve the use of federal funds.

At another meeting, it is reported, port officials said that a greenbelt would be erected along the perimeter of the project to protect the aesthetic character of the community. To date there is no indication that this will be done.

RETROSPECT ON THE ISSUES

The Barbours Cut Terminal project has been a success in its intended role as a safer berthing facility for large container, LASH, and SEABEE ships. But it has been a serious disruption for the people living in Morgans Point. Much acrimony and bitterness remain among the townspeople, particularly among those adversely affected by the project through loss of homes or other resources. Only a few from the town feel that the situation was handled fairly.

Currently, the townspeople are fearful that the port complex has not reached its full size, especially since the Port of Houston Authority brochures on Barbours Cut state that there is "room for unlimited expansion." This feeling is further bolstered by the statement by Richard Leach, a port official, in mid-1972, that the Port Authority "had never committed themselves as to the amount of land that would be needed for the project."

Clearly, serious deficiencies were ascribable to the Port of Houston in its efforts to communicate with the impacted citizens. The methods used by the Corps of Engineers mainly consisted of utilizing standard mailing lists, by geographical region, of state agencies, county and city offices, affected industries, other federal agencies, certain special interest organizations, and individuals, such as mayors, who could be identified. The Corps also depends upon the applicant to furnish a list of owners of adjoining property and other members of the affected constituency. The fact that some city officials failed to receive notices on Barbours Cut suggests that the notification had significant flaws that contributed to the special hardships that grew out of the project.

Because it appears that some persons, through no fault of their own or through a lack of money management expertise, ended up homeless as the result of a project, one can surmise that a different plan of compensation should have been used. A form of "in kind" payment, whereby the existing residence is relocated to a new site or an equivalent residence is furnished to the displaced owner, might be offered as an option to cash. In either option,

the cost of relocation--including replacement of appurtenant buildings and landscaping--should be part of the package offered. Here the word offered is underscored because, in many cases, the property owner will take what he is offered without realizing how far he can and should go in asking for what actually may only be fair.

What happened in Morgans Point made hardly a ripple in the lives of anyone living outside the community. Officials of the Port of Houston and the local COE District Engineer's office feel that the matter was handled very smoothly. But for the residents who were uprooted, particularly the older ones (several of whom reportedly died within six months of losing their homes), the entire affair has been traumatic to say the least. The adverse effects the citizens of Morgans Point have been subjected to argue that consideration should be given to a close examination of the present system of land-taking and compensation. Although the public good must always have high priority, individual good should not be relegated to the bottom of the list.

LOUISIANA OFFSHORE OIL PORT (LOOP): DEEPWATER PORT ON THE GULF COAST

The Deepwater Port Act of 1974 provides for major modifications in the complex permitting process by placing final federal responsibility with one person (the Secretary of Transportation) and by imposing rigorous time schedules on the involvement of other relevant federal agencies.

The first active test of the techniques of the act occurred in 1976 with formal permit applications from LOOP, Inc. (Louisiana Offshore Oil Port), and Seadock, Inc. (off the Texas coast).

The legislative history reflects a substantial public involvement throughout the process--an involvement obviously made more difficult by the complexity and magnitude of the material. Earlier public contacts had found positive reactions in the Gulf Coast and negative feelings on the Atlantic and Pacific coasts.

For the LOOP-Seadock proposals the preapplication period was nearly four years long and marked by a vast array of public contacts--at all governmental levels, with civic and environmental groups, and with individual neighborhoods and residents. The periods from the filing of the application to the final approval by DOT was only 329 days.

For LOOP, Inc., the tools available in the Deepwater Ports Act of 1974 may well have made the difference in terms of the practicality of this major undertaking.

LOUISIANA OFFSHORE OIL PORT

On January 16, 1976, the Secretary of Transportation determined that the voluminous application of LOOP, Inc., for a permit to construct a $983 million dollar offshore and onshore crude oil transfer facility on the Louisiana coast was essentially complete. Just 329 days later, the secretary gave his final approval of the permit application and issued a ruling to that effect, accompanied by a series of complex conditions. The federal license was accepted by LOOP in August 1977. Construction began in October 1978, and the terminal is expected to be operational by the end of 1980.

This, along with a similar project off the Texas coast called Seadock (whose original participants declined the license's conditions), was the first actual test of the Deepwater Port Act of 1974, which stands as landmark legislation in the sense that it places final responsibility in the permitting process on one man and one agency (the Secretary and the Department of Transportation) and provides for rigorous time schedules guiding involvement of all other relevant federal agencies in the application review, comment, and ruling process. It also requires that the last public hearing take place no later than 240 days from the date the licensing procedure begins and that the secretary make a determination within 90 days of the hearing.

The following discussion describes the history of the legislation and its first test under practical operating conditions. Throughout, there is a deliberate emphasis upon public participation efforts, a key factor in the process.

An issue with an impact on a large segment of the United States' population should ideally evolve in an open way. This was recognized early in the exploration of the feasibility of developing deepwater ports (DWP) off the coast of this country. The U.S. Army Corps of Engineers (COE) realized it in 1971 when it prepared its report on Gulf Coast Deepwater Port Facilities.[1] In preparing this report the COE polled over 5,500 inhabitants of the Gulf Coast region about their attitudes and opinions on the advisability and feasibility of locating a "super port" in their area. Generally, a poll such as this might show a return of around 8-10 percent. However, this particular poll had a return of 61 percent. The large number of respondents testified to the willingness of the public to voice an opinion on a rather controversial issue in the Gulf Coast region.

As interest in deepwater ports grew, so too did involvement of the public in the decision process. In June 1973, three separate studies were conducted, all of which

included public opinion. Robert R. Nathan Associates, Inc., of Washington, D.C., under contract with the COE, raised important questions of general public interest.[2] These were primarily economic, environmental, political, and social. Nathan's report recognized the varying attitudes of local communities, states, and regions toward deepwater port development. In general, there was in states in the Gulf Coast region a positive disposition towards deepwater port development. At the time of Nathan's study, the West Coast attitude had yet to be gauged.

In the second study (1973), the COE reported intense public interest in deepwater port issues.[3] At the outset of the study, public meetings were held in Portland, Maine; Boston, Massachusetts; New York City; Bridgeton, New Jersey; Philadelphia, Pennsylvania; Dover, Delaware; Baltimore, Maryland; and Norfolk, Virginia. Although there were some expressions of need and wishes, most of the speakers at those meetings were opposed to development of deep draft facilities near their own communities. Later, during this same study, additional meetings were held: two in New Jersey and one in Delaware. The attendees at these later meetings (over 1,400) were extremely vocal and uniformly negative in their reaction to the issue. By including the public in the study, the COE was able to report overwhelming public opposition to a deepwater port off the North Atlantic coast. Thus the public had spoken and had its desires honored, since to date all plans for developing a deepwater port in this area have been shelved.

The last of the COE studies (also 1973) concerned the development of deepwater port facilities on the West Coast.[4] The latter study relied heavily on public involvement as indicated in the final report. During 1973, 28 public information workshops attracted over 1,200 participants. Additionally, three public meetings were held in June 1973, which 368 people attended; 40 persons chose to speak, and 45 provided written comments. The response was so great that the COE prepared a separate appendix to its study containing the participating public's views.

The legislative history related to the development of the Deepwater Port Act of 1974 (33 USC 1501-24) reflects extraordinary efforts on the part of Congress and the administration to assure that all interested parties would be given the opportunity to contribute in formulating and developing a national deepwater port policy. Of particular note in this regard, the Department of Interior (DOI) prepared an environmental impact statement (EIS) on the administration's legislative proposals for U.S. deepwater ports in 1973. In preparing the EIS, DOI made certain that the public had a timely opportunity to comment on the environmental aspects of deepwater ports. The DOI EIS

represented one of the earliest prepared under Council on Environmental Quality (CEQ) guidelines in response to a federal legislative proposal.

The legislative branch, pursuant to Senate Resolution 45 of May 3, 1971, clearly established the early initiatives on deepwater port policy issues. This resolution called for a complete investigation of national fuels and energy policies, from which emerged a thorough and exhaustive nationwide examination of the prospective benefits and risks of deepwater port development for the United States. The COE studies formed an integral part of the examination.

On the House side, at least two deepwater port bills were introduced that drew serious attention in several subcommittees of the Committee on Public Works and the Merchant Marine and Fisheries Committee. On the Senate side, nine different bills were introduced pertaining to deepwater ports and other types of offshore development. During approximately 2 1/2 to 3 years of consideration of these Senate bills there were at least 15 days of public hearings in 1973 by various Senate committees at which thousands of pages of testimony were compiled.

A review of this testimony shows that a broad cross section of public views was represented and that the Congress went out of its way to assure that in evolving a U.S. deepwater port policy it left no stone unturned. The resulting legislation, the Deepwater Port Act of 1974, reflects the influence of the many issues and interests represented in the legislative process.

On May 7, 1975, proposed regulations for implementing the act were published by the Coast Guard in the Federal Register. This was preceded by issuance of a draft EIS (DEIS) on proposed regulations and attendant guidelines covering DWP design criteria, environmental assessment data, and operation manual requirements. Distribution of these materials was made to a Deepwater Ports Interagency Work Group organized in January 1975 (and representing over 20 agencies) to serve as the Coast Guard's point of contact with other federal departments and agencies on deepwater port matters.

Following interagency review, approximately 750 copies of the DEIS, regulations, and guidelines were distributed to persons who had made comments or had become known to the Coast Guard as having an interest in following the development of deepwater ports.

In response to the distribution and a public hearing on the proposed regulations, held in June 1975, the

Coast Guard received over 1,200 discrete comments to evaluate in preparation of the final regulations. A review of the rule-making docket shows that a wide range of views was received from a broad cross section of the public.

Evaluation of the comments, completed by the fall of 1975, led to hundreds of changes to the proposed regulations. The final regulations to control U.S. deepwater port activity became effective on November 18, 1975. They provide the general public with a substantial voice on any U.S. deepwater port proposal.

Prior to formal submission of their applications to the Coast Guard for deepwater port licenses, the two major proposers, LOOP, Inc. (Louisiana), and Seadock, Inc. (Texas), invited public participation in the development of their plans for their respective deepwater ports. This public involvement continued during the processing of the applications both within and outside the federal procedures; e.g., both applicants kept copies of all pertinent documents in a public reading facility in their offices. LOOP's application stated that the company had conducted 47 meetings with 12 federal agencies, numerous meetings with 22 state and local government agencies, and consultations with 7 public environmental groups.[5] In addition, LOOP made public information presentations to 178 audiences ranging from civic groups and professional organizations to town meetings. Seadock's application stated that specific consultations were held with 6 federal agencies, 6 state agencies, and 17 local public and private groups.[6] These were in addition to general public information projects, such as an exhibit at a local county fair that was visited by an estimated 10,000 persons. For both applicants these governmental and public consultations started in 1972, four years before submission of the applications for a federal license.

Following receipt of the applications, the Coast Guard consulted 16 different agencies and organizations about the LOOP project, and 15 agencies and organizations about Seadock, during the preparation of the draft environmental impact statements. These consultations were in addition to those conducted by the applicants. However, the major public participation in the LOOP and Seadock licensing process occurred after the DEIS's were published and made available to the public on April 16, 1976. A major method for informing the public and encouraging public participation was to make the application and environmental impact statements available at local public libraries, at both applicants' offices, and in reading rooms at Coast Guard headquarters and field offices. In addition, all requests for DEIS's were filled, with copies furnished to

over 550 addressees in 35 states, the District of Columbia, Puerto Rico, and two foreign countries.

Local public hearings were held jointly by the Department of Transportation's Office of Deepwater Ports, the Coast Guard, and the Army Corps of Engineers in New Orleans, Louisiana, for LOOP and in Clute, Texas (Freeport area), for Seadock. These hearings were a major opportunity for direct public participation in the licensing process. At the New Orleans hearing, 250 people registered, and 35 made oral presentations.[7] Those making presentations included Governor Edwards of Louisiana, the Louisiana congressional delegation (both U.S. senators and seven U.S. representatives), representatives of various federal, state, and local government agencies, local chambers of commerce, port commissions, industries, local landowners, fishermen, and environmental groups. In Clute, 257 people registered for the hearing, 43 made oral presentations, and 12 submitted written comments for the hearing record.[8] The speakers were a cross section of the community similar as at the LOOP hearing, and in addition included representatives of the maritime and longshoreman's unions.

Public participation continued after the local public hearings. Written comments were received on the LOOP DEIS from 13 federal agencies, 4 states, and 11 other organizations. The Seadock DEIS was commented on by 10 federal agencies, 4 states, and 3 other organizations. In addition, a second public hearing was held in Washington, D.C., to solicit further public comment on the LOOP and Seadock applications. Two oral presentations were made, although 64 people registered for this hearing.[9] Additional public comments were received on the draft licenses, which were made available to the public in September. Finally, the Secretary of Transportation held an on-the-record conference on November 12, 1976, to hear comments and arguments on antitrust implications of the two applications from the office of the Attorney General and the Federal Trade Commission.

The final environmental impact statements were filed with the Council on Environmental Quality on December 17, 1976. Of note here, each four-volume EIS was accompanied by an executive summary of approximately 50 pages as a fifth volume and a decision document explaining the issues considered by the secretary in reaching his decision to offer both LOOP and Seadock licenses. These two publications are important to public participation in the application process because the EIS summaries give the public a readable description of the environmental impacts of the projects, while the secretary's decision document reveals the reasoning behind his decisions. These documents were initially sent to all who commented on various aspects

of the two projects; since then, over 120 requests have been filled for one or both of the EIS's and decision documents.

Public participation in the deepwater port program has not yet been concluded. Prior to LOOP's becoming operational an operations manual will be made available for public review and comment. In addition, environmental monitoring programs will be developed, and as operating experience is gained there may be future regulatory proposals to help minimize any potential adverse impacts. As these occur, the public will be given an opportunity to participate in the decision-making process.

Financial assistance to mitigate any adverse economic, social, and environmental consequences of LOOP operations is available through the Coastal Energy Impact Program (CEIP), section 308 of the Coastal Zone Management Act (CZMA). LOOP oil transfer and storage operations qualify it as a coastal energy activity. This provides a means for the state of Louisiana to receive from the federal government money for planning grants, loans, and environmental mitigation grants to be allocated among local governmental units. The formula for allocating funds to the states is complex, but it favors states with outer continental shelf (OCS) activities, such as Louisiana. To be eligible for financial assistance of the CEIP, a state must either have an approved coastal management plan or be developing one under section 305 of the CZMA.

DESCRIPTION OF LOOP, INC.

The LOOP, Inc., plans call for construction of the LOOP deepwater port in an area situated in the Gulf of Mexico approximately 20 miles (32 km) south of Grand Isle, Louisiana. Ownership of LOOP, Inc., is divided as follows: Marathon Oil Company (32.1 percent); Texaco, Inc. (26.6 percent); Shell Oil Company (19.5 percent); Ashland Oil, Inc., (18.6 percent); and Murphy Oil Company (3.2 percent).

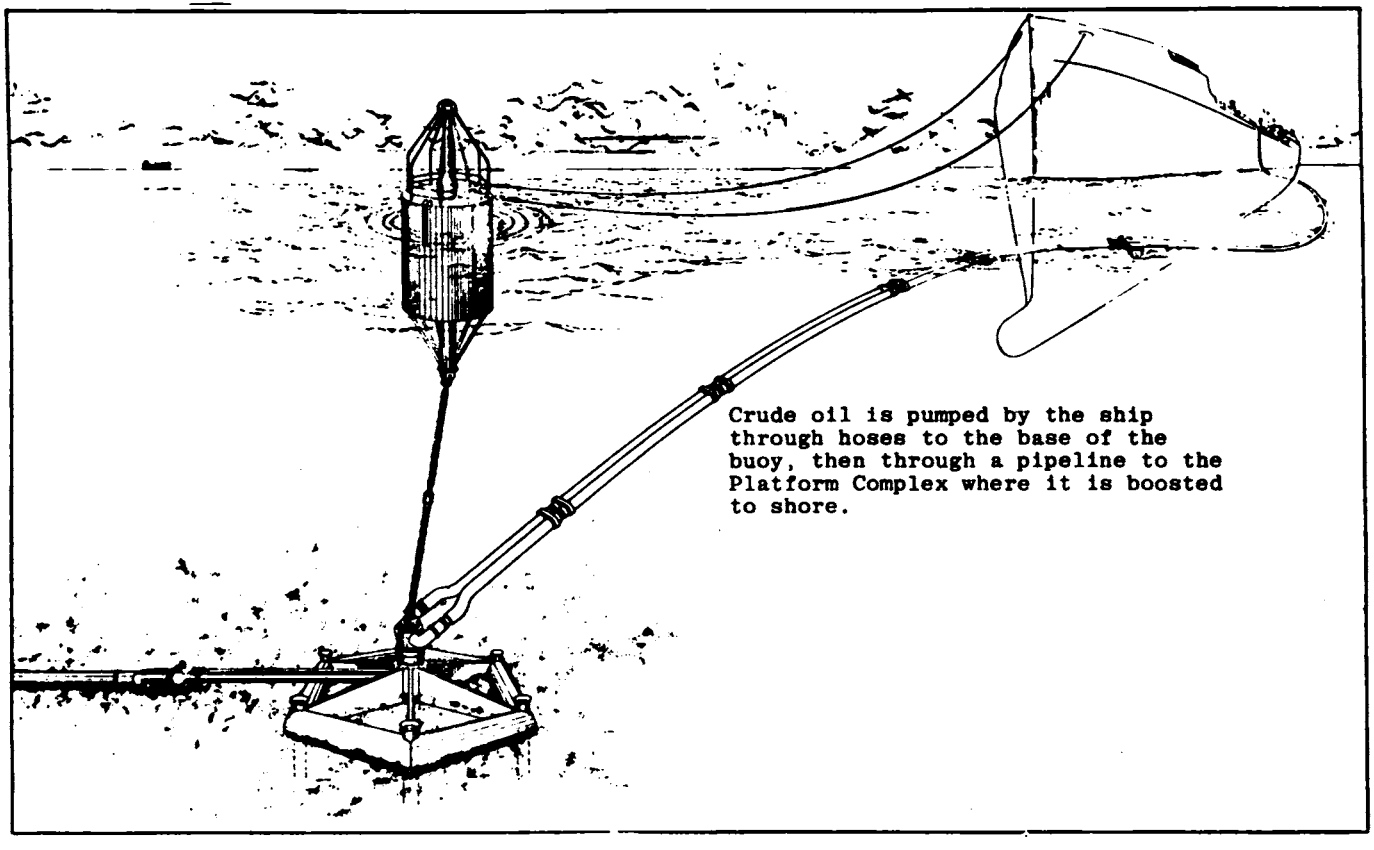
Six single-point mooring (SPM) buoys will be fanned out in a semicircle to the south of a pumping platform, at a range of approximately 8,000 ft (2,438 m). Vessels will moor by the bow at these buoys, which have floating oil transfer hoses attached so that a vessel can connect to the hoses and discharge its cargo. While moored, a vessel can weather vane 360° around the buoy to maintain a heading of least resistance to the elements while transferring oil.

From the base of each SPM buoy, buried submarine pipelines will carry oil to the pumping platform complex, where it will be moved to the Fourchon Booster Station ashore via 48-in. (120 cm) diameter buried pipelines. An onshore underground crude oil storage facility with a maximum capacity of 56,000,000 barrels is planned in Lafourche Parish near Galliano, Louisiana. Distribution of oil received at the port will be through a proposed pipeline system, designated the St. James Pipeline (to be designed by the applicant but separately owned and financed), which consists of two parallel pipelines approximately 52 miles (84 km) in length.

The deepwater port is designed to handle 3,400,000 barrels of crude oil daily.

Initially, the offshore Marine Terminal will consist of three SPM's and their submarine pipelines, a pumping platform, a control platform, and one pipeline to shore. An intermediate phase would add one SPM and its submarine pipeline and one pipeline to shore. The outside diameter of the pipelines connecting the vessel moorings to the pumping platform will be 56 in. (140 cm). The outside diameter of the pipelines from the pumping platform to the Fourchon Booster Station will be 48 in. (120 cm).

The Fourchon Booster Station will be located approximately 3 miles inland, near Louisiana Highway 1 in Lafourche Parish. It will boost the pressure to move oil through the pipelines to the Clovelly Dome Storage Terminal. A control and monitoring system will permit control locally, from the control room at the Clovelly Dome Storage Terminal, or from the control room at the Marine Terminal.



The Single Point Mooring Concept has been proven in over 100 worldwide applications since the first mooring buoy was installed in 1959. Attached to the floor of the seabed by pilings, the floating buoy can withstand extreme sea and weather conditions. Ships approach the buoy directly, and mooring is accomplished in a short time with the aid of a mooring launch. The vessel is secured to the buoy with bow lines only and is free to rotate around a 360 degree arc, like a weathervane.

The extension of the onshore pipeline from the Fourchon Booster Station to the Clovelly Dome Storage Terminal is known as the Clovelly Pipeline System. Approximately 25 miles (40 km) long, it will cross mostly marshland on the east side of Bayou Lafourche. The Brine Disposal Pipeline, a necessary element of the Clovelly Dome Storage Terminal, will be adjacent to the Clovelly Pipeline System and in the same right-of-way.

The storage facility is the brine displacement type, whereby crude oil pumped into a cavity will displace brine into a reservoir located on the surface. Oil will be removed from the cavity by allowing brine from the reservoir to flow into the bottom of the cavity and thus displace the oil to the surface. Each cavity will be served by multiple access wells.

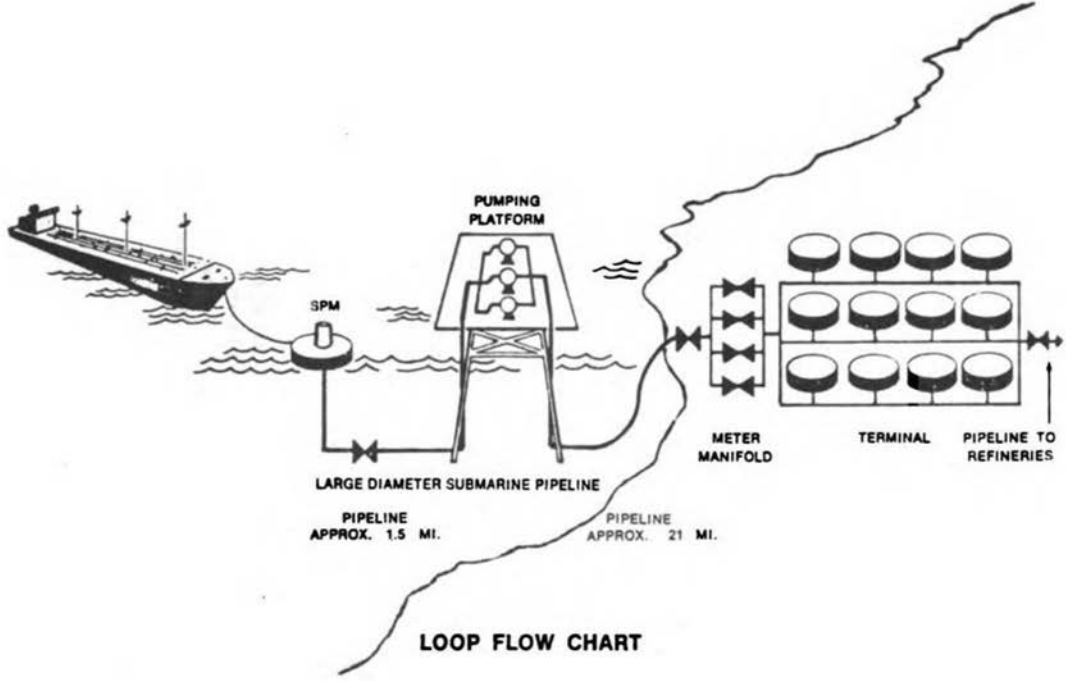
The cavities in the Clovelly Salt Dome, the top of which is approximately 1,200 ft (36.6 m) below the surface of the ground, will be leached by injecting fresh water from the surrounding marsh and canals into the salt at a controlled rate. The brine will be removed from the top of each cavity through a well and disposed of in the Gulf of Mexico through the Brine Disposal Pipeline. There will be up to 14 storage cavities, each having a capacity of approximately 4,000,000 barrels.

Unloaded crude oil will be measured by transfer meters on the Marine Terminal and also at the Clovelly Dome Storage Terminal. These meters will be continuously monitored by a computer located at the operations center adjacent to the Clovelly Dome Storage Terminal. Should onshore meters show a predetermined quantity less than that of offshore meters, the system will alarm, signalling operating personnel to identify the cause and to shut down the operation in the event of a leak.

In addition, a computerized supervisory control system will assist personnel monitoring equipment operation, process-stream flows and inventory, and the safe and efficient operation of the entire system.

The main factors considered in designing this facility for maximal operational safety and minimal environmental impact include:

- location of the facilities;
- designing safety factors in response to normal internal and external forces such as pumping pressures and weather conditions;
- protection against abnormal conditions such as hurricanes or human error;



LOOP FLOW CHART

The use of offshore terminals of this type is commonplace, particularly at crude loading ports outside the United States. They have been used for a number of years with excellent results in areas with operating conditions much like those found in the Gulf of Mexico, where wind and wave conditions would cause a fixed-platform type of facility to be out-of-service more than 50% of the time.

- containment and treatment of normal effluents such as waste water and sewage;
- design of facility monitoring systems and emergency reaction plans; and
- design of methods to prevent, isolate, and control spills.

The LOOP platform and SPM complex offshore Lafourche Parish is outside of potentially dangerous bottom mudslide areas, such as those around the mouth of the Mississippi River, and clear of existing ship traffic. The LOOP site was chosen from among six alternatives along the Louisiana coast and is the location that represents the best environmental/economic alternative.

Project Costs

LOOP intends to construct its facility in three stages.

First stage: 1,265,000 bpd (barrels per day); $348 million investment (estimated in January 1, 1976, dollars and inflated by 8 percent per year compounded through 1980); Completion in 1980.

Intermediate stage: 2,400,000 bpd; $182 million additional investment (estimated in January 1, 1980, dollars); 1981-82 (predicted).

Final stage: 3,400,000 bpd; $208 million additional investment (estimated in January 1, 1980 dollars); 1988-89 (predicted)

Total investment in the Louisiana Offshore Oil Port (with inflation) may reach $806 million. The construction of the St. James Pipeline, connecting the Louisiana Offshore Oil Port with the St. James, Louisiana, terminal of CAPLINE, will total $177 million.

NOTES

1. U.S. Army Corps of Engineers, Report on Gulf Coast Deepwater Port Facilities in Texas, Louisiana, Mississippi, Alabama, and Florida, 1971.

2. Robert R. Nathan Associates, Inc., Institutional Implication of U.S. Deepwater Port Development for Crude Oil Imports, June 1973.

3. U.S. Army Corps of Engineers, Interim Report--Atlantic Coast Deepwater Port Facilities Study, Eastport Maine to Hampton Roads, Virginia, June 1973.

4. U.S. Army Corps of Engineers, West Coast Deepwater Port Study, June 1973.

5. LOOP Environmental Assessment, Appendix B.

6. Seadock Environmental Report, Section 9.2.

7. Transcript of public hearing, May 25, 1976.

8. Transcript of public hearing, May 27, 1976.

9. Transcript of public hearing, September 21, 1976.

THE NEW ENGLAND ENERGY COMPANY OIL REFINERY (NEECO): A NEW REFINERY NEAR THE MAINE COAST

During 1972-74 the New England Energy Company (NEECO) pursued detailed predevelopment steps for an oil discharge facility in Portland, Maine, and a 250,000-bpd refinery in nearby Sanford--for what might have been the first such facility in energy-parched New England. The eventual collapse of the project was ascribable to the unforeseen financial difficulties of one of the members of the sponsoring consortium rather than to public opposition.

This illustrative case is interesting for the detailed nature of the public participation process and for the format of mitigation and compensation measures that emerged. The public participation tended to illuminate the key issues that became the subject of mitigation and compensation and to assist in the process of identifying potentially impacted individuals and groups.

While there still remains some residue of rancor and resentment from at least one citizen group, which felt that its views went largely unheard and that public processes were unjustifiably aborted, the overall atmosphere appeared to be one of an open exchange of information.

One telling point: the town of Sanford voted by nearly a 3:1 margin in favor of the refinery proposal.

THE NEW ENGLAND ENERGY COMPANY

Early in 1972, another in a long series of efforts to develop oil-refining capacity in energy-parched New England was launched by Gibbs Oil Company, the largest independent distributor in the region (gross sales at that time were $110 million annually). Nearly three years later the carefully orchestrated effort was virtually abandoned--not because of the emergence of virulent political opposition, as might be expected, but because of the unrelated financial difficulties of one of the major participants.

Gibbs organized a consortium, the New England Energy Company (NEECO), that included (a) Rucads Oil Company (headed by Lovett C. Peters, a native New Englander and former high-ranking official of Continental Oil Company and the Cabot Corporation); (b) NI Gas Supply Co. (a subsidiary of Northern Illinois Gas Company--a public utility serving about 17,500 square miles (45,500 km²)); and (c) Burmah Oil Tankers (a subsidiary of Burmah Oil Company, Ltd., which in 1973 had gross sales of $1.2 billion and was a substantial factor on the international scene).

DESCRIPTION OF THE PROJECT

The proposed project contained three basic elements:

1. Refinery in Sanford, Maine: This facility, with an estimated cost of $530 million, was designed to process 250,000 bpd of light Arabian crude oil into 143,000 bpd of gasoline, 54,000 bpd of no. 2 fuel oil for home heating, and 38,000 bpd of no. 6 low sulphur fuel oil for industrial use. The site was approximately 10 miles (16 km) inland astride the Mousan River and a like distance from the New Hampshire border. Its 1,500 acres (600 ha) were chiefly woodland.

2. Oil/general cargo terminals in Portland, Maine: The basic facilities were (a) a two-berth oil pier with 53 ft (16 m) depth alongside and a capacity to handle 130,000 DWT tankers and (b) a three-berth general cargo pier, dredged to 40 ft (12 m) alongside, with about 7 1/2 acres (3 ha) of onshore handling space. The $30 million facility would be built and owned by the Maine Port Authority (MPA); the oil pier would be leased to NEECO at a rate sufficient to amortize the total cost of both facilities. The development would wipe out the existing, fire-gutted, piers long since abandoned by the Canadian Pacific Railroad.

Dredging requirements amounted to 833,000 cubic yards (633,080 m^3) of glacial clay; 620,000 cubic yards (471,200 m^3) of sand and silt; and 315,000 cubic yards (239,400 m^3) of polluted river mud. Projected cost--about $7.5 million.

3. Pipelines: These included (a) a common carrier pipeline 48 in. (120 cm) in diameter and 36 miles (58 km) in length to carry crude oil from Portland to Sanford, passing through eight other municipalities along the route; (b) a product pipeline (200,000-bpd capacity) to serve southern New England and, possibly, Albany, New York; (c) a pipeline to carry residual fuel oil to the Central Maine Power Company generating plant in Yarmouth, Maine; and (d) a 16 in. (40 cm) pipeline, paralleling the Portland-Sanford crude line, which would carry treated waste water for discharge in Portland Harbor.

The project, according to the environmental impact assessment prepared by NEECO, would "combine the economic requirements of a free market with the environmental and social concerns of Maine and New England in a fashion that will provide a sound and profitable venture." Within this framework, the corporate partners of NEECO would be able to attain their individual objectives. Gibbs Oil would attain a stable source of supply of gasoline and heating oils. Northern Illinois Gas would gain naptha supplies for its synthetic natural gas (SNG) plants through product swapping with major U.S. refiners. Burmah Oil would increase the throughput of its transshipment terminal being built in the Bahamas and, after the pending acquisition of Signal Oil, possibly increase its share of the petroleum products market in lower New England.

In an effort to satisfy the concerns of a predominantly rural state without sacrificing the economics of the project, the sponsors proposed to:

- Develop a site plan that minimized local impacts.
- Establish an effective working relationship with the Maine Port Authority.
- Prepare an environmental case that would be acceptable to the Maine Department of Environmental Protection and a number of environmentally conscious citizen groups.
- Transport oil products to New England and New York markets by pipeline, which meant no additional coastal tanker or barge traffic.

- Prohibit downstream petrochemical development unless cleared by the community.

- Frame a workable method for the disposal of approximately 1,800,000 cubic yards (1,368,000 m^3) of dredged material from Portland Harbor in a manner that would satisfy the Maine fishing industry.

At the inception of the project in 1972, Gibbs Oil decided on an inland refinery location in southwest Maine because it would be close enough to markets but removed from the sensitive coastal zone and from the congested hinterland of Massachusetts Bay. Later, as options were taken on land in the Sanford area, a refinery of 400,000- to 500,000 bpd capacity and a Very Large Crude Carrier (VLCC) terminal, either offshore Portland or inshore on Broad Sound, were considered as alternatives. These possibilities were discarded because they were environmentally or politically unacceptable. The final design for the Portland terminal was selected after the 4 alternatives had been discussed extensively between NEECO and the MPA, Coast Guard, and Pilots Association. Similarly, 13 dredging and disposal alternatives were studied.

Acquisition of land options was not quite completed when the press took up the subject. By now, the media were well attuned to such projects, because similar ones along the New England coast had been defeated one after another. The initial reactions were measured, and appeared almost sympathetic, even before the oil embargo in October 1973. As word of the project became more widespread and local and regional opposition marshalled their forces, media activity became more intense. Local radio and television stations became involved and some newspapers and writers took partisan positions.

The project plan finally presented to the public resulted from a careful selection among alternatives and was designed to achieve the stated balance between economic and environmental imperatives. By mid-1974 it appeared that many of the critical problems had been identified and dealt with, although not all opposition had been muted. A number of organizations sought to prevent the project or delay public hearings on the application. Nonetheless, the project was well on the way to fruition when external economic factors intervened. Burmah Oil Tankers withdrew from the consortium in the wake of the tanker market slump and the overextension of its parent company's financial base.

Initiators

One of the interesting features of the NEECO project was the highly personalized involvement of the participating companies. The chief executive of each of the principal participants served together as a board of review and a committee on crude oil supply. However, the day-to-day operation was led by a management committee consisting of a vice-president from each of the partners and chaired by L. C. Peters. Each devoted substantial time to the project and identified with a particular element. In effect, each became a leader and dealt personally with consultants, relevant state and federal agencies, and the affected constituencies. At the same time, each was exposed to the overall project management. Even when Burmah Oil Tankers was replaced by another Burmah subsidiary, its representative remained as part of the management team in charge of the terminal element, thereby respecting the concept of "continuity of identification."

The local coordinator for the project was Harold Pachios, a Portland attorney. He had served as a key figure in an earlier battle against a proposed oil refinery in the Maine Clean Fuels case. In many instances he served as NEECO's spokesman. At the outset he asked for, and received, a free hand in the development of local strategies. Often, Pachios participated in decisions affecting design and configurations when major environmental factors were at stake.

The liaison to the project from the Maine Port Authority was David L. Stevens, the former head of the Maine Department of Transportation (DOT). He served both as special consultant to the DOT in its negotiations with NEECO and as overseer of both the design and the permit application for the terminal. Governor Kenneth Curtis of Maine was a determined advocate of a new dry cargo pier for Portland, but kept himself impartially disengaged from the energy proposal.

Twenty-three special consultants to NEECO were involved in various stages of the project. Issues that were considered to have disproportionate impact on local populations were handled by Maine-based firms. These issues included socioeconomic analyses; land use impact analyses; studies of aquatic and terrestrial ecology; and marine environment testing. Other New England firms were most active in land, air, and water environmental studies. Additionally, an evaluation of marine studies was performed by a task force of university professors from every New England state. The terminal design was reviewed by consulting engineers at the Maine Port Authority, who also

participated in the selection of the final design configuration.

Affected Parties

The three elements of the project affected communities in which they were located or which they would traverse. Portland, the location of the terminal, was once one of the finest and busiest ports on the East Coast but its waterfront had deteriorated. Sanford, the site of the refinery, was once a bustling shoe and textile center, but its industrial base had dwindled for the past several decades. Eight other communities were affected by the pipeline: South Portland, Westbrook, Scarborough, Gorham, Saco, Biddeford, Arundel, and Kennebunk.

The critical community impacts fell most heavily on the city of Portland (the site of the expanded terminal) and the town of Sanford (the site of the refinery).

In Portland, the burned-out piers had been an ever-present visible reminder of the decline of the port during the past two decades. The NEECO proposal would not only provide major new economic stimulus to the port (a new general cargo terminal whose capital costs would be defrayed by the oil consortium) but also eradicate a long-dormant eyesore in the process. To be sure, the city was being asked to accept additional environmental risk, but Portland has a long history as an oil port, and the NEECO proposal would only add some 20-25 percent to the annual throughput of oil.

The fact that the expanded MPA facility would be exempt from real estate taxes, however, deprived Portland of the promising tax windfall that would be associated with the refinery. This imbalance was in part redressed through the application of a recent state law that provided "for an incentive for coordinating multi-community economic development by permitting two or more communities to share their tax base." An eventual agreement between Portland and Sanford provided for a proportional sharing of the tax valuation ascribable to the completed refinery.

Sanford, a town of 10,000 with a chronic unemployment problem, faced a different set of imperatives. Despite the enormous tax consequences involved--a potential increase of the tax valuation of the town from $110 million to over $400 million--it was apparent that the refinery would bring with it very substantial socioeconomic and environmental impacts. The seeds were clearly there for sharp community division.

Eight other communities located on the Portland-Sanford pipeline route were clearly parties at interest. The key problem was not the pipeline itself, which would be an inconvenience during construction, a very minimal hazard to the environment, and a modest generator of additional tax revenue. The key fear revolved around the possibility that the refinery would represent the first step in the development of heavy industry and dense commercial uses in York County--with all the attendant secondary socioeconomic impacts that would be associated with it.

Dredging Question

Another controversial issue associated with the project was the plan for dredging and disposing of 1,800,000 cubic yards (1,368,000 m^3) of bottom material, including about 300,000 cubic yards (228,000 m^3) of polluted river mud. The Corps of Engineers (COE) was interested in NEECO studies because it was looking for a disposal site for dredged materials as a result of the closure of Ram Island by the Environmental Protection Agency (EPA). The EPA showed its concern by disputing the Corps' traditional role of lead agency in matters relating to dredging and disposal. The dispute, which continued for several months, was eventually resolved at headquarters level in favor of the COE, but EPA representatives kept a close watch on the proceedings along with the Fish and Wildlife Service of the Department of the Interior.

The Maine Department of Marine Resources (DMR) was strongly opposed to any disposal in state waters or within 20 miles (32 km) of the shore. The DMR was concerned with the local fishing industry. In addition, environmental groups were suggesting upland disposal or marsh building in local coves as alternatives.

To resolve the dispute, NEECO prepared 13 alternatives. These were presented on May 15, 1974, at a meeting of all concerned organizations, gathered by Morgan Reese of the COE. Tentative conclusions were reached in favor of burial dumping (clean material over polluted spoils) if a site could be found. NEECO extended its survey over a 15-mile (24 km) long area beyond the Cape Small-Cape Elizabeth line, even though a trench near the Portland Lightship seemed the obvious site. The EPA and DMR, however, maintained their opposition to any site within 20 miles (32 km) of the coast.

In an effort to break the deadlock, NEECO sought a direct contact with the fishermen through the Maine University researcher who had implemented many of the field studies. Two informal meetings were held at the Southern Maine Vocational Technical Institute, under the sponsorship

of the COE, and with the EPA, DMR, U.S. Coast Guard, State Department of Environmental Protection (DEP), and Portland Pilots Association (PPA) in attendance. After an alternative, inshore, site proposed by the fishermen, and studied by NEECO between the two meetings, was jointly ruled out, a disposal site was finally selected near the Portland Lightship, NEECO's initial choice if Ram Island could not be reopened. That no fishing or breeding grounds existed at the site was confirmed by eight lobstermen and fishing industry representatives. NEECO agreed to avoid dredging between July 1 and October 1, in order not to disturb lucrative lobstering in the area to be dredged. The PPA expected that anchor holding at the Portland Lightship anchorage would be improved and the Coast Guard, although concerned that the site was within a 5-mile (8 km) precautionary radius around the lightship, accepted the site because local interests and natural conditions favored its selection.

PUBLIC PARTICIPATION

It seems clear that NEECO felt its best chances to come to a positive conclusion in its efforts to build a refinery and terminal, with the necessary delivery pipelines, lay in developing a sense of cooperation through open communications with the communities that might be impacted by the project.

Three citizen groups, which developed entirely as a result of the proposed project, can be identified: WAIT, FOIL (Friends of Intelligent Land Use), and SUPPORT. The opposition, represented by FOIL and WAIT, was initiated by concerns of what the project would do to the living conditions and the environment of Sanford and the surrounding region. SUPPORT came about primarily as a defensive measure in support of the actions of the Sanford Planning Board. There were charges, made by the members of FOIL, that they did not have adequate time or resources to prepare their case. There were, in contrast, high compliments by others for NEECO and its representatives (particularly the local coordinator, Harold Pachios) for the way the company conducted itself.

The initial action on the part of the citizens of Sanford took place on April 16, 1974, the day after the Sanford Planning Board voted 6 to 1 in favor of a zoning change that would allow oil refining activities in an area formerly zoned for industry with "limited processing and oil storage." (The chronology highlights the events occurring during the rezoning fight.) WAIT urged the board to withhold its approval until the DEP reviewed NEECO's application and accepted the environmental impact statement. Because of

CHRONOLOGY OF DEBATE SURROUNDING REZONING

A zonging change was requested by NEECO when it realized the zoning for the refinery site in Sanford allowed only limited processing and oil storage. The following is a chronology of the attempts both to overturn and to retain the change approved by the Sanford Planning Board.

April 15, 1974	Sanford Planning Board votes 6 to 1 in favor of voting change.
April 16, 1974	WAIT citizens group is formed.
April 23-25, 1974	Twenty residents of Sanford visit the ARCO refinery in Ferndale (Cherry Point), Washington.
May 6, 1974	Special town meeting of delegates affirms decision of Planning Board.
May 7, 1974	WAIT launches a petition for a referendum challenging the rezoning.
May 18, 1974	Citizen group called SUPPORT is formed to campaign for confirmation of delegate vote on May 6.
May 25, 1974	Public debates between NEECO and both WAIT and FOIL.
June 9, 1974	An open letter to the citizens of Sanford is signed by the chief executives of the four participants.
June 11, 1974	Referendum confirms zoning change, by 3,442 to 1,256, during a record vote, with a strong majority in all seven voting districts.
July 10, 1974	Complaints filed by FOIL and two sanford families against three selectmen and the inhabitants of Sanford. Suit brought on August 15, 1974.
September 20, 1974	Class action suit against three selectmen dismissed in Portland Superior Court, leaving intact the suit against Sanford inhabitants.
September 21, 1974	DEP receives NEECO's application with EIA and begins review process.
October 1974	DEP hearings begin.
December 31, 1974	NEECO asks that the permit hearing process be held in abeyance.

Maine law the DEP could not legally consider an application until the proposed site was acquired or placed under option and adequately zoned. If the planning board had honored the request of WAIT, it would have been tantamount to a rejection of the project. Until WAIT was formed, FOIL was the only ad hoc citizen group. It was regional in membership and was opposed to NEECO because the company's project was seen as the opening wedge for heavy industry in the York County region. FOIL lent its support to WAIT in the latter's efforts to delay the decision of the planning board.

Because the rezoning issue was vital to NEECO and a prerequisite to the application to the DEP and because the controversy was mounting, NEECO offered to finance a visit by 20 Sanford residents to the ARCO refinery in Ferndale, Washington. This was considered to be a reasonable counterpart of the proposed Sanford facility. Company officials reasoned that few local residents had any knowledge of modern refineries and that concerns over undesired impacts could be met by a tour of a refinery town in a rural environment. Sanford officials and opposition leaders appointed the group, which included selectmen, a planning board representative, local industry people, and others from the town meeting. Among this group were two members of WAIT. Two reporters paid their own way, but one local newspaper, strongly opposed to the refinery, declined the invitation. The group toured the refinery, which has a capacity of 100,000 bpd and sits on 450 acres (180 ha) of a 1,200-acre (480 ha) rural site, on April 23-25, 1974. The group contacted an estimated 200 people, such as town and county officials, police, and interested citizens. On its return the group reported on its experience at the special town meeting. The consensus was supportive of the refinery.

The Sanford town meeting of May 6, comprising one delegate for each 30 residents, approved the zoning change. In response to this vote, WAIT launched a petition for referendum with the hope of delaying or reversing this decision.

On June 11 the referendum vote affirmed approval of the zoning change by a margin of 3-1.

Following the referendum, FOIL filed a complaint against the selectmen and the citizens of Sanford as well as several residents of York County. This action was filed on July 10, 1974. The complaint was rejected and on August 15 FOIL, along with four citizens of Sanford, brought suit in superior court. The complainants asked the court "to prevent the disruption of their private lives, the devaluation of their properties which are adjacent to refinery and storage tank sites, the disturbance of the

ecological, social, and economic environments, and the denial of their rights to governmental fair play and due process." An additional argument was "that the rezoning or spot zoning for a refinery was illegal because it did not adhere to state law requiring that such measures comply with the Town's Comprehensive Plan, adopted in 1959 with no accommodation for heavy industry." In mid-September the court denied the class action character of the suit and dismissed the action against the individuals. The suit remains extant, although inactive, against the citizens of the town of Sanford.

The third citizen group, SUPPORT, was started on May 18 as an effort "to protect Sanford's representative form of government by ensuring that the issue which was approved in a town meeting was further supported by the community in referendum." This was a reaction to the delaying tactics of WAIT and FOIL. This group, between May 18 and June 11, was an exceedingly important force in its door-to-door campaigning on behalf of a "yes" vote on the referendum. Contributions offered by NEECO for the campaign were refused. Interestingly, all but one of the people who later formed the executive committee of SUPPORT were part of the fact-finding mission to Ferndale.

On September 20, 1974, the day FOIL's suit against the three Sanford selectmen was dismissed, the project description and Environmental Impact Assessment (EIA) were submitted to the Department of Environmental Protection. The EIA was designed to serve as the basis for the EPA, Corps of Engineers, and DEP environmental impact statements supporting the corresponding permits. In October 1974 the DEP, lead agency for the refinery proposal, began conducting hearings in Sanford. NEECO hoped that the DEP hearings would be sufficiently complete that further EPA and Corps of Engineers hearings would not be needed. The COE had reserved its position, noting that additional hearings in Portland would be necessary.

The Southern Maine Regional Planning Commission (SMRPC), newly created under recent legislation, was entitled to conduct its own separate hearings on the proposal. It chose instead to intervene in the DEP hearings while foregoing its own separate hearing process. SMRPC chose to address itself specifically to the socioeconomic, secondary impacts of the proposed development and appropriated $18,000 to hire consultants to evaluate the consultant data already available within the framework of the EIA.

At an earlier point, FOIL had raised questions about SMRPC's discharge of its own legal obligations. FOIL pointed out that the regional agency had received

insufficient notice of the Sanford referendum action and that it had not properly discharged its responsibilities before the Sanford referendum vote to hold public hearings and to receive testimony on how the project might "affect the environment or pose a threat to the public health, safety, or general welfare." FOIL brought pressure on the SMRPC to bring suit against Sanford. It urged that the agency "assert its regional review rights" and later charged SMRPC "with virtual dereliction of duty" in a July 1974 press conference.

In order to gain approval from the local inhabitants, an atmosphere of open dialogue and disclosure was maintained between NEECO and a variety of groups. The issues that concerned nearby towns were the secondary socioeconomic and environmental impacts of the development. For example, the towns of Kennebunkport and Wells became intervenors in the DEP hearings. The Kennebunkport Conservation Commission created an advisory group of three engineers to review such matters as refinery emissions, water requirements and use, liquid wastes and possible oil pipeline leakage or refinery seepage into rivers. In Kittery, the planning board, at a public meeting, approved the recommendations section of a white paper, prepared by one of its board members for forwarding to the SMRPC.

MITIGATION AND COMPENSATION

The participation process enabled the company to identify most of the issues before they became matters for confrontation. Several examples follow.

Portland Terminal

The lease payment for the oil pier was sufficient to amortize the entire costs of both the pier and the dry cargo wharf. The MPA thus obtained a much-needed facility at no cost while NEECO gained access to low-cost, tax-free revenue bond financing. Even if the Portland pipeline (carrying oil to Montreal, Canada) were eventually to have idle capacity, making a new oil pier unnecessary, the dry cargo pier would still be built.

Shuttle Tankers or Very Large Crude Carriers

The use of VLCC's was abandoned as an alternative for carrying oil to the coast. It was decided to use medium-size tankers to haul oil from Burmah's transshipment terminal in the Bahamas to Portland Harbor, a historically active oil transfer port. The increase in shipping costs brought about by using smaller tankers was offset somewhat

because the oil shuttle service from the Caribbean obviated exclusive use of small tankers for an entire carriage.

Downstream Industrialization

Sanford benefitted from NEECO's agreement, under pressure, not to make any of its land available for petrochemical or any other heavy industry use without prior approval of the town of Sanford.

Pipeline Size

The towns along the Portland-Sanford pipeline corridor expressed concern when they learned the 48-in. (120 cm) pipeline had a capacity 10 times that of the refinery. NEECO explained that the capacity was necessary if a 12-hour tanker unloading schedule was to be maintained, and offered to reduce the size of the line if allowed to build storage tanks near Portland, closer to the oil pier. This would reduce NEECO's cost and allay the fears of the towns along the pipeline route that further development of oil-related industry would occur. A suitable site became, as a result, much easier to find.

Terminal Configuration

The NEECO terminal in Portland was originally conceived as a multipurpose facility, with the same berths used for tankers and general cargo ships. At the request of the Coast Guard and the Maine Port Authority, the terminal was split into two separate facilities, at almost double the cost. In addition to the separate terminals, the Port of Portland also received a roll-on/roll-off platform and a mobile crane costing about $1 million, in the last stages of negotiation.

Dredging

NEECO agreed to incur additional expenses of $1.3 million for disposal outside the 3-mile limit, $400,000 for selective dredging and burial of polluted river mud (final cost of $7.5 million), and $300,000 for environmental monitoring. In addition, the company foreclosed on any plans to design the oil pier to handle exports of products.

Miscellaneous

Individual situations, particularly concerning lighting, were negotiated with homeowners whose houses were adjacent to NEECO's property line. The company also intended to spend much money (about 20 percent of the cost) on environmental protection devices in its several facilities. However, NEECO was most sparse in dispensing

"favors." The only gesture to providing perquisites was the construction of two tennis courts and a baseball field on the outskirts of the refinery site. Table 2 contains an analysis of the benefits and costs by type of accommodation. Attachment II is a partial listing of the required permits and licenses.

SUMMARY AND CONCLUSION

NEECO appears to have made a serious attempt to accommodate a refinery to local and regional environmental concerns. If Burmah Oil had not experienced financial difficulties, the necessary permits would probably have been granted and the refinery would be under construction. The NEECO partners tried to maintain credibility and to show sensitivity to individual situations. There was much personal involvement by high level representatives from all companies joined in the project, who worked closely together and gave full backing to the local sponsor, Harold Pachios, who had established his credentials as being one unwilling to compromise on important environmental matters.

Early open disclosure and dialogue was a NEECO policy. With most of their site options in hand, the company opted for visibility, informal discussions, and constructive debate rather than one-way public relations campaigns. Many opponents of the project, although not all, expressed satisfaction with NEECO's procedures. The process of openness was enhanced by trade-offs as design and baseline studies proceeded. The trade-offs proved to be mutually beneficial; the company received tangible economic benefits, while environmental, social, and economic concerns were assuaged.

Briefings to all sorts of constituencies were made to provide information to and solicit inputs from local, regional, state, and federal agencies when available. Information was designed to be responsive to actual needs. The visit to the Ferndale refinery, for example, provided an opportunity for Sanford residents to examine a working refinery within an established community. Another example of a success was the selection of a dredged material disposal site, long sought by the Corps of Engineers for its own needs, after two meetings with fishermen.

Public debate was neither shunned nor discouraged, but NEECO favored DEP hearings as the mechanism for the adversary process. To this end, NEECO suggested that the EPA and the Corps of Engineers combine their hearings with those of the DEP. Although the effort did not succeed, the SMRPC agreed to intervene in DEP hearings rather than conduct its own hearings. Although NEECO preferred informal

Nature of Decision or Agreement
. Ban on downstream petrochemical development except with the specific approval of the Town of Sanford.
. Development of a large (48") crude carrying pipeline between Portland and Sanford -- actually ten times the size required for 250,000 bpd refinery capacity.
. Terminal configuration -- i.e., a shift from a single multi-purpose facility to two separate facilities -- an oil discharge pier and a general cargo pier.
. Disposal of dredged materials beyond the three-mile limit and selective dredging and burial of polluted river mud.

Benefits	Costs
. Sanford thus retains clear veto on any threatening industrial use.	. Sanford, in the face of a specific proposal, might have to forego additional tax revenue. . NEECO may lose potential return from resale of portions of its 1,500-acre refinery site.
. Portland avoids the additional hazards of shore-side oil storage. . While the large pipeline stirs fears of a later expansion of activities in the eyes of the pipeline communities, it did provide an excuse for NEECO to explain its position.	. NEECO has to pay an additional increment for the larger pipeline in order to assure the availability of 12-hour tanker unloading.
. M.P.A. has the advantage of an operation totally separate from the sometimes incompatible oil unloading operations as well as space for a roll on/roll off platform and a mobile container crane.	. This increased the cost of the total facility by nearly 100% -- a price to be amortized by NEECO lease payments. . Also involves increased dredging costs for NEECO and the U.S. Corps of Engineers.
. The total environment of the Port and Harbor thus is adequately protected. . Fishing industry interests are given special consideration and input in the final decision.	. Additional expenses include disposal outside the three-mile limit ($1,300,000); selective dredging and burial of polluted river mud ($400,000); and special environmental monitoring ($300,000). Thus a total cost of $7,500,000. . NEECO had to foreclose any possibility of designing the oil pier to handle exports of products.

Nature of Decision or Agreement
Early Project Options
. Utilization of an established oil discharge port (Portland) and development of a new dry cargo pier in association with new oil discharge facility.
. Use of shuttle carriers and transshipment from the Caribbean Sea rather than direct service by Very Large Crude Carriers (VLCC's)
. Location of a "clean" refinery on an inland site and reliance on in-shore pipeline delivery system rather than substantial tank farm storage in Portland.
Project Development
. Tax-sharing agreement between Portland and Sanford.

TABLE 2

ANALYSIS OF MITIGATION/COMPENSATION

Benefits	Costs
. M.P.A. obtains a new dry cargo facility with very limited financial risk. . Portland has the potential economic development spin-offs from expanded maritime operations and the elimination of unsightly piers. . NEECO has the benefit of tax-exempt, revenue-bond financing.	. NEECO must agree to a rental rate sufficient to amortize both facilities. . Modest additional environmental risks for Portland.
. Portland has a modest add-on to a known risk (i.e., 25% increase in volume of oil handled) rather than a new and unknown risk (VLCC's). . One of NEECO partners (Burmah) generates added through-put for its under-utilized Freeport facility. . Avoidance of increased hazards to the coastal zone posed by VLCC's.	. Trans-shipment on shuttle tankers increases overall transportation costs.
. Minimal encumbrance of the coastal zone. . Portland's environmental risks are measurably lessened. . Communities along the pipeline realize modest added real estate tax revenue.	. The use of all available modern technology to reduce emissions obviously implies added costs; NEECO has estimated $100,000,000.
. Portland receives financial recognition for increased environmental risks and possibly increased public service requirements. Increased annual revenue -- about $500,000 - $1,000,000. (About 12% of total valuation of the refinery.)	. Sanford must forego a portion of the real estate tax windfall ascribable to the refinery. Total projected annual revenue -- about $2,900,000. Remainder goes into a state Special Education Fund.

meetings, it did engage in debate when the referendum petition challenging the rezoning was initiated by WAIT. The results of an active bargaining and participation process during the project planning stage were two-fold: impacted parties received mitigation and compensation and the applicant (NEECO) obtained substantial economic trade-offs. Another effect of the participation process for NEECO was fewer lawsuits.

Despite this policy of cooperation there were still citizens who continued to feel frustrated in their efforts to defend themselves against a project that they considered threatening. The mitigation results of the NEECO policy did not reach them and the rising emotionalism attached to their cause seems to have intensified their intention to fight for their position.

The success in creating a climate of cooperation between the potentially affected citizens and the proponents of a project relies directly upon the efforts that are made to include those citizens in both the planning stages and the regulatory aspects of the given project. One can ask in the Portland-Sanford example, "Why, when such skill was demonstrated in turning the efforts of many members of WAIT into an asset and in bringing the local fishermen into the discussions of where to locate a dumping site for dredged materials acceptably, were the members of FOIL left with such a sense of rancor? That these citizens did indeed fear a loss of value to their properties and a loss in the quality of their lives was an impact not sufficiently understood or addressed.

The withdrawal of the application halfway through the review process prevented a full test of the company's strategy and proclaimed intentions relating to mitigation and accommodation. Whether environmental considerations would have been balanced with economic requirements, particularly in view of the fluctuating realities of the U.S. energy picture, remains an unanswered question. But even without the acid test of implementation, the NEECO approach yields interesting insights on methods for communicating with affected parties, for fostering public participation, and for alleviating and mitigating any adverse effects of change.

Attachment II

PERMITS REQUIRED

The following is a partial list of licenses and permits required of the NEECO project:

A. Federal Licenses and Permits

1. Dredging Permit - Corps of Engineers
2. Ocean Dumping Permit - Corps of Engineers
   State Department of Environmental Protection (DEP) (Certification)
3. Authorization to Construct Pier Facility in Navigable Waters - Corps of Engineers, DEP (Certification)
4. Authorization to Construct Pipelines Under Navigable Water at Fore River, Saco River, Casco Bay at Cousins Island - Corps of Engineers
5. Water Pollutant Discharge Permit - EPA

B. State Licenses and Permits

1. Site Location License - DEP
2. Several Wetlands Permits for Construction of Pier and Pipeline at Wetlands Areas - DEP Municipality (Certification)
3. Water Quality Certification and Waste Water Discharge Permit - DEP
4. Air Emission License - DEP
5. Permits for Alteration of Rivers - Commissioner of Inland Fisheries and Game
6. Annual Oil Terminal Facility License
7. Road Opening Permits at Points Where Pipeline Crosses State Roads - Department of Transportation

C. Municipal Licenses and Permits

1. Building Permits for Refinery (Sanford) Pumping Station (Portland) and Pier Facility (Portland)
2. Permit for Oil Pipeline (Portland)
3. Road Opening Permits at Points Where Pipeline(s) Cross Roads and Ways
4. Wharf Permit (Portland)

D. Other Licenses and Permits

1. Permit to Construct and Operate Pipeline Across Saco River - Saco River Corridor Commission
2. Road Opening Permits at Points Where Pipeline Crosses Maine Turnpike - Maine Turnpike Authority

SOHIO ALASKAN OIL: A TRANSCONTINENTAL PIPELINE FOR ALASKAN NORTH SLOPE OIL

The Standard Oil Company of Ohio (SOHIO), along with British Petroleum (BP), owns 50 percent of the anticipated output of the Alaskan North Slope petroleum development. SOHIO has proposed a 750,000-bpd oil discharge facility at Long Beach, California, tied to a 1,000-mile (1,600 km) transmission line from there to Midland, Texas. Much of this daily throughput is surplus to the foreseeable energy needs of the West Coast.

The California Air Resources Board has taken a firm stand on excess hydrocarbon emissions in the Los Angeles basin and the necessary trade-offs that must be a precondition to state approval. The question of regional versus national interests becomes sharply drawn.

The chief alternative? More expensive transshipment through the Panama Canal, a pipeline across Central America through Guatemala, or even the shipment of Alaskan oil to Japan in return for a like allotment of Persian Gulf oil for the United States. The issue has commanded wide national attention and particular concern from the Department of Energy.

The stakes--in terms of previous energy resources and financial expenditures--are high. Natural gas allocations for the state of California have become part of the intricate negotiations. A final resolution appears to be in the offing.

SOHIO WEST COAST TO MIDCONTINENT OIL PIPELINE

The Standard Oil Company of Ohio (SOHIO) controls 50 percent of the proven reserves of Prudhoe Bay, Alaska, crude oil. Exxon Corporation and Atlantic Richfield own 20 percent each, and the rest is divided among six other companies. To bring the crude oil from Alaska to the "lower 48," a consortium of eight oil companies formed the Alyeska Pipeline Service Corporation in 1969. Because disputes over the environmental effects of the pipeline led to major design changes, work on the pipeline did not begin until after the Congress passed the Trans-Alaskan Oil Pipeline Act on November 16, 1973.

This illustrative case addresses only one aspect of this enormously complicated enterprise--the problem of finding a means for onshore unloading of crude oil and for moving it to refineries and ultimately to the energy-hungry markets of the Midwest. Unlike much of the other case material that has been selected, this story is not finished.

Its lessons are therefore not sharply drawn. It does bring into focus the enormous complexities and secondary impacts of a project of this size. For example, one identifiable local impact was that which affected Cherry Manor--a modest, 45-year-old residential community that had been in sometimes uncomfortable juxtaposition to an ARCO tank farm for more than three decades.

On a larger scale, a result of the project could be a whole new level of hydrocarbon emission problems in the already pollution-plagued Los Angeles basin. In fact, its ramifications go further than that--to national policies for the allocation of natural gas supplies, to the nation's stance in the face of critical energy problems, and to international economics and politics of the oil industry.

The Pipeline Act had opened the way for Alyeska to build an 800-mile (1,280 km) pipeline from the North Slope oil fields at Prudhoe Bay to Valdez, Alaska. From Valdez the oil was to be shipped to West Coast refineries for local consumption. However, early in 1974 it became publicly known that these refineries could not absorb the entire 1,200,000 bpd that would eventually flow through the pipeline. Plans were then made to design alternative transportation schemes to move the oil to other markets. SOHIO is proposing a distribution system that includes an oil terminal at the Port of Long Beach, California, the conversion of an existing natural gas pipeline, and the construction of approximately 120 miles (192 km) of new pipeline, to deliver approximately 500,000 bpd of the surplus Alaskan crude from Long Beach to Midland, Texas, a distance of about 1,000 miles (1,600 km).

The proposal has engendered great controversy in the state of California because of its potential effects on air quality in the Los Angeles basin, brought about directly by pollutant emissions from storage tanks and tanker-unloading operations. Another concern is the indirect effect of possible curtailment of natural gas supplies because of the pipeline conversion. To be converted is a 789-mile (1,262 km) pipeline operated by El Paso Natural Gas, carrying gas from Midland, Texas, to California, and a 120-mile (192 km) line operated by Southern California Gas Company. New construction will connect the latter with the Long Beach terminal and the El Paso line. These lines are important elements in California's energy strategy. The state of California has helped to subsidize exploration for Mexican natural gas and expected to use the El Paso pipeline to carry any new supplies into the state.

Currently, the West Coast is enjoying a surplus supply of oil, if one assumes some 750,000 bpd from the North Slope. By 1982, when the North Slope production is at capacity, the oversupply is projected to be about 800,000 bpd. Compounding the problems of the surfeit of oil is the Naval Petroleum Reserves Production Act of 1976, requiring the Navy to open up the Elk Hills Naval Petroleum Reserve for nonmilitary production of 350,000 bpd by 1979. Several alternatives have been proposed for moving surplus oil from the West Coast to other markets, such as:

1. Swapping Alaskan crude to Japan in return for Middle East oil that would go to the East Coast of the United States rather than to Japan.

2. Use of small tankers to carry oil directly from Valdez through the Panama Canal to Gulf Coast refinery centers.

3. Use of very large crude carriers to carry oil to a point offshore of the Panama Canal for transshipment to smaller vessels and for transit through the canal or through a transisthmus pipeline in Guatemala to Gulf Coast ports.

4. Building a pipeline from the Puget Sound area to carry Alaskan oil to the Northern Tier refineries in the Midwest.

(The latter option has generated special difficulties of its own. The legal issues, whether the state of Washington has the right to restrict petroleum port development in the Puget Sound area, are now being drawn. The U.S. Supreme Court has already ruled that the state cannot restrict tankers in the sound according to their size.)

The SOHIO/state of California developments illustrate the classic conflict between local perceptions and the national interests. As seen by Congress and stated in the Pipeline Act, "the crude oil on the North Slope of Alaska is an important part of the Nation's oil resources, and the benefits of such crude oil should be equitably shared, directly or indirectly, by all regions of the country." Further, it is stated in the act, "The President shall use any authority he may have to ensure an equitable allocation of available North Slope and other crude oil resources and petroleum products among all regions and of the several states."

The decision by SOHIO to build a terminal and distribution system for North Slope oil was based on events following the oil embargo in late 1973. Prior to the embargo, consumption growth rates for the West Coast were forecast between 4 and 5 percent a year. It was believed, then, that completion of the Alaska pipeline would coincide with increased West Coast demand to the point where the entire North Slope production would be used on the West Coast. However, petroleum growth rates, particularly in the transportation sector, dropped as a result of controlled and voluntary conservation measures and higher prices. In the case of California, the largest consumer of oil in PADD V, 1974 demand dropped below 1973 levels. (The United States is divided into regions called Petroleum Administration for Defense Districts (PADD). The three western coastal states, and Arizona, Nevada, Alaska, and Hawaii are in PADD V.) Indications are that 1975 was a no-growth year, according to the Environmental Impact Report (EIR) prepared by the Port of Long Beach and the California Public Utilities Commission for the project. From a consumption rate of approximately 2,200,000 bpd in 1974, the forecast for PADD V in 1978 is 2,800,000 bpd.

RATIONALE FOR THE PROJECT

How did SOHIO arrive at this decision? Robert Schaadt, SOHIO West Coast Manager, explains:

> The result (of the forecasts) is a projected crude oil surplus on the West Coast with the commencement of North Slope crude production. Sohio projects a 300,000 to 600,000 barrel per day surplus in 1978, increasing to 750,000 to 900,000 by 1982. In the development of these figures Sohio worked with the Pace Company to analyze and project West Coast demand trends. Relative to supply, Sohio worked with the DeGolyer and MacNaughton

Company to project West Coast crude production. Subsequently, several independent projections have been published which support these judgments. These independent sources include studies done by the Federal Energy Administration, the Department of Interior, the National Petroleum Council, and individual projections by major oil companies.

Immediately after Sohio's forecasts indicated this supply/demand picture, a study was initiated (early in 1974) to determine the best means of providing a transportation system to bring this surplus West Coast crude oil to market. Since studies clearly show that areas east of the Rockies will be increasingly dependent upon large volumes of foreign imports, efforts were focused upon transporting this domestic West Coast crude surplus into the Mid-Continent area.

Numerous alternatives were examined starting in early 1974, namely: several continental U.S. routes [Figure 11], reversal of the Trans-Mountain Pipeline System (partially in Canada), a pipeline route across the Central American Isthmus, and even shipment around the tip of South America.

As a result of these studies, it was determined in mid-1974 that a U.S. pipeline route offered two advantages. First, it provided the most secure transportation system in the event of future disruptions of foreign crude supplies. Second, it provided the lowest cost transportation into the Midwest. For example, shipment through the Panama Canal is three to four times more expensive than shipment through a U.S. pipeline system. Consequently, Sohio's efforts over the last year and a half have been focused upon analyzing the West Coast to Mid-Continent Pipeline alternative.

It is believed that this proposed project offers substantial and compelling

advantages over alternative means of providing this necessary transportation system. Several of these advantages are associated with utilizing the existing but idle natural gas pipelines. The fact that 75 to 80 percent of the pipeline required to provide this transportation system is already in place not only substantially reduces the capital and material required, but also allows the system to be installed with a minimum impact upon the environment. By utilizing existing facilities, the prospects for having the system operational in 1978, when it will be needed from a national standpoint, also are greatly enhanced. The consequence is that the proposed project represents the lowest cost transportation of all the alternatives.

Two additional factors point out the advantages of the chosen route. By selecting a route across the Southwest, tanker berthing facilities can be provided within San Pedro Bay which houses the Port of Long Beach (PLB). The PLB offers the deepest water on the West Coast (except the Puget Sound area) and already has a long and successful history of handling petroleum tankers. By making the necessary modifications within this excellent existing port, the required facilities can be provided with minimal environmental impact.

Finally, the eastern terminus of the pipeline near Midland, Texas, will allow maximum use of the already existing crude oil transportation network that can move the Alaskan resource to refineries that are capable of using that type of crude oil.

(These remarks were extracted from the August 1976 issue of ECOLOG, published by the Port of Long Beach.)

OIL PIPELINE ROUTING PROPOSALS

FIGURE 11

ELEMENTS OF THE PROJECT

The proposed distribution system consists of four elements: (a) tanker carriage to Long Beach, (b) tanker berths and storage tanks at the Port of Long Beach; (c) storage tanks at Hynes, about 10 miles (16 km) from the port, and (d) a pipeline to carry the oil from Long Beach to Midland, Texas.

Crude Oil Tankers

Oil will be delivered to the Long Beach terminal by 11 tankers controlled by SOHIO, in the following size ranges, by carrying capacity: four at 165,000 DWT, three at 120,000 DWT, and four at 80,000 DWT. They are expected to make about 75 round trip voyages a year, combined. Since the tankers are engaged in domestic shipping, they are all U.S.-built and registered under the U.S. flag, as required by the Merchant Marine Act of 1920 (Jones Act). Crude oil will be loaded into these tankers at Valdez, Alaska, after traveling 790 miles (1,264 km) through the Alyeska pipeline. The ships will pass west of Puget Sound by about 315-325 miles (500 km) and west of San Francisco by about 50-60 miles (80-96 km) on their way to Long Beach for offloading. Figure 12 shows the tanker route.

The SOHIO vessels will have special features. All have segregated ballast tank arrangements so that no ballast water will be drawn into cargo tanks. Each tanker will have separate tanks for 0.5 percent sulphur fuel that will be used while in port. All but the 80,000-DWT ships will have inert gas systems for control of hydrocarbon emissions from the ships' cargo tanks and reduction of emissions from the ships' boilers.

Marine Terminal

A marine unloading facility containing three (or possibly two) tanker berths is to be constructed off the southern portion of the present Pier J for lease to SOHIO. Limited dredging of this area will be required to accommodate permanent berths to handle ships up to a maximum of 165,000 DWT. Approximately 2,500,000 cubic yards (1,900,000 m^3) of material in the terminal area must be removed from the ocean floor to a depth of 62 ft (19 m). In addition, about 2,600,000 tons of Catalina Island quarry rock will be used to create a breakwater offshore of Pier J, in order to provide protection for the marine facilities. A trestle will connect the shore facilities with the berths. Each berth will be connected to the onshore tanks by trestle-supported 48-in. (120 cm) unloading lines.

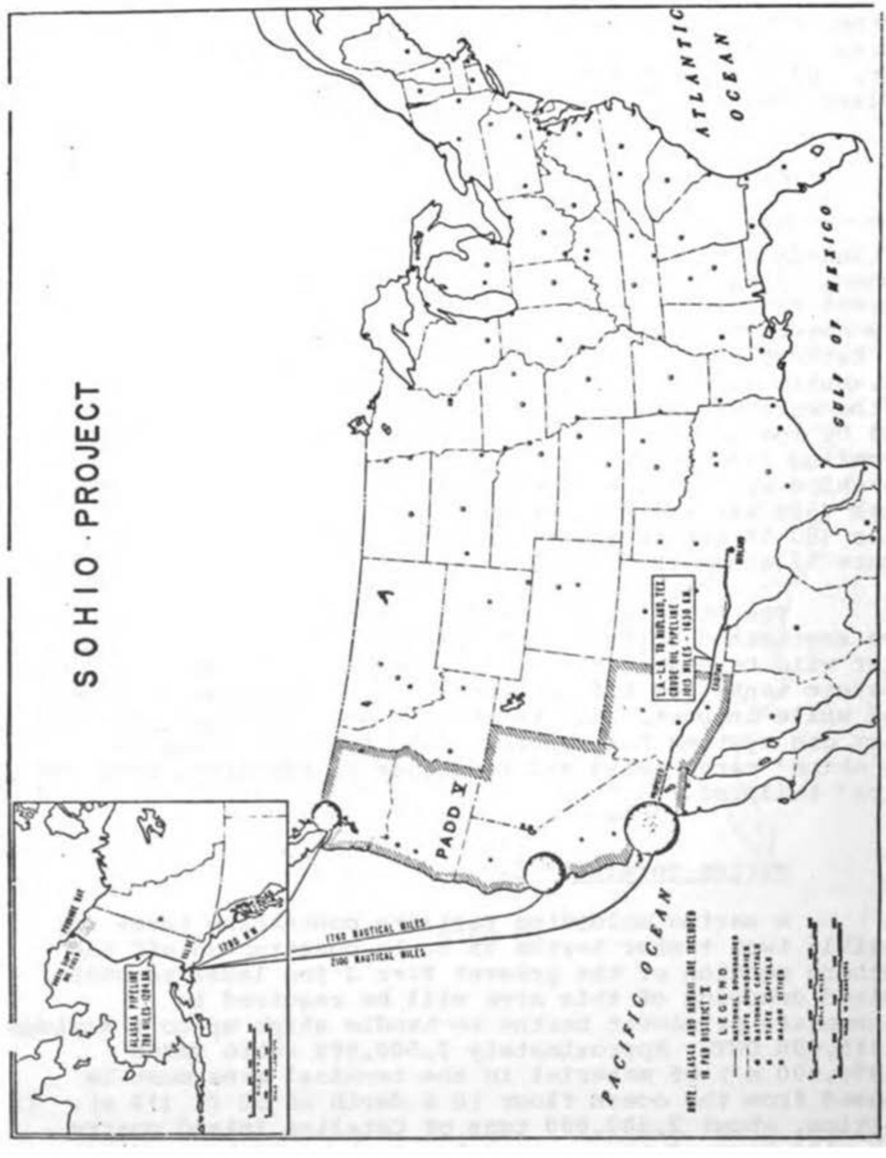

SOHIO PROJECT
ATLANTIC OCEAN
GULF OF MEXICO
PACIFIC OCEAN
PADD V
1760 NAUTICAL MILES
2100 NAUTICAL MILES
LEGEND

FIGURE 12

Unloading rates through mechanical, articulated unloading arms will be approximately 120,000 barrels of crude per hour, at a temperature of between 73°F and 93°F, depending on the time of year. This oil will be pumped to a 30-acre (12 ha) storage facility on Pier J, consisting of three 615,000-barrel working capacity floating roof tanks. The 64-ft (19 m) high, 270-ft (82 m) diameter crude oil tanks provide a combined storage working capacity of 1,800,000 barrels. The tanks are to be contained behind 16-ft (5 m) high reinforced concrete dikes, designed to hold up to 1.5 times the capacity of each tank. After the crude is unloaded into these storage/surge tanks, it is to be transferred inland approximately 11 miles (17 km) via a new 48-in. (120 cm) pipeline to a new storage/distribution facility to be constructed at the existing North Long Beach Hynes Tank Farm. Pump and metering equipment at Pier J will facilitate the transfer of crude to Hynes.

Hynes Terminal

The Hynes oil tank farm, owned by ARCO for more than three decades, is located some 10 miles (16 km) from the Port of Long Beach. It became a pivotal part of the SOHIO proposal in the sense that it was needed as a supplementary storage area and as a pumping station for delivering about 200,000 bpd to local refineries.

The ARCO facility has 33 fixed-roof crude oil and product storage tanks located on the 104-acre (42 ha) site, which must be removed from service. This removal is heavily based on Environmental Protection Agency requirements that in cases where hydrocarbon emissions already exceed acceptable standards, new facilities cannot be built without removing a commensurate number of existing facilities, so that the emissions problem is not permitted to exceed its current level. Thus SOHIO is in the position of having to buy the obsolete ARCO facility, remove it from service, and replace it with two modern 615,000-barrel-capacity storage tanks, which will be equipped with floating roofs and a 10.5-ft (3 m) containment dike.

The ARCO facility was developed some 10 years after a modest-income residential community called Cherry Manor had been completed and occupied. The rear yard lines of some of the residences coincide with the protective fencing around the tank farm.

Cherry Manor has thus found itself as a centerpiece in a project that has much broader national implications.

Midcontinent Pipeline

This pipeline will connect the inland tankage at the Hynes facility with the terminal facility located near Midland, Texas, a distance of over 1,000 miles (1,600 km). Approximately 800 miles (1,280 km) is in-place natural gas pipeline. The system will be capable of transporting crude oil at a rate of 500,000 bpd through Southern California, Arizona, New Mexico, and Texas.

Approximately 240 miles (384 km) of the total proposed line (not including the Pier J to Hynes lines) is in California. Of this, about 122 miles (195 km) is existing 30-in. (75 cm) diameter steel pipeline presently being operated as a natural gas line by the Southern California Gas Company (SCGC). About 118 miles (188 km) of new, 42-in. (105 cm) pipeline is to be constructed.

The existing SCGC natural gas line must be decertified (removed from service) before SOHIO can start construction. The SCGC line generally parallels Interstate 10 from the Beaumont area east and south to Ford Dry Lake and is part of the SCGC distribution system. This system connects the southern California area with the El Paso Natural Gas (EPNG) Interstate Transmission System and supply sources in Texas, Oklahoma, Kansas, New Mexico, Colorado, Arizona, and Utah. Removal of the Southern California Gas Company pipeline represents approximately 11 percent of the design throughput capacity of the California system. The average 1975 gas flow through this line was 124,000,000 cubic feet per day (MMCFD). The volume through this line has been decreasing since its construction in 1971 and is expected to continue to decrease to about 80 MMCFD by 1980, if the line remains in service. The second natural gas line that must be decertified belongs to EPNG and generally extends from Ehrenberg, Arizona, to Jal, New Mexico. The issue of decertification also must be resolved for this natural gas line.

Major components of the California-related action include:

- 72.5 miles (115 km) of new buried 42-in. (105 cm) diameter pipeline from Hynes Terminal to Redlands
- Redlands pump station; Redlands maintenance station
- 11 miles (17 km) of new buried 42-in. (105 cm) diameter pipeline from Redlands to a point 4 miles west of Beaumont

- 120.4 miles (192 km) of converted existing 30-in. (75 cm) diameter pipeline, consisting of buried natural gas line owned by the Southern California Gas Company
- Indio Pump Station and associated surge tankage
- Desert Center Pump Station
- 31.7 miles (150 km) of new buried 42-in. (105 cm) diameter pipeline from a point 19 miles (32 km) east of Desert Center to the Colorado River near Blythe, California
- Colorado River underwater crossing
- Various mainline valves
- Control and communications system

THE FINANCIAL DIMENSIONS

When operational, the project will supply additional revenues totaling $10.3 million, on an annual basis to governmental tax jurisdictions for the life of the project. The elements composing this net total include property tax revenues on SOHIO land and improvements; annual petroleum throughput charges; franchise fees, and lease payments. This annual income to the taxing jurisdictions (state of California; Los Angeles, Riverside, and San Bernardino counties; and municipal governments) may be expected to increase if property tax rates also increase.

Construction of the project is expected to generate approximately 4,500 jobs, both direct and indirect, through the three-county area. Indirect jobs are those that result from need for additional service employment generated by the requirements of the SOHIO construction workers (including construction material expenditures and employee expenditures). This two-year employment total represents a 0.09 percent increase in current three county employment and about 1.5 percent of the nearly 315,000 unemployed in the three county area.

When the marine terminal and pipeline facilities are operational, the total project is expected to add approximately 430 permanent positions. In addition, about 300 indirect positions are expected to be added as the result of increased expenditures by the operators of the project. This total of over 700 jobs corresponds to an

approximate 0.02 percent change in existing three county employment figures.

Project payroll during the construction of the project is expected to exceed $60 million over the two-year period. Of this, almost $18 million is expected to be paid to residents of the city of Long Beach.

During construction, public revenues would average $2,382,000 per year for each of three fiscal years. These revenues would result from property taxes, sales tax subventions to local government, building-permit and plan-checking fees, and utilities taxes. The only significant governmental cost would be for relocating Fireboat Station 15 within the port. This would be amortized over many years at an annual cost of about $43,200.

Because the port plans to issue bonds to finance its costs of construction, the port's bonded indebtedness will increase about 233 percent owing to the project. Debt service on the bonds will require annual payments of $4,539,000. After bond payment and amortization of the cost of relocating the fireboat station, total annual net public revenue when the facility is operational will be $7,039,000. Of this total, $2,598,000 will accrue to Long Beach agencies (the city, the port, the unified school district, and the community college district). The remainder will go to the county and to various special districts in the area.

KEY ENVIRONMENTAL CONSIDERATIONS

The environmental aspect of the pipeline project was viewed in the EIR in the context of two major elements: the port terminal and storage facilities and the pipeline from Long Beach (Hynes) to the Colorado River. The organizations that prepared the EIR, as required by California law, were the California Public Utilities Commission and the Port of Long Beach. They were assisted by:

Air Resources Board
Coastal Commission
Department of Fish and Game
Department of Conservation (Division of Oil and Gas)
Department of Navigation and Ocean Development
Department of Parks and Recreation
Department of Water Resources
Energy Commission
Los Angeles Regional Water Quality Control Board
Office of Planning and Research
Resources Agency
South Coast Regional Coastal Commission

State Lands Commission
State Water Resources Control Board

For the purposes of the Committee on the Impact of Maritime Services, the primary concern is associated with the environmental effects of the tanker terminal and storage facilities, at both Long Beach Port and Hynes. The most controversial element in terms of ecology was the impact of the project on the air quality of the Los Angeles basin. The state agency directly involved, the Air Resources Board (ARB), under the chairmanship of Tom Quinn, initially took a strong position questioning the project. The main controversy was over hydrocarbon and sulphur dioxide emissions, with wide discrepancies between the projections put forth by the ARB and those put forth by SOHIO. The controversy resulted in development of a series of trade-offs jointly evolved by the state regulatory agency and the developer. Quinn now has become the strongest proponent for the project at the state level.

Air Quality

According to the EIR, emissions of hydrocarbons and sulfur dioxide are the main problem. About 1.7 tons of hydrocarbon vapors will be released each day. Broken down, this is 1.2 tons per day in evaporative gas from the storage tanks, 0.3 tons per day from tanker unloading operations, and 0.2 tons per day from other marine terminal-related operations. The project will also result in sulfur dioxide (SO_2) emissions from the tankers and from the electrical generating facilities producing power used by terminal and pipeline pumps (4.7 tons per day). These emissions, however, are spread among the many power plants in the regional electrical generating grid.

To mitigate the storage tank hydrocarbon emissions, SOHIO proposes to remove from service a number of existing storage tanks. The storage tanks to be removed from service at the Hynes facility will reduce hydrocarbon emissions by an amount equivalent to the amount added by the proposed tankage. The SO_2 emissions from the tankers will be mitigated by the ships' use of low-sulfur fuel while in port. Tanker purging that could emit large amounts of hydrocarbons will not be done at the port by the SOHIO fleet. Ballasting operations will be minimized, thereby substantially reducing hydrocarbon emissions.

California's initial position was spelled out in a letter to Frank Zarb, then head of the Federal Energy Administration (now DOE) from Quinn, dated July 7, 1976. The letter concluded: "Construction of the project in that area [Los Angeles basin] would add an enormous amount of

additional air pollution...and undermine decades of work by federal, state, and local pollution control agencies. Locating the project in Long Beach, as now proposed, would be tantamount to ending all efforts to restore healthy air to the Los Angeles area." However, a slight easing of the opposition is evident. On August 10, 1977, in an article by Jack Germond and Jules Witcover in the Washington Star, Quinn was quoted as saying that the state is not unalterably opposed to construction, but will insist that SOHIO comply with the state's antipollution standards, which could cost $80 million to meet.

In the July 1976 letter it was noted that (a) the loss of a natural gas pipeline to petroleum service could deprive the state of clean-burning fuel and force the additional use of more polluting fuel oil and (b) the evaporation of hydrocarbon vapors would cause a substantial increase in photochemical oxidant. Concentrating on the storages tanks and tanker operations, so-called stationary pollution sources, the letter stated that, "since the national ambient air quality standard for oxidant is being violated in all air basins in which SOHIO might locate in California, both EPA and the state would, in the first analysis, be required to deny permits...however,...an applicant such as SOHIO can be issued permits if the applicant can demonstrate a sufficient 'trade off' to completely offset the emissions from the new project."

The gap between SOHIO's estimate of emissions and the state's is extraordinary. To place them in perspective, in August 1977 the ARB, using a projection of the worst possible case (including tanker emissions for the portion of the voyage between Point Conception and Long Beach), contended pollution to be equivalent to the daily exhaust emissions of 2,700,000 cars. SOHIO, using its expectation of average emissions, estimated the additional pollution to equal emissions from 38,000 cars. Even if SOHIO's figures are accepted, they still fall far beyond the state's source review rules on stationary emissions, almost 15 times as much, and twice as much as the low estimate for hydrocarbons made by Pacific Environmental Services, consultant to the ARB.

RETROPSECT: MITIGATION AND COMPENSATION

The choice of Long Beach over Los Angeles is in itself an example of mitigation; consider, for example, the following: (a) the protection of least Tern habitat and fishing activities, (b) a six times less volume of potential dredged material, and (c) recognition of interport competition as a significant factor. At the national level, Long Beach has claimed advantages over competing ports: (a)

a long history of handling tankers of the contemplated size (80,000-165,000 DWT), combined with the deepest water available outside Puget Sound, and (b) the use of existing but idle gas lines for 75 percent of the pipeline route to Midland, Texas.

Local mitigation measures include (a) least visual intrusion of storage tanks, (b) clean ballast, and (c) low-sulfur port bunkers and inert gas systems on the proposed tanker fleet. Public revenues have been estimated at a net increase of $5 million over the two-year construction period, leveling off at $10.3 million annually, plus 730 permanent direct and indirect jobs. (This is in addition to 4,500 additional jobs during the construction period.)

The remaining issues appear to be either national or regional (California versus Midwest) or narrowly local (air quality in the Hynes residential area). A few examples may suffice:

- The state of California wants to have guaranteed access to pipeline gas from Alaska or Canada in return for transferring surplus oil to the Midwest. This surplus oil issue is said, by some, to have been explained to Californians at a relatively late stage because oil companies had a residual hope of shipping excess petroleum to Japan before dependency on foreign imports became a national issue. The fact that SOHIO's primary marketing area is in the Midwest added more seeds of doubt to the California perception of the proposal.

- Local air quality will be affected by oil vapors from tanker ballasting and storage effluent. (SOHIO proposed buying out nonessential emitting facilities and installing vapor control equipment as a trade-off.) The company has also scaled down its proposal from three berths to two, thereby lowering throughput from 700,000 to 500,000 bpd, leading to reduced pollution potential.

Trade-offs suggested by the Air Resources Board as conditions for a permit included the following: (a) purchase of sulfur scrubbers by SOHIO for installation in Southern California Edison power plants (Long Beach, Huntington Beach, and El Segundo); (b) switch of tanker operations from 0.50 percent sulfur fuel to 0.25 percent; and (c) hydrocarbon solvent absorbers at 13 local dry-cleaning plants to be paid for by SOHIO.

- The Hynes residential neighbors had understood that the aging 33-tank farm in its backyard would be eliminated. Thus they have raised opposition to the construction of two new 615,000 bbl crude oil tanks as a replacement.

CONCLUSION

The foregoing case material, unlike some of its companion pieces, discourages simplistic conclusions. The committee was struck by its wide-ranging ramifications--from the purely local impact on the Cherry Manor residential community, to the widely recognized air pollution problems of the Los Angeles basin, to the larger scene of global petroleum policy.

In contrast to some of the other illustrative cases--for example, the LNG terminal at Cove Point, Maryland--the state (California, through its Air Resources Board) has taken a strong position as the interpreter and defender of the public interest despite strong counterpressure from the top administrators of federal energy policy. To some extent, this strong intervention at the state level tended to downplay public participation at the local level, in the Cherry Manor community, or in the larger Los Angeles basin area. SOHIO operated with a very small staff in the Long Beach area, relying heavily on personal contacts with key local and state officials in the Port of Long Beach and in the state of California. This is in sharp contrast to the detailed local contacts that characterized the New England Energy Company effort in Maine.

It is interesting to note the sharp divergence of interests between the Port of Long Beach, which stands to realize very substantial public revenue and employment benefits from the proposal, and the larger Los Angeles basin and state of California interests, which primarily focused on the problem of adverse emissions impacts in an area that already has a nearly unmanageable problem.

This conflict of widely varying public interests--be it southern California or the nation at large on the one hand and one of California's most vibrant seaports on the other--is one of the most interesting facets of this case.

In late August 1978 a press conference held by state officials and SOHIO executives drew particular attention to the antipollution equipment to be installed at the Southern California Edison power plant. This $80 million project will be financed by SOHIO as a device for reducing existing pollution to offset new pollutants emanating from the oil discharge terminal. Governor Jerry Brown termed this agreement "historic" because "it's the first pollution trade-off of this magnitude." Under the California environmental trade-off policy, a company can only build in an area with a high pollution level if it first eliminates more pollution than its new facilities will emit.

In November 1978 the voters of Long Beach were to pass judgment on a municipal referendum dealing with the city ordinance that authorizes the terminal lease between the Port of Long Beach and SOHIO.

SWAN ISLAND SHIP REPAIR YARD
PORTLAND, OREGON

In November 1976 the voters of the tricounty area surrounding the Port of Portland, Oregon, gave a 57.8 percent affirmative vote to an $84 million general obligation bond issue to expand the Swan Island Ship Repair Yard.

A Citizens Evaluation Committee, appointed by the Port Commission, sharply modified the original staff proposal and insisted that the new facility become self-amortizing as soon as possible instead of reserving the increased cash flow for future port expansion. The citizen input was credited with substantially enhancing the acceptability of the basic proposal.

This illustrative case was chosen in part to reflect the special requirements for public involvement imposed upon a port that must rely heavily on general obligation as opposed to revenue bonds.

Some key factors: "Save Our Ships"; added jobs and economic stimulus; solid business, labor, and media support; and historic identification of this West Coast city with marine activities.

SWAN ISLAND SHIP REPAIP YARD
PORTLAND, OREGON

BACKGROUND

The Port of Portland, Oregon, located some 77 miles (123 km) inland from the Pacific Ocean, is unique among major U.S. ports in its ownership of a ship repair yard. Located on 125 acres (50 ha) of Swan Island--a dredge spoil containment area along the Willamette River in the shadow of the central business district--the Swan Island Ship Repair Yard has been a major source of port revenue since it was acquired from the Kaiser shipbuilding interests three years after the end of World War II. The facility has eight repair berths and three floating dry docks with capacities ranging from 14,000 to 27,000 tons. The port provides equipment, such as gantry cranes, and berthing facilities and services for contractors on a lease-rental basis. The port operates the dry docks.

In February 1976 the Director of the Port of Portland proposed to his nine-member Board of Commissioners a major expansion of the ship repair yard. The centerpiece would be a new dry dock, 982 ft (300 m) long and 228 ft (70 m) wide, with a lifting capacity of 81,000 tons. In addition, the program would include three 1,000-ft (305 m) berths, a heavy tugboat to help guide ships to the new facility, and new cranes and other ancillary equipment. The total estimated bonding requirement (excluding the tugboat, which was subsequently eliminated from the program) was $84 million--about 11 percent of which represented allowance for inflation and accelerated costs.

The port staff recommended that the program be financed by a general obligation bond issue, and it was put before the electorate of the three counties that constitute the Port District--Multnomah, Clackamas, and Washington--in November 1976. The effect of the increase in taxes was expected to be small--initially 49 cents per $1,000 valuation in the tricounty area and declining to 29 cents per $1,000 after 10 years.

While the staff recommendations emphasized the need for an expanded ship repair capacity, the proposal had another basic motivation--sufficient cash flow to make possible the financing of other port capital needs without recurrent returns to the voters for permission. (The port is authorized to issue $3 million annually in general revenue bonds without a public referendum.)

Most of the other future capital requirements would be marginal at best as potential candidates for revenue bond financing. The Port of Portland, competing for business

with other West Coast ports from San Diego to Vancouver, B.C., had found that submitting proposals to the electorate on a piecemeal basis made financing difficult. It was estimated that over a 20-year period the surplus cash flow (before debt service) from the improved ship repair yard could amount to as much as $200 million. In its initial recommendations to the commission, the staff set forth a clearly articulated capital improvement program that included auto unloading and bulk cargo facilities.

Underlying the ship repair yard proposal was a consultant's analysis that suggested a broad market for the larger dry dock. In 1976 there were 47 ships in the Pacific commercial fleet that were too big and heavy to be handled by the existing facilities at Swan Island. As older and smaller ships are retired and longer and heavier ships placed into service, there could be a decline in the Portland shipyard activity unless a new larger facility is built. Moreover, the dimensions of the new dry dock would be such as to make it the only repair facility on the West Coast capable of handling the new generation of wide-bodied ships slated for the fleet to carry crude oil and, possibly, liquefied natural gas from the Alaskan North Slope. This fleet was expected to number some 35 vessels.

The staff analysis took into consideration the following:

1. Economic benefits: The expanded facilities would maintain Swan Island's competitive position and secure retention of 2,000 existing jobs as well as another 1,600 jobs linked to shipyard activity. Creation of 1,000 additional jobs directly or indirectly linked to the shipyard proposal was forecast. Payrolls and subcontracts, accounting for an inflow of $30 million annually in new money to the local tricounty area, would be boosted to well above $50 million by the new dry dock.

2. Environmental impact: Adverse environmental impacts were considered to be minimal and manageable, being mainly problems of noise, suspended particulates in the air, and additional traffic intrusion. By and large, most of the ships would be coming in with empty tanks or holds and thus would not constitute polluting sources themselves.

3. Financing: The Port of Portland has a long tradition of relying upon public support. The combination of general obligation bond and general revenue support added up to a tax burden picture in 1976 approximately as follows: city of Portland ($0.74/$1,000); Multnomah County outside of the city of Portland ($0.64/$1,000); Clakamas and Washington counties ($0.20/$1,000). In short, the impact of the ship repair yard expansion ($0.49/$1,000) would be a

relatively modest one in relation to already accepted burdens--less than $15 per year for a $30,000 valuation home.

RESPONSE TO THE PROPOSAL

While the Portland Port Commission, a nine-member group appointed by the Governor to staggered four-year terms, had a built-in tradition of reliance upon public support, the magnitude of the proposed general obligation bond issue--7 times larger than any previous bond issue--posed a special problem. In recognition of that, James Thayer, President of the Porland Port Commission, appointed a Citizens Evaluation Committee on April 9, 1976, and gave it specific assignments with respect to (a) design, location and cost of the proposed facility, (b) market opportunities and competitive factors, (c) environmental implications, (d) financing options, (e) impact on the tricounty economy, and (f) impact on tricounty taxpayers.

The committee, which had a tight time schedule for reporting back to the Port Commission, was reasonably representative of the tricounty area. It included (a) eight representatives of the business community, (b) three labor representatives, (c) two persons from the educational community, (d) three persons from the public media--newspapers and TV, (e) one lawyer, and (f) three persons who represented the impacted neighborhood and local social service agencies (Hazel G. Hayes, Director of the Albina Human Resources Center, located in North Portland, an area impacted by the port; Steven Roso, President of the North Portland Citizens Committee; and Nancy Hoover, a League of Women Voters member who has had a longtime interest in and involvement with the port).

The committee defined its objectives on the basis of three questions:

- Is there a need for a larger dry dock?
- Is it feasible, both economically and operationally, for Portland to fulfill that need?
- What are the financing alternatives available, and what is the preferable one?

After detailed hearings--involving the Port of Portland staff, a variety of consultants who had analyzed port activities, and a number of interested citizens--the committee reached conclusions that were very close to those of the staff on the first two questions.

It pointed out, for example, the competitive advantage of the public ownership of the dry dock operation as opposed to private ownership, citing (a) allowance for competitive bidding by more than one contractor for ship repair services (a technique that shipowners generally prefer) and (b) the lower cost of money for publicly financed capital facilities, thus permitting a more favorable rate structure. These factors were considered as significant offsets to the upriver location that separated Portland from the ocean. One of the consultant reports (the McMullen report) pointed out that the typical U.S.-flag vessel spends one third of its repair budget on dry dock, berthing, and crane tariffs as contrasted with only about one-tenth in Portland.

One environmental problem was singled out for special attention in the public hearings of the committee--the problem of Going Street, a predominantly residential street that had been a historic access route to the shipyard. The conflict between residential and commercial uses was one that had substantially predated the shipyard expansion proposal. The north Portland community, as the location of most of the port's facilities, had been most acutely conscious of the traffic congestion issue on the one hand but also of the job generation and economic impact of the port on the other. The balance between traffic and jobs was a well understood one--and one in which federally assisted solutions are still being sought--and thus did not create a serious deadlock.

On the third question the staff recommendation and the committee suggestions were sharply different. This became a critical factor in the ultimate public referendum on the issue.

THE KEY FINANCIAL ISSUES

The Evaluation Committee differed with the staff on the question of full taxpayer amortization of the $8¼ million general obligation bond issue, arguing strongly that a portion of the excess cash flow generating from the expanded dry dock should be allocated to defray this financial obligation. The committee's arguments in support of its position placed strong emphasis on the basic rationale of the bond issue in terms of its presentation to the voters. In effect, it downgraded the argument of the Port Commission staff supporting a long-term capital improvement program that would not have to rely on periodic voter support.

The key recommendations of the Evaluation Committee were as follows:

"A. The Commission should authorize a general obligation bond issue to be voted upon by Port district voters at a general (November 1976) or special election, the proceeds to be used to construct a new dry dock and related ship repair facilities at Swan Island. The issuance of the bonds should be subject to:

(a) Enactment of legislation by the 1977 Oregon Legislature allowing the Port to pledge and commit legally a portion or all of the revenues from specified Port operations toward payment of debt service (principal and interest) of a general obligation issue.

(b) A legal commitment by the Commission to the effect that the annual net incremental revenue increase over a base year (1975 or 1976) resulting from dry dock and ship repair facilities on Swan Island be first applied toward satisfaction of the debt service of the general obligation bonds for the new dry dock and repair facilities with any excess being available annually for other capital and operational needs of the Port.

(NOTE: Three of the members voted against the motion which adopted the foregoing resolution. Basically, they were of the opinion that the general obligation bond issue to be submitted to the people should be unconditional with a public commitment by the Commission to apply a designated portion, but not all, of the revenues generated by the ship repair yard toward retirement of the bond issue, the remainder to be applied toward other capital needs of the Port. One member who voted in favor of the majority position would prefer that the legislation be changed <u>first</u>, then the bond issue submitted to the people of the district.)

B. Any new dry dock should have a capacity to handle larger West Coast vessels now under consideration or construction and should include flexibility for future expansion. A dry dock of 185 ft inside width, expandable to 240 ft x 900 ft length with a lift capacity of 79,000 tons appears to satisfy this requirement.

C. The Committee has no basis for questioning the design or location of the new facilities as recommended by consulting engineers

and the Port staff. However, we recommend that consideration be given to the feasibility of improving the potential utilization of the dry dock by a design which would extend the overall length to 1,000 or more feet, and split the facility in such a manner so as to allow two ships up to 500 feet to be serviced independently in the dry dock.

D. The bond issue should be for a sum sufficient to provide the funds needed to construct the dry dock and facilities, currently estimated at $84,000,000 giving consideration to inflationary increases during the construction period.

E. Market considerations will dictate in part the terms of the bonds. A 20 to 30-year obligation with amortization of principal (redemption) to commence after the fifth year appears feasible and consistent with cash flow projections.

F. The Port Commission should seek enactment by the 1977 Oregon legislature of appropriate amendments to existing governing law which would allow it: (i) to issue legally revenue bonds backed by general obligation commitments where the revenue was insufficient to meet the debt service requirements; (ii) to issue legally general obligation bonds with a binding commitment of specified revenues to be applied toward debt service of such obligations; and (iii) to permit in a general obligation issue the capitalization of interest for a specified period. To the extent feasible, this legislation should parallel existing statutory authorization for other public districts. The law should allow for its application to existing general obligations if desired by the Commission.

G. Apprising the voting public regarding the Port's objecives is an essential part of any effort to expand dry dock operations and improve the harbor facilities. This marketing program must possess candor and credibility; at the same time, it must be basically simple and understandable. Effectively balancing this public marketing effort deserves top priority consideration by the Commission and its staff.

H. The Port's dry dock and berthing operations must remain competitive; the public subsidy should not be greater than is warranted by related economic factors. The McMullen Report

indicates that current tariff charges by the Port are appreciably lower than competing Pacific Coast ship yards. To protect properly the interests of the taxpayers of the district, the Commission should ascertain that the Port's charges to private users, both for the existing and for the new facilities, are warranted by competitive economic factors.

I. To the extent feasible, the Commission should define more specifically its future capital requirements and the economic benefits derived therefrom, coordinating this with adoption of more specific goals and objectives for the Port and emphasizing its priorities. Such an analysis should also have as a goal the making of the Port's operations as self-sufficient and profitable as possible.

The above modifications obviously shifted the emphasis of the public information campaign that was to follow and clearly influenced the future financial perspectives of the port itself. In fact, some of those originally involved in preparation of the port's case for the general obligation bond issue admit--not too reluctantly--that the shift in financial perspectives may have been the single most important aspect of the public campaign to follow.

THE NATURE OF THE CAMPAIGN

Because of the nature of its financial support, the Port of Portland, unlike many of its sister port authorities, was not unsophisticated about the problem of explaining itself to its taxpaying public. Traditionally, the port had offered citizens tours of the area on a regular basis, had followed a policy of openness about its internal affairs, and was thoroughly grounded in the problems of dealing with a watchful public that contributed materially to the financial support of the operation.

From the very outset in early 1976, there were energetic efforts to enlist support of the public media, newspapers, radio, and TV, in individual meetings with editors and general managers.

Meeting were held with top level staff personnel at the state and county levels, with legislative members, and with a variety of special interest groups.

To be sure, the reaction was mixed. For example, eight public meetings were held in the period of March through May 1976, at which the Executive Director and other

top personnel of the port presented the case. With few exceptions the attendance was disappointing at best, partly because the issue had not been sharply drawn.

Beyond the intensive activities of the Citizens Evaluation Committee, the public participatory effort was relatively limited. A group of volunteers, generally aware of and associated with the maritime-related industry, assisted with distribution of lawn signs, bumper stickers, and lapel pins. Major support came from an association of local ship repair companies, which formed the Marine Industries council. This group sponsored a paid public education program and hired a local advertising firm (Pihas, Schmidt, Westerdahl Company) to lead the program.

Phase one of this program--from November 1975 to May 1976--relied heavily upon such tools as press information briefings, editorial contacts, feature stories, and media advertising, including billboards, newspapers and magazines, and radio and television. The budget for this "awareness" program was estimated at $100,000. This entire sum was funded by the Marine Industries Council, and because it did not relate to any specific method of financing the new shipyard facilities (nor had one been put to the voters), it was not considered as political advertising under Oregon law.

Phase two--or the political advertising campaign--commenced on August 1, 1976, and proceeded through the November election. Contributions for this campaign, which totaled about $115,000, came from the general business and labor community. Heavy emphasis was put on television advertising, with other media in support: e.g., highly visible billboards; lawn signs; paycheck stuffers; buttons; postcards; flyers; and newspaper and specialty publications.

Generally, newspaper editorial coverage supported the program, emphasizing the economics of the proposal.

The key issue throughout the campaign was that of jobs. The SOS (Save Our Ships) steering committee, which emerged as the central strategy group, repeated the employment theme over and over again. Some retrospective analysis suggested that some of the statistics were more euphoric than fully justified, as, for example, the following from the June 1977 issue of the Oregon Times Magazine.

> But how many jobs and where? In a fact sheet circulated to the editorial boards of local newspapers, the SOS Committee claimed '4,400 direct and indirect jobs' from the ship yard's

regional impact. However, in their newspaper advertisements, the SOS Committee wrote: 'Here's what it means for Multnomah County: 19,245 jobs. An annual payroll of $262.9 million. An annual economic impact of $469.1 million.' The highest figure of all appeared during the educational campaign in a slick brochure distributed door to door. In inch-high letters, it stated, '55,000 Jobs'--one in every ten in the tri-county area.

The only 'jobs' figure rarely mentioned was the number of people who would be directly employed by the new dry dock--250. All the other 'jobs' figures relied on the idea that if the dry dock were not built, Portland's status as a seaport would rapidly decline.

THE ELECTION RESULTS

The final results in the November 1976 election showed a 57.8 percent affirmative vote in the tricounty area--a vote which showed very nearly equal pluralities in all three of the affected counties. A precinct-by-precinct analysis in Multnomah County showed that the affirmative vote in the residential areas closest to Swan Island was approximately the same as the overall vote.

In the postmortem that followed the election, the staff of the Port of Portland identified the following key factors in the affirmative result:

1. The nature of the Citizens Evaluation Committee: It comprised respected members from the business and labor communities. It concluded that the dry dock proposal would substantially benefit the community, a confirmation of the original staff position, but it recommended that the debt incurred in expanding the shipyard be taken off the tax rolls at the earliest possible opportunity--estimated at something between three and five years. This tended to generate a higher level of public confidence than might have accrued to the original staff proposal.

2. Economic issue: The Save Our Ships theme and the repeated references to the jobs being maintained and/or added to the economy apparently had a strong influence, regardless of arguments that the number of jobs was distorted.

3. The port's track record: There is apparently a considerable affinity between the Port of Portland and the metropolitan area population. Historically, the community has supported money measures to protect and expand maritime facilities. The port has been successful over the years in expanding marine commerce and generating new jobs; thus a degree of mutual confidence has evolved. Even though the $84 million general obligation bond issue was 7 times as large as a previous port-related bond issue, the affirmative votes were still there.

4. Early business and labor backing: Once the initial economic case had been made, business and labor support and newspaper editorial endorsements emerged in strength and perhaps inhibited emergence of organized opposition. Conditional doubt was expressed about the bond issue by one prominent civic organization--the City Club--but this was concerned more with timing than with substance.

5. Historic identification with marine activities: The Portland area's growth has long been keyed to its role as a seaport and a transportation center. National attention given the Alaskan Pipeline may also have aided the shipyard proposal, since the facilities in question were in part needed to serve the Alaskan oil tanker fleet, which was beginning service.

In the spring of 1977 the Oregon State Legislature allowed the port to issue general obligation bonds beyond the $3 million limit, thus paving the way for the bond sale of $84 million in May 1977, at an interest rate of 5.4 percent. The proceeds of the bond issue, plus $3 million of interest on temporary investments, were applied as follows:

Preliminary Plan and Engineering	$ 250,000
Dry Dock	39,900,000
Berths	17,050,000
Cranes	7,850,000
Utilities	7,300,000
Related Equipment and Facilities	2,500,000
Ballast Handling Facility	1,000,000
Buildings	800,000
Roads and Parking	550,000
Cost of Financing	250,000
Contingencies	9,550,000
	$87,000,000

Before the bonds were sold, the port received updated versions of several of the studies prepared for the Port Commission and the Citizens Committee in February and May 1976. The findings showed a substantial increase in the projected economic effect; in 1989, $127.6 million would be

added to the local economy, with a payroll of $107.4 million resulting from 6,200 direct and indirect jobs.

CONCLUSION

This illustrative case was selected chiefly for the special insights that it offers on problems of a port that must rely on general obligation bond financing for capital facilities as opposed to revenue bond financing. The Port of Portland has historically had a close relationship with its constituency and apparently used its reservoir of public credibility to good advantage in the bond issue campaign, although questions were raised about contradictory claims on the number of projected jobs.

The Port of Portland's reliance on modest general obligation bond financing ($3 million nonvoted limit) and general revenue support became an advantage in establishing favorable relationships between the port and its voting constituencies over the years.

It is interesting to note that the Port of Portland is one of relatively few U.S. ports that place heavy reliance on general obligation bond financing. Public Port Financing in the United States (Maritime Administration, June 1974) lists the following ports in this category, based on records for the period 1966-72:

Port	General Obligation Bonds as a Percent of Total Development Expenditures
New London, Connecticut	100
Portland, Oregon	99
Wilmington, Delaware	90
Houston, Texas	85
Jacksonville, Florida	80
Charlestown, South Carolina	70
San Francisco, California	62
New Orleans, Louisiana	49

The Citizens Evaluation Committee played a very substantial role and was probably a key factor in altering the basic nature of the proposal--that is, the shift from using surplus cash flow for future capital improvements in other areas of the port to a commitment to place the expanded shipyard on a self-amortizing basis as soon as possible. While the committee could in many respects be described as an "establishment" group in its basic orientation, it appeared to be independent in its assessment of the key issues.

THE DREDGING PROCESS: AN ANALYSIS OF DREDGING ISSUES IN SAN FRANCISCO BAY

Two separate studies--one by a predominantly shipping industry interest group (California Marine Affairs and Navigation Conference (CMANC)) and the other by an environmentally oriented agency (Bay Conservation and Development Commission (BCDC))--arrived at substantially similar conclusions about the problems of dredging and disposal of dredged materials in reports issued in 1975 and 1976.

The San Francisco Bay experience has broad national applicability. The key problems are jurisdictional overlap and duplication of reviews, procedures, and public hearings.

A 16-day, $29,000 maintenance dredging project required 329 days from permit application to permit approval.

Some possible ameliorative measures:

- Greater coordination of federal and state agency activities and development of more widely understood procedures and guidelines.
- Clarification of lead agency role at both the federal and the state/regional level.
- Improved public participation mechanisms and establishment of clearly understood time limits for agency review and comment.
- Expansion of long-term maintenance dredging authorizations with adequate provisions for periodic reevaluation.

THE DREDGING PROCESS

Two separate studies, one by the industry-oriented California Marine Affairs and Navigation Conference (CMANC) and the other by the Bay Conservation and Development Commission, arrived at similar conclusions about problems associated with dredging and the permit process of federal and state agencies. Their conclusions were seconded by a study prepared by the Maritime Administration, which recognized the national applicability of the California experience in the areas of jurisdictional overlap, multiplicity of permitting agencies, and duplication of review procedures and public hearings.

This discussion of the dredging process is based on two references: (a) Untangling Dredging Regulations, prepared by the Maritime Administration, Western Region, June 1976, and (b) An Analysis of Regulatory Problems Concerning Dredging Activities, prepared by the California Marine Affairs and Navigation Conference, September 1975.

Recommendations from the two studies are presented. The Marine Administration study is itself derived from The Regulation of Dredging, published by the Bay Conservation and Development Commission (BCDC), January 1976. CMANC is an industry "interest group" representing organized labor, ports, recreational boating, oil companies, ship operators, financial institutions and development associations. The BCDC, under the McAteer-Petris Act, has jurisdiction over the waters of San Francisco Bay with authority to issue permits for filling and dredging.

STATEMENT OF THE PROBLEM

Although the San Francisco Bay area is the focus of discussion in the previously mentioned reports, the subject of dredging has wide applicability in many areas of the United States. Dredging is necessary to develop new areas or to maintain existing channels; approximately 380,000,000 cubic yards (2,880,000 m^3) are dredged each year. Accordingly, dredging and attendant operations are considered by a strong majority of U.S. ports to be their most serious problems. The following remarks are brief statements of issues about dredging:

Dredging is regulated at several levels of government: federal, state, regional, and local. The oldest regulation, section 10 of the Rivers and Harbors Act of 1899, delegated authority over dredging and filling to

the U.S. Army Corps of Engineers (COE). Section 13 of the 1899 Act, commonly called the Refuse Act, authorized the COE to regulate refuse disposal in navigable waters of the United States. Another law, the Fish and Wildlife Coordination Act of 1958, gave a special voice to the U.S. Fish and Wildlife Service (FWS). In 1967, through an agreement with the COE, the FWS obtained a practical veto, inasmuch as any objections to a project by the USFWS can be overruled by the Secretary of the Army only after a lengthy procedure of consultation.

In addition to the 1899 Act and the Fish and Wildlife Coordination Act, much environmental legislation after 1968 dealt with dredging and filling and inspired parallel state and local legislation.

The 1969 National Environmental Protection Act (NEPA) clearly intends to "foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans" (section 101(a)) "to attain the widest range of beneficial uses of the environment" (section 101(b)(3)). Further, NEPA calls for all agencies of the federal government to utilize a "systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences...in planning and decision-making which may have an impact on man's environment" (section 102(2)(a)).

Although there is a clear mandate to balance the issues, regulation of dredging, except that by the COE, falls within the purview of a number of limited-purpose government agencies having little contact with the overall aims of a project. Some of these agencies, such as the FWS, have an effective or practical veto. The FWS is on record (in a letter to CMANC dated January 9, 1974) as stating ."..we presume there are times when our recommendations...would create economic and social effects; however, our agency does not have the responsibility for weighing the trade-offs involved."

The problems associated with dredging, according to the CMANC, are not with the goals of the regulations so much as with the regulatory process itself. Features of the process in California that cause expensive and confusing duplication and contradiction, unforeseeable delays, and prolonged uncertainty of the outcome are:

- Jurisdictional overlap (11 federal and 13 state agencies, plus 2 regional commissions and local departments)

- Duplication of review
- Duplication of procedures
- Duplication of public hearings

In addition, comments from different agencies are often contradictory.

The COE can act on a permit application within 60 days, but must wait until it has received comments from all relevant agencies, most of which are not bound by time limits. Thus the average time for processing an application in the San Francisco Bay region is 268 days.

An example, provided by CMANC, is a case of routine maintenance dredging of a canal for a homeowners' association, done every four years. The process took 329 days from permit application to final approval for a 16-day, $29,000 operation to dredge 8,000 cubic yards (6,080 m^3) of material.

These consequences contradict section 101(f) of the Federal Water Pollution Control Act of 1972 (FWPCA): "It is the national policy that, to the maximum extent possible, the procedures utilized for implementing this act shall encourage the drastic minimization of paperwork and interagency decision procedures and the best use of available manpower and funds, so as to prevent needless duplication and unnecessary delays at all levels of government."

RECOMMENDATIONS ON DREDGING BY FEDERAL AND INDUSTRIAL AGENCIES

The following are recommendations from Untangling Dredging Regulations, a Maritime Administration report, and the report of CMANC's Dredging Committee. They are set forth here for their applicability to dredging in other localities.

1. All agencies regulating dredging should adopt formal policies and guidelines for decision making, whether in permit processing or in commenting, and should review and update these policies and guidelines periodically.

2. A lead agency should be selected from among existing agencies with permit-granting authority to play a special coordinating role. At least initially, there should be a separate designation at both the federal and the state-regional level. All other agencies would have only commenting authority to the appropriate lead agency.

3. All federal and state-regional agencies should cooperate and coordinate their actions with respect to dredging, under the responsibility of the two lead agencies to: (a) develop common--or at least compatible and mutually acceptable--regulatory policies, and (b) coordinate or develop clear administrative procedures for expeditious permit processing, such as:

- One joint public hearing notice by COE on behalf of all permit-granting agencies--federal, state, and local.
- Joint public hearings for all public agencies.
- No multiple comments from a single agency, unless its director provides full explanation and justification of inconsistencies.
- Issuance of a single, common application form and procedure statement.

f. Specific time limits should be established for all agency actions.

5. The COE should expand the use of long-term maintenance dredging authorization, subject to necessary conditions such as periodic reevaluation and consistency with disposal policies. The state-regional lead agency should adopt regulations to the same effect, coordinated with COE procedures. Permits for any new project requiring maintenance dredging should include such long-term authorization.

6. In major coastal shipping areas, port planning should be cooperatively undertaken by the port industry, government (federal, state, regional, and local), and ad hoc citizen task forces where useful and should include an analysis of long-range dredging requirements.

THE FOREIGN EXPERIENCE: DEEPWATER POPTS IN WESTERN EUROPE AND JAPAN

Historical complacency about the environment in Western Europe and Japan gave way in the late 1960's to increasing recognition of the need for improved planning, effective controls and sanctions, and a higher level of communication among concerned constituencies.

The Japanese berth permit procedure for hazardous vessels is a case in point. The review process has been sharply strengthened and broadened in the past decade, partly on the basis of actual operating experience.

Other situations are (a) population relocation--or dislocation for an expanded Port of Antwerp; (b) the French Ministry for the Quality of Life adds a national perspective to water quality control.

Some key objectives: flexible long-range planning; stringent zoning; revocable leases; strong permitting criteria for new construction and operation; and automatic sampling and monitoring of major industrial effluents and area-wide pollution.

THE FOREIGN EXPERIENCE

That onshore deepwater ports have long been recognized in Japan and in Western European countries as a significant economic development tool provides a basis for interesting new insights into measures of public involvement and of mitigation and compensation. A wide range of national port subsidies in these nations have tended to stimulate larger, more complex, and more rapid developments and thus have fostered a sharper public perception of the economic importance of maritime facilities. Despite heavy reliance on continuing port development, however, in both Western Europe and Japan, there have been conscious built-in constraints and private citizen protections.

Historically, both areas have been relatively complacent about the environment until the middle-to-late 1960's, when there emerged a growing recognition of the need for improved planning, effective controls and sanctions, and better communications among concerned organizations. It was recognized that, in varying degrees, all existing deepwater ports have had an effect on the environment and that developments of this type and magnitude have inherent environmental costs that must be identified and carefully analyzed. While pure transfer ports generally can be designed and controlled to minimal levels of visual offense, water pollution, and the like, there is also a powerful urge to convert such ports into fully integrated industrial ports. The latter implies a far broader array of significant consequences that are much less amenable to disciplined control, such as vast land requirements for terminals, industry, and supportive urban development; transportation links into the port hinterland; pollution of air, water, and land by industrial emissions and spillage; and congestion by people and vehicles.

It is interesting to note that one of the major control devices adopted in the early stages was leasing tracts to industrial users rather than selling them. In many instances the leases were revocable in the event of major or recurrent environmental misbehavior. It is clear that construction permits and operations permits offer opportunities and incentives to foster long-term protections of the environment through constant monitoring or sampling.

SOCIOECONOMIC SIGNIFICANCE OF PORTS

While the United States has only recently launched its first practical application of the Deepwater Port Act of 1974 (Louisiana Offshore Oil Port (LOOP)), for a good many years, European and Japanese planners have recognized that onshore deepwater ports are of paramount importance in regional, national, and international trade and for both their transfer and industrial functions.

The deepwater ports of the 1960's came as a response to the superships of 200,000-250,000 DWT, which required berth depths of 65 ft (19.6 m) and more. In the context of 1980-1990, the "superport" will need the following features:

- Water depths of 100-120 ft (30-36 m), naturally or artificially sheltered, with efficient ship and cargo-handling facilities.
- Large industrial land area with good load-bearing properties for (a) storage and transfer (100-1,000 acres (40-400 ha) and (b) primary and secondary industrial development (10,000 to 100,000 acres (4,000-40,000 ha) with adequate power availability.
- Good transportation links with its hinterland.

A December 1973 report of the Hudson Institute (by Robert Panero and J. Y. Beigbeder) suggests that half a dozen or more of these superports could be expected to handle one third of the world's industrial processing before 1990. Prototypes cited included: Singapore, Tokyo Bay, Marseilles-Fos, and, to a lesser degree, Le Havre-Rouen. Rotterdam, currently ranked as the world's largest port, is limited by depth, as is Antwerp. In the United States, New York, San Francisco Bay, Los Angeles-Long Beach, and Houston-Galveston are also depth limited. Japan has begun to look far afield for solutions to the superport problem in the face of saturation by people and land use, and increasing pollution in many of its heavily populated areas. To save its remaining unspoiled areas, it has been looking actively at the possibility of opening new trans shipment ports and industrial centers abroad--for example, in Indonesia and Micronesia.

Japan and Western Europe have been major importers of oil for many years--a relatively recent condition in the United States. For another major bulk commodity, iron ore, the United States still imports proportionately less than Western Europe and Japan, but this volume is increasing rapidly. Therefore the attitude of "what's good for the

port is good for the nation" is understandably prevalent in both Japan and Western Europe, and it results in a lesser requirement for detailed economic and environmental impact studies and for the wide variety of supporting analysis with which our U.S. ports are familiar (except in the land-short Low Countries). Japanese planners even use a simple correlation of cargo volume with GNP to define port development requirements. The French gave to six of their ports--with special emphasis on Le Havre, Marseilles-Fos, and Dunkirk--considerable independence from local administration by setting them up as Ports Autonomes under national control, in 1965. These three ports are the mainstay of a policy aimed at thrusting France forward as the main channel for trade and investment between Western Europe and the Third World.

An aspiring superport will often opt for diversification (generally starting with oil or adding such capacity very early in the development process) to achieve an economical size. Often this may entail a very substantial environmental cost. Only careful planning and rigorous control can forestall an unacceptable degradation of the environment.

In contrast, some ports have elected to limit growth either concentrating on the transfer function with minimum local industrialization or selecting industries that can be compatible with the environment. They remain competitive through a specific set of favorable conditions (which must remain valid for the long term), such as access to raw materials, labor supply, and market demand. Thus Antwerp, Belgium, has given up its ambition to be a superport and has linked itself by pipeline to Rotterdam, while concentrating on improving its transfer productivity, which is now well recognized.

In a similar vein, the French government--faced with the implications of the growing superport attraction of Le Havre--has encouraged specialization in the neighboring ports of Rouen (roll-on/roll-off, general cargo, product exports, and light industry) and Dieppe (refrigerated cargo). Amsterdam--strait-jacketed for two decades by the "monoport policy" of the central government that yielded the enormous success of Rotterdam--has pinned its hopes on a limited capacity for its outer harbor (for 125,000-DWT ships) and a 500-acre (200 ha) industrial zone, in order to survive as an economic entity and commercial center, while at the same time retaining its unique environmental character.

CRITICAL ISSUES REEXAMINED

A number of critical issues have resulted from the Japanese and Western European experience. In this case material we would address ourselves primarily to those issues that bear directly on our two chief areas of investigation--special mechanisms for public involvement and ongoing problems of mitigation and compensation.

The Population Relocation Issue--Antwerp, Belgium

In 1958 the city of Antwerp annexed 6,200 acres (2,480 ha) of farmland for industrial development associated with its burgeoning port area. It had planned to relocate the villages that dotted the area. The inhabitants of Behrendrecht and Zandvliet elected to stay and fight rather than to relocate some 20 miles (32 km) from their jobs. They took the case to the high court and won.

In hindsight, low-income housing developments, increased air pollution, and crowding have severely altered the once pleasant environment. There is a real question whether the social and environmental costs were adequately counterbalanced by the economic benefits of this major port/industrial expansion. In addition, the farmers whose lands and homes were expropriated are still unhappy about changes in their life-styles and about adverse economic effects that have emerged since.

The legal counsel for the two communities--reflecting on the issues 10 years after his victorious court fight--felt that instead of fighting relocation, he should have spent more time and energy in securing better indemnities for his clients, such as (a) assuring better relocation planning and development of pilot housing, built in advance, in environments similar to those that had to be abandoned rather than blindly opposing them; and (b) providing financial advice to those who were suddenly confronted with the problem of handling monetary windfalls (expropriation payments) without any prior experience in how to do so.

Inasmuch as large ports are usually built in phases, successful or unsuccessful resolution of human problems associated with an early phase may make a major difference in the ability to achieve later phases. For example, Antwerps' attempts to expand the port on the west bank of the Scheldt River were long delayed by the villagers of Doel, who could point feelingly to the dismal plight of their kinsman on the other bank of the river.

Berth Permit Procedure for Vessels Carrying Hazardous Cargoes--Japan

The evolution of berth permit procedures for hazardous-cargo vessels (large oil tankers, LNG carriers, and the like) in Japan during 1970-75 is an interesting case of broadening and strengthening provisions for public participation.

A centralized, straightforward procedure authorized first in 1970 was modified in 1974. At the same time a comprehensive Maritime Safety Law was enacted to (a) involve the regional authority (prefecture) and (b) secure prior commitments from ship operators in an effort to weed out potentially irresponsible operators under flags of convenience.

In November 1974 the Yuyoh Maru, carrying liquefied propane gas (LPG) in insulated tanks and naptha in wing tanks, was struck by a steel carrier in Tokyo Bay. The naptha spilled and ignited, creating an inferno that killed all but one of the crew members of the colliding vessels. Fire raged for many days on the LPG/naptha carrier despite efforts to extinguish it; the vessel was finally towed to sea and sunk by the Japanese Navy. This impelled Japanese authorities to take another hard look at pending projects to receive large tankers and liquefied gas carriers.

This reappraisal was the basis for a new preliminary step of berth building applications--a comprehensive review before a local Safe Entry Committee of wide representation: local environmentalists, industry and university representatives, shipping and shipbuilding technicians, pilots and harbor masters, as well as maritime safety auditors.

A Custom-Built Approach to Water Pollution Control and Industrial Waste Disposal--France

Fos

The Ministry of the Environment, now called the Ministry for the Quality of Life, was created in 1970. Its activities are financed by an effluent tax imposed on municipalities and user industries alike. Its income is supplemented by financial penalties levied against industrial users who are caught in nonconformance with the legal requirements. (Effluent disposal authorizations are temporary and may be revoked in the event of recurrent violations.)

In the industrial port of Fos (near Marseilles), new industries are bound by their land lease to respect the laws applicable to effluent generated by them. They have access to a waste water grid and a water treatment plant. Despite active industrialization in the area, the objectives were, in 1973, to reduce the current industrial pollution level by 50 percent in 1975 and to eliminate it by 1980 in the Fos Gulf and Berre Lagoon.

On the industry side the Exxon refinery expansion from 60,000 to 160,000 bpd was carried out in the early 1970's with a reduction of the previous levels of air and water pollution--albeit at an added cost of about 14 percent of the total new investment. Similarly rigorous standards were applied to both a steel plant and a coke plant in the area.

Le Havre

A Port Authority study, confirmed by a government survey, showed that about 220 tons/day of industrial waste were generated in 1971 by major plants, requiring a $10 million treatment system of great complexity. In a first phase an existing 150 tons/day burning center was improved by water injection to reduce smoke coloration and ash dispersal. At the same time the prefecture launched a regional study of industrial waste generation and possible disposal solutions. The study was conducted by local industry syndicates grouped in an ad hoc committee and financed by the committee, the Ministry of Environment, and the Basin Agency. Finally, 25 oil and petrochemical industries in the region formed a group to study their own specific problem with assistance from the Service des Mines and the Basin Agency, which will both heavily subsidize the treatment system.

It is expected that by 1978-79 this cooperation of industry and government in publicly addressing specific regional industry problems will have brought forth a long-term solution to this general problem of solid waste disposal.

Many North Europe ports are cleaner than some U.S. East Coast ports, where floating debris abounds and gathers in conspicuous places. European ports are cleared of debris by small specialized boats constantly patrolling and skimming harbor waters. For a relatively small expense the appearance of the ports is substantially enhanced, and all users, companies and individuals, are thus psychologically encouraged to do their best to maintain the improved conditions.

FINANCIAL AND INSTITUTIONAL CONSIDERATIONS

Most foreign governments recognize the importance of deepwater ports and subsidize, to varying degrees, their expansion and deepening.

For example, France, under its 1965 port plan, increased its share of investment in the major Autonomous Ports from 50 percent to 80 percent for infrastructure (locks, jetties, fairways, and channels) and from 50 percent to 60 percent for superstructure improvements and secondary works (quay extension, etc.), while continuing to bear the cost of maintenance of channels and basins. However, to obtain private industry commitment to some port development programs, as well as to avoid disproportionate support to benefit a limited number of companies (e.g., oil), the French government has sought to reduce its financial participation in the very deep terminals (e.g., Antifer near Le Havre) to about 10 percent. Whether this trend can withstand the special pressures resulting from the oil crisis--pressures that tend to deter industries from such heavy capital expenditures without accompanying government cost sharing or loan guarantees--remains to be seen.

Similarly, the Japanese government subsidizes its municipal ports in varying ratios--40 percent to 100 percent--depending on their relative importance in the economic, social, and regional scheme of things. In the late 1960's the government reduced the subsidy for channel development of substantial depth. (A 50 percent subsidy for 40-ft (12 m) depths reduces to a 10 percent subsidy for depths beyond 53 ft (16 m).)

While there appears to be strong central government influence at the policy, financial, and environmental levels, no particular format for port management and/or degree of decentralization seems to have emerged. France has established its autonomous port authorities under the Ministry of Equipment with the power to transcend municipal boundaries in its major port areas. In contrast, Japan seems satisfied with municipal or provincial port management bodies, which replaced the National Port Authority in 1950. In further contrast, Great Britain is moving toward reorganizing its dozen major ports under the aegis and ownership of the National Ports Council and the British Transport Docks Board.

Apart from financial matters, a solution to the handling of environmental issues has been sought in the creation of special forums with jurisdiction over superport areas: the Center for the Prevention of Air and Water Pollution in Belgium; and the Permanent Secretariat for the Problems of Industrial Pollution (SPPPI) in France.

In the Belgian model, members of the Antwerp Center include university professors, port authority officials, municipal officials, and a delegate from the provincial government of Antwerp. After it has reviewed general plans for construction and operation and analyzed pollution abatement plans of an industrial applicant, the center advises municipal authorities whether and how a lease and permit should be granted.

The French SPPPI has a somewhat more formal structure, with representation from (a) Service des Mines (charged with control of classified, or potentially polluting, industrial plants), (b) Service Maritime (coastal waters shipping), (c) Basin Agency (rivers and aquifers), (d) Labor Department, (e) Equipment Department (port infrastructure), (f) Agriculture Department, (g) Health and Social Action Department, (h) Civil Protection Department, (i) Environmental Protection Bureau; (j) Power Supply, and (k) OREAM (Marseilles Metropolis Regional Planning and Development Agency).

Since 1971 the SPPPI has performed the following basic functions:

- coordination of the various permit processes in the Marseilles-Fos area;
- instigation and orientation of studies;
- development and monitoring of a pollution prevention plan; and
- dissemination to the public of information on pollution and its prevention.

The record indicates that the SPPPI has been instrumental in a 50 percent reduction of water pollution in the Berre Lagoon area, despite considerable industrial and municipal expansion. Industry has expended nearly $100 million in this effort to curb pollution.

RECAPITULATION

As one reflects over the decade or more of experience with onshore deepwater ports in Western Europe, two significant factors stand out that offer potential applicability to emergent problems of the United States:

- Flexible long range planning--incorporating careful zoning; revocable leases; stringent permit procedures for building and operating; automatic sampling and monitoring of major

plant effluents and area-wide pollution; and emergency measures to reduce air pollution immediately in extreme atmospheric conditions--is widely used and appears to be successful.

- Participation by all concerned parties is increasingly institutionalized and efficiently fosters overall economic and environmental welfare.

After 20 years of dedication to its industrial expansion through a unique symbiosis of top industries and national government, Japan is responding aggressively to environmental decay in its most populated areas in several interesting ways:

- By establishing an interactive national and regional total transportation system to foster regional industrialization, which is now spilling over its borders to seek international superport sites.

- By relieving congestion in Tokyo Bay by creating regional distribution and industrial ports (e.g., New Kashima) to feed the metropolitan area through its backyard and by limiting tanker entry into the bay itself.

- By increasing emphasis on local citizen participation and locally defined constraints and protections for handling hazardous cargos.

At best, population dislocation and relocation have always been a traumatic and difficult process in tradition-laden Western Europe and Japan. Past experiences (Antwerp) or the current experience (Dunkirk) has led port planners to make a strong plea for virgin sites. When this is not possible and when substantial greenbelts cannot be provided, there is a preference for relocating small communities instead of allowing them to remain in the heart of an industrial zone. In addition to substantial indemnities, suggested techniques for mitigation and compensation include, for example, advance construction of pilot replacement housing in environments as close as possible to the one that must be relinquished or special financial management assistance to families receiving large expropriation payments.

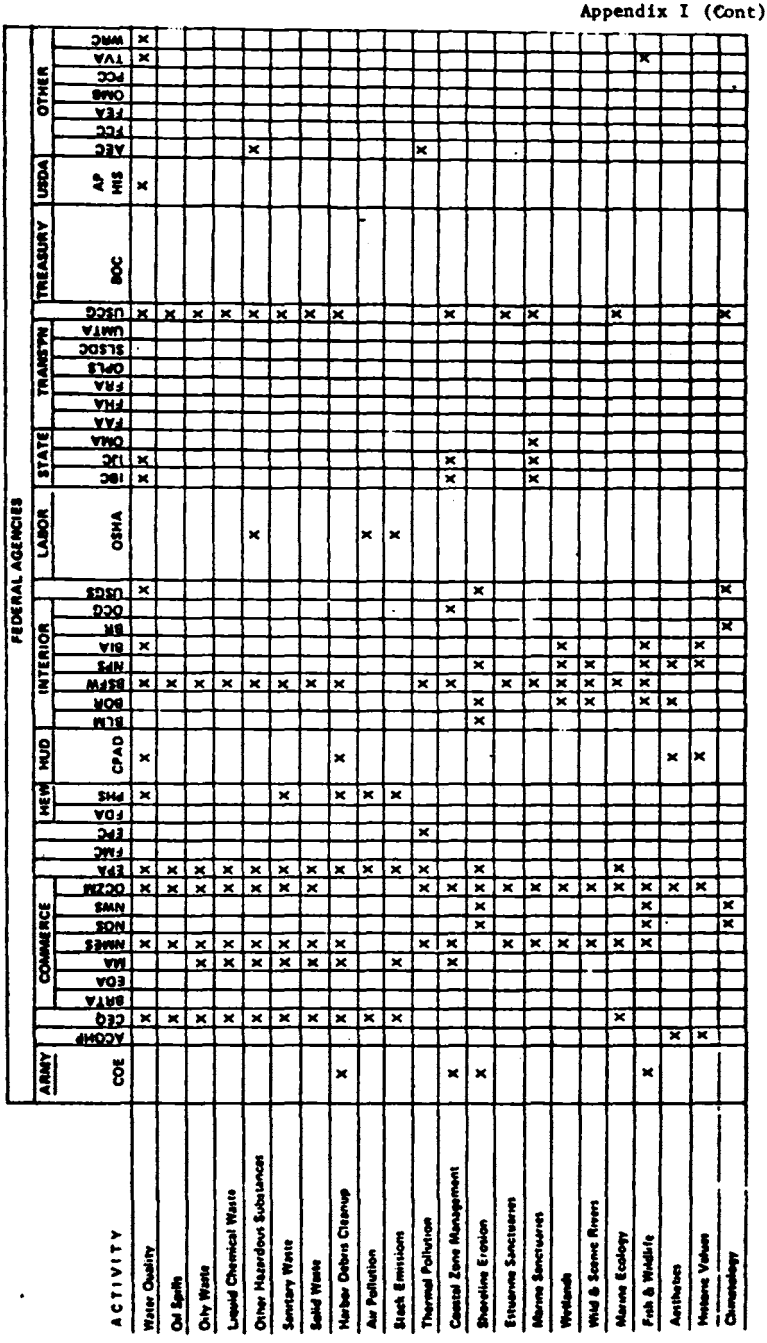
APPENDIXES

APPENDIX I: **FEDERAL AUTHORIZATION FOR ACTIVITIES IN U. S. NAVIGABLE WATERS OR OCEAN WATERS RELATIVE TO ENVIRONMENTAL PROTECTION**

	FEDERAL AGENCIES																																											
	ARMY			COMMERCE										HEW		HUD	INTERIOR								LABOR	STATE			TRANS'PN							TREASURY	USDA	OTHER						
ACTIVITY	COE	ACOHP	CEQ	BRTA	EDA	MA	NMES	NOS	NWS	OCZM	EPA	FMC	EPC	FDA	PHS	CPAD	BLM	BOR	BSFW	NPS	BIA	BR	OCG	USGS	OSHA	IBC	IJC	OMA	FAA	FHA	FRA,	OPLS	SLSDC	UMTA	USCG	BOC	AP HIS	AEC	FCC	FEA	OMB	PCC	TVA	WRC
Permits	X										X	X			X																					X								
Licensing				X							X		X	X															X	X	X	X		X	X			X	X					
Certification										X	X				X														X						X									
Letter of Permission or Approval	X	X					X				X					X	X	X	X	X	X	X	X	X		X	X																	
Coordination	X		X	X			X			X	X					X			X				X							X					X			X						X
Review	X	X	X			X	X	X	X	X	X					X	X	X	X	X	X	X	X	X				X	X	X	X	X		X	X			X			X			X
Enforcement	X			X			X				X		X	X	X				X				X	X	X				X	X	X	X			X	X	X	X	X			X	X	
Fines							X				X	X		X	X										X				X	X	X	X				X								
Environmental Impact Statement	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dredging/Filling	X	X					X			X	X						X		X																						X		X	
Dredge Spoils Disposal	X	X					X			X	X						X		X																X								X	
Anchorages	X							X																											X									
Aids to Navigation								X	X																										X								X	
Harbor Protective Works	X							X	X																																			
Harbor Lines	X							X																																				
Ports & Terminal Facilities	X			X	X	X		X		X													X		X				X					X	X	X							X	
Intermodal Transportation						X																			X				X	X	X	X				X								
Vessels				X		X		X				X											X		X		X							X	X	X		X					X	
Port Security & Safety																									X										X	X		X						
Vessel Traffic Control																																			X		X					X	X	
Locks, Dams & Canals	X						X						X						X		X			X		X	X															X	X	
Bridges & Causeways	X																									X	X			X	X				X									
Harbor Tunnels	X																																											
Pipelines	X																						X	X		X	X					X								X				

	FEDERAL AGENCIES																																											
	ARMY			COMMERCE										HEW		HUD	INTERIOR								LABOR	STATE			TRANS'PN							TREASURY	USDA	OTHER						
ACTIVITY	COE	ACOHP	CEQ	BRTA	EDA	MA	NMES	NOS	NWS	OCZM	EPA	FMC	EPC	FDA	PHS	CPAD	BLM	BOR	BSFW	NPS	BIA	BR	OCG	USGS	OSHA	IBC	IJC	OMA	FAA	FHA	FRA	OPLS	SLSDC	UMTA	USCG	BOC	AP HIS	AEC	FCC	FEA	OMB	PCC	TVA	WRC
Submarine Cables	X																																						X					
Aerial Power Lines	X							X					X																															
Recreation	X						X			X						X	X	X	X	X		X													X									
Recreational Boating								X	X									X																	X								X	
Boating Safety								X	X																										X									
Marinas and Small Boat Facilities	X				X																																							
Inland Waterways	X					X												X																	X								X	X
Great Lakes	X			X		X			X	X	X	X	X			X		X	X	X	X	X	X	X		X	X								X		X							X
St. Lawrence Seaway	X					X			X		X	X	X																				X				X							
Panama Canal & Terminals	X					X						X																														X		
Waterborne Commerce	X			X		X																						X							X								X	
Foreign Trade Zones				X		X								X	X																					X	X							
Offshore Ports & Terminals	X									X							X						X									X			X					X				
Outer Continental Shelf								X		X							X						X	X																				
Offshore Oil Drilling																																								X				
and Mineral Extraction										X							X						X	X																				
Offshore Nuclear Power Siting										X			X				X																					X		X				
Offshore Oil Leasing										X							X						X	X																X				
Energy Conservation				X									X										X	X																X			X	
Urban Development	X				X					X						X																		X										
Urban Mass Transit																X																		X										
Land Use Classification		X								X						X	X				X		X	X																				X
Flood Control	X								X							X						X		X						X													X	X
Water Supply	X				X					X			X		X	X					X	X		X																			X	X

Appendix I (Cont)



FEDERAL AGENCY IDENTIFICATION

ACOHP	Advisory Council on Historic Preservation
AEC	Atomic Energy Commission
APHIS	Animal and Plant Health Inspection Service (USDA)
ARMY	Department of the Army
BIA	Bureau of Indian Affairs (INTERIOR)
BLM	Bureau of Land Management (INTERIOR)
BOC	Bureau of Customs (TREASURY)
BOR	Bureau of Outdoor Recreation (INTERIOR)
BR	Bureau of Reclamation (INTERIOR)
BRTA	Bureau of Resources & Trade Assistance (COMMERCE)
BSFW*	Bureau of Sports, Fisheries & Wildlife (INTERIOR)
CEQ	Council on Environmental Quality (EXEC. OFC. OF PRESIDENT)
COE	Corps of Engineers (ARMY)
COMMERCE	Department of Commerce
CPAD	Community Planning & Development (HUD)
EDA	Economic Development Administration (COMMERCE)
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration (DOT)
FCC	Federal Communications Commission
FDA	Federal Drug Administration (HEW)
FEA	Federal Energy Administration
FHWA	Federal Highway Administration (DOT)
FMC	Federal Maritime Commission
FPC	Federal Power Commission
HEW	Department of Health, Education & Welfare
HUD	Department of Housing & Urban Development
IBC	Internation Boundary Commission (US–CAN & US–MEX)
IJC	International Joint Commission (US–CAN)
INTERIOR	Department of the Interior
LABOR	Department of Labor
MA	Maritime Administration (COMMERCE)
NMFS	National Marine Fisheries Service (NOAA–COMMERCE)
NOS	National Ocean Survey (NOAA–COMMERCE)
NPS	National Park Service (INTERIOR)
NWS	National Weather Service (NOAA–COMMERCE)
OCZM	Office of Coastal Zone Management (NOAA–COMMERCE)
OMA	Office of Maritime Affairs (STATE)
OMB	Office of Management & Budget (EXEC. OFC. OF PRESIDENT)
OOG	Office of Oil & Gas (INTERIOR)
OPLS	Office of Pipeline Safety (DOT)
OSHA	Occupational Safety & Health Administration (LABOR)
PCC	Panama Canal Company
PHS	Public Health Service (HEW)
SLSDC	St. Lawrence Seaway Development Corporation (DOT)
STATE	Department of State
TRANSPORTATION	Department of Transportation
TREASURY	Department of the Treasury (CUSTOMS)
TVA	Tennessee Valley Authority
UMTA	Urban Mass Transportation Administration (DOT)
USCG	U. S. Coast Guard (DOT)
USDA	U. S. Department of Agriculture
USGS	U. S. Geological Survey (INTERIOR)
WRC	Water Resources Council

*U.S. Fish and Wildlife Service as of 1 July 1974.

APPENDIX II:

MEMORANDUM OF UNDERSTANDING BETWEEN THE SECRETARY OF THE INTERIOR AND THE SECRETARY OF THE ARMY

In recognition of the responsibilities of the Secretary of the Army under sections 10 and 13 of the Act of March 3, 1899 (33 U.S.C. 403 and 407), relating to the control of dredging, filling, and excavation in the navigable waters of the United States, and the control of refuse in such waters, and the interrelationships of those responsibilities with the responsibilities of the Secretary of the Interior under the Federal Water Pollution Control Act, as amended (33 U.S.C. 455 et seq.), the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 601-666c), and the Fish and Wildlife Act of 1956, as amended (16 U.S.C. 742a et seq.), relating to the control and prevention of water pollution in such waters and the conservation of the Nation's natural resources and related environment, including fish and wildlife and recreational values therein; in recognition of our joint responsibilities under Executive Order No. 11288 to improve water quality through the prevention, control, and abatement of water pollution from Federal and federally licensed activities; and in recognition of other provisions of law and policy, we, the two Secretaries, adopt the following policies and procedures:

POLICIES

1. It is the policy of the two Secretaries that there shall be full coordination and cooperation between their respective Departments on the above responsibilities at all organizational levels, and it is their view that maximum efforts in the discharge of those responsibilities, including the resolution of differing views, must be undertaken at the earliest practicable time and at the field organizational unit most directly concerned. Accordingly, District Engineers of the U.S. Army Corps of Engineers shall coordinate with the Regional Directors of the Secretary of the Interior on fish and wildlife, recreation, and pollution problems associated with dredging, filling, and excavation

operations to be conducted under permits issued under the 1899 Act in the navigable waters of the United States, and they shall avail themselves of the technical advice and assistance which such Directors may provide.

2. The Secretary of the Army will seek the advice and counsel of the Secretary of the Interior on difficult cases. If the Secretary of the Interior advises that proposed operations will unreasonably impair natural resources or the related environment, including the fish and wildlife and recreational values thereof, or will reduce the quality of such waters in violation of applicable water quality standards, the Secretary of the Army in acting on the request for a permit will carefully evaluate the advantages and benefits of the operations in relation to the resultant loss or damage, including all data presented by the Secretary of the Interior, and will either deny the permit or include such conditions in the permit as he determines to be in the public interest, including provisions that will assure compliance with water quality standards established in accordance with law.

PROCEDURES FOR CARRYING OUT THESE POLICIES

1. Upon receipt of an application for a permit for dredging, filling, excavation, or other related work in navigable waters of the United States, the District Engineers shall send notices to all interested parties, including the appropriate Regional Directors of the Federal Water Pollution Control Administration, the United States Fish and Wildlife Service, and the National Park Service of the Department of the Interior, and the appropriate State conservation, resources, and water pollution agencies.

2. Such Regional Directors of the Secretary of the Interior shall immediately make such studies and investigations as they deem necessary or desirable, consult with the appropriate State agencies, and advise the District Engineers whether the work proposed by the permit applicant, including the deposit of any material in or near the navigable waters of the United States, will reduce the quality of such waters in violation of applicable water quality standards or unreasonably impair natural resources or the related environment.

3. The District Engineer will hold public hearings on permit applications whenever response to a public notice indicates that hearings are desirable to afford all interested parties full opportunity to be heard on objections raised.

4. The District Engineer, in deciding whether a permit should be issued, shall weigh all relevant factors in

reaching his decision. In any case where Directors of the Secretary of the Interior advise the District Engineers that proposed work will impair the water quality in violation of applicable water quality standards or unreasonably impair the natural resources or the related environment, he shall, within the limits of his responsibility, encourage the applicant to take steps that will resolve the objections to the work. Failing in this respect, the District Engineer shall forward the case for the consideration of the Chief of Engineers and the appropriate Regional Director of the Secretary of the Interior shall submit his views and recommendations to his agency's Washington headquarters.

5. The Chief of Engineers shall refer to the Under Secretary of the Interior all those cases referred to him containing unresolved substantive differences of views and he shall include his analysis thereof, for the purpose of obtaining the Department of the Interior's comments prior to final determination of the issues.

6. In those cases where the Chief of Engineers and the Under Secretary are unable to resolve the remaining issues, the cases will be referred to the Secretary of the Army for decision in consultation with the Secretary of the Interior.

7. If in the course of operations within this understanding either Secretary finds its terms in need of modification, he may notify the other of the nature of the desired changes. In that event the Secretaries shall within 90 days negotiate such amendment as is considered desirable or may agree upon termination of this understanding at the end of the period.

(Sgd) Stewart L. Udall Dated July 13, 1967

Secretary of the Interior

(Sgd) Stanley Resor Dated July 13, 1967

Secretary of the Army

APPENDIX III

MAJOR STEPS FOR WATER RESOURCES PROJECTS REQUIRING SPECIFIC CONGRESSIONAL AUTHORIZATION

PHASE I. STUDY AUTHORIZATION

Step 1. Initiation of Action by Local Interests: Local citizens who desire Federal assistance in improvements for navigation, beach erosion control, flood control, and related water resources purposes should contact their U. S. Senators and Representatives and request that provision of the desired facilities be considered by the Federal Government. Local interests may also request advice from representatives of the Corps of Engineers on the appropriate procedures, particularly on whether a study and project may be accomplished under one of the general continuing authorities for small projects. (See Appendix B for the major steps for small projects under continuing authorities).

Step 2. Consultation by Senator or Representatives with Public Works Committee:

a. If previous studies and reports on navigation, flood control, or related purposes have been made for the area in question, the Senator or Representative may request the Senate or House Committee on Public Works to adopt a resolution authorizing a review of previous reports to determine whether any modifications of the Chief of Engineers' recommendations in such reports would be advisable.

b. If no previous study and report has been made, the Senator or Representative may request the Committee to include authorization for a study in either an omnibus river and harbor and flood control bill or a separate bill.

c. In the case of beach erosion control, hurricane protection, and related purposes, the Senator or Representative may sponsor a bill authorizing a study or may request the Committee to adopt a resolution authorizing a study in accordance with Section 110 of the River and Harbor Act approved 23 October 1962.

Step 3. Action by the Senate or House Public Works Committee: Each Committee may seek advice from the Chief of Engineers on the desirability of authorizing a particular study. If the Committee to which a study request is referred is convinced of the need for the study, it will

take appropriate action. In the case of a previous study report on navigation or flood control, such action is a resolution adopted by the Committee, calling upon the Board of Engineers for Rivers and Harbors to make a review and referred to the Chief of Engineers for action. In the case of a beach erosion problem, the resolution requests the Secretary of the Army to cause the study to be made. If the previous report involves the project for the alluvial valley of the Mississippi River and tributaries, the resolution calls for a review of that report by the Chief of Engineers rather than by the Board. Where no previous study has been made, the authorization for a study may be included in either an omnibus river and harbor flood control bill or a separate bill for consideration by Congress.

PHASE II. ACCOMPLISHMENT OF STUDY

Step 4. Assignment and Funding of Study. When Congress authorizes a study, the Chief of Engineers assigns it to an appropriate reporting officer, usually the Division Engineer in whose region the study area is located. The Division Engineer usually further assigns the study to the appropriate District Engineer. However, before a study can be undertaken, funds for that specific purpose must be appropriated by the Congress and there is generally a time lag of one or more years between study authorization and study funding. Such funding is an entirely separate action.

Step 5. Conduct of Study by Division or District Engineer.

a. The conduct of a study and preparation of a report by a Division or District Engineer is a large undertaking requiring three to five years, occasionally longer, depending upon the size and complexity of the study. It involves analyses of the engineering, economic, environmental, and social aspects of potential alternative plans, or solutions. Coordination with interested Federal and non-Federal agencies and other groups and individuals is an integral part of the study process. Public involvement is encouraged, and public meetings are held as one means of fostering such involvement. The development and circulation of a draft environmental impact statement is a part of this overall process.

b. Basically, a study seeks to identify and assess the water and related resources problems and needs in the area under study; define and analyze potential alternative solutions, and their effects and feasibility; and select the most feasible plan, or solution, if there is a feasible one. This includes evaluating the various economic, environmental, and social effects and estimating the tangible benefits, costs, and cost sharing. A favorable recommendation depends upon a project's overall effects, including tangible benefits and costs, and upon the obtaining from responsible non-Federal officials a written expression of their intent to participate in the project.

c. Typically, a study begins with a preliminary study to determine if there is sufficient reason to spend time and money on a detailed study. Coordination and public involvement begin early in this stage. This includes an initial public meeting to discuss the study and seek the views and desires of local people. Such meetings are publicized and copies of an announcement are sent directly to all those known to be interested. If the preliminary study indicates that a feasible plan is possible, a more detailed study is made. At this time a formulation stage public meeting is held, during which the study results thus far are presented. As the study nears completion and the most feasible plan becomes more apparent, general coordination is continued, the draft environmental impact statement is developed and coordinated, a late stage public meeting is usually held, and the report is written.

Step 6. Issuance of Report and Public Notice by Division Engineer. Upon completion of the report of the District Engineer, the Division Engineer having jurisdiction reviews the report and transmits it with his recommendations and accompanying papers to the Board of Engineers for Rivers and Harbors, except that reports on the alluvial valley of the Mississippi River are transmitted to the Mississippi River Commission instead of the Board. For a study and report accomplished by a Division Engineer instead of a District Engineer, the completed report is similarly transmitted to the Board or the Commission. At this time, the Division Engineer also issues a public notice to all persons known to be interested, setting forth the findings of the study and the report recommendations, and inviting those who wish to do so to furnish further views to the Board or Commission. It is at this time that the field report is considered complete and official, and may be purchased at the cost of reproduction.

PHASE III. STUDY REVIEW AND PROJECT AUTHORIZATION

Step 7. Review by the Board of Engineers for Rivers and Harbors or the Mississippi River Commission. The Board of Engineers for Rivers and Harbors, an independent review group with a staff in Washington, D. C., is required by law to review all Corps of Engineers study reports specifically authorized by Congress, except for those which are under the jurisdiction of the Mississippi River Commission. The Commission, which is located in Vicksburg, Mississippi, reviews the reports under its jurisdiction. The Board, or the Commission, may hold public meetings before making its recommendations to the Chief of Engineers. A reviewed report is transmitted, with recommendations, to the Chief of Engineers.

Step 8. Preparation and Coordination of Proposed Report of the Chief of Engineers. Following receipt of a report and recommendations from the Board or the Commission, the Chief of Engineers prepares his proposed report and forwards copies of the report with accompanying papers to the Governors of the affected States and to other interested Federal agencies for formal review and comment. The revised draft environmental impact statement is also circulated for comment at this time. The Federal agencies generally involved may include, but are not limited to, the Departments of Agriculture, Transportation, Commerce, Interior, and Health, Education and Welfare; the Federal Power Commission; and the Environmental Protection Agency. The States and Federal agencies are normally expected to forward their comments to the Chief of Engineers within 90 days.

Step 9. Transmittal of Report to the Secretary of the Army. After the Chief of Engineers receives and considers the comments of the Governors of the affected States and those of other interested Federal agencies, as well as all comments on the revised draft environmental impact statement, he prepares his final report and the final environmental impact statement. He then submits the report along with the statement and other pertinent papers to the Secretary of the Army.

Step 10. Referral of the Report to the Office of Management and Budget. The Secretary of the Army submits a draft of his letter of transmission to Congress, along with the report of the Chief of Engineers and all pertinent papers, to the Director of the Office of Management and Budget for a determination of the relationship of the report to the program of the President.

Step 11. Transmittal of Report to Congress. Upon receipt and consideration of the comments of the Office of Management and Budget, the Secretary of the Army transmits the report of the Chief of Engineers, with all pertinent papers and comments, to the Congress. This step completes the action required of the Chief of Engineers and the Secretary of the Army in complying with the Congressional resolution or act authorizing the study. The final environmental impact statement is also filed with the Council on Environmental Quality at this time and is available to the public.

Step 12. Project Authorization by Congress. After the report is forwarded to Congress by the Secretary of the Army, it may be printed as a Senate or House Document, which is referred to as the project document. The Committees on Public Works of the Senate and the House may hold hearings on the report and consider those projects recommended in the report for inclusion in an authorization bill. Authorization for construction of projects is usually included in nation-wide omnibus river and harbor and flood control bills. However, in 1974 this resulted in a Water

Resources Development Act which, for the first time, authorized only certain advanced engineering and design work on some of the projects contained in the Act. These projects will require further Congressional authorization. Project authorization may also be by resolution by both Public Works Committees rather than by an Act when such a project has a Federal cost of less than $10 million. In all cases, however, Congress must appropriate funds before advanced planning, design, and construction can be undertaken; such funding is an entirely separate action.

PHASE IV. ADVANCED PLANNING, DESIGN, AND CONSTRUCTION

Step 13. Project Scheduling and Reaffirmation of Local Cooperation. Since budgets are limited, authorized projects are in competition with each other for funding. When a District Engineer is considering the scheduling of advanced planning, design, and construction of an authorized project, a pertinent factor is the availability of the required local cooperation. When appropriate, the District Engineer notifies responsible non-Federal officials concerning the required local cooperation. If satisfactory assurances are not received regarding intent to furnish local cooperation, the project is considered inactive. In the specific case of local flood protection projects, such projects are deauthorized as provided by law if the assurances are not provided within five years after a formal written request is made. See Step 16 regarding the actual provision of local cooperation.

Step 14. Request for Project Funds. In order to undertake a project authorized by Congress, funds for advanced planning, design, and construction must be requested from Congress. All requests for such funds are made annually through the Office of Management and Budget. If found to conform with the President's budgetary policies, the requests are transmitted to the Congress as part of the President's Budget and later considered by the Appropriations Committees.

Step 15. Appropriation of Project Funds. After completion of hearings by the Appropriations Committees considering the Department of the Army Civil Works Appropriations, a bill is reported out of Committee and referred to the full Congress for passage. The enactment then goes to the President for signature. Authority and funds are thereby given to the Chief of Engineers to initiate advanced planning, design, and construction of the projects included in the Act. Generally, further appropriations are required in succeeding years until the project is completed.

Step 16. Preparation of Detailed Plans. Before construction of a project can start, advanced planning and detailed design must be

accomplished by the District Engineer, with such assistance, review, and approval by the Division Engineer and the Chief of Engineers as are necessary. During this period, however, further Congressional authorization will be required for those projects for which only certain advanced engineering and design work was authorized, as mentioned in Step 12 above. The preparation of detailed plans averages several years, depending upon the type and size of project. Essentially, this process begins with a review and updating of the basic plan authorized and proceeds through progressively more detailed design to produce construction plans and specifications along with detailed cost estimates. A public meeting is also held in connection with the advanced planning. If the changes in the basic plan authorized are substantial, a draft environmental impact statement is also prepared and circulated for comment. A final statement is subsequently filed. Coordination with the affected States, other Federal agencies, and other affected interests is also maintained during advanced planning and design. At this time, the formal agreements and local cooperation required by law, of which local interests were notified in Step 13, must be provided by local interests and approved by the Secretary of the Army.

Step 17. Award of Contract. Upon completion of detailed construction plans and specifications for a project or a separable portion of it, qualified contractors are invited to bid on the construction of the proposed improvements. A contract is then awarded to the eligible low bidder for construction in accordance with the plans and specifications.

Step 18. Construction of Project. After award of a contract, the successful bidder mobilizes his equipment and personnel, and starts construction. The work is accomplished under the technical direction of Corps of Engineers personnel to insure that it conforms to the contract requirements. Upon completion of a project, which may involve more than one contract, a final sharing of the cost is determined and the Corps of Engineers or local interests assume operation and maintenance of the project in accordance with authorized requirements. Construction averages three to four years but may take more or less time, depending upon the type and size of project.

MAJOR STEPS FOR SMALL WATER RESOURCES PROJECTS UNDER CONTINUING AUTHORITIES

PHASE I. STUDY AUTHORIZATION

Step 1. Initiation of Action by Local Interests. Local citizens who desire Federal assistance in small localized improvements for navigation, beach erosion control, and flood control that qualify under continuing authorities should have their local officials contact the appropriate District Engineer (see Appendix C) and request that the desired improvements be considered by the Federal Government. This step is similar to Step 1 for a project requiring specific Congressional authorization.

Step 2. Determination by the District Engineer. The District Engineer investigates the problem or need. He determines if there is an appropriate Federal interest and if a study is in order and within the authorities available. If appropriate, he initiates a preliminary study, which may lead to approval of a detailed study. See the next step for approval of a detailed study.

PHASE II. ACCOMPLISHMENT OF STUDY

Step 3. Conduct of Study by District Engineer.

a. The conduct of studies and preparation of reports by a District Engineer averages several years for a typical small flood control, navigation, or beach erosion control project. The study concept and process are essentially the same as presented in Step 5 for projects requiring specific Congressional authorization, and they will not be repeated here because of length. (See Step 5, Appendix A, for discussion). The main difference for a small project under continuing authority is that if a preliminary study reveals sufficient reason to proceed with a detailed study, authority and funds to accomplish the detailed study are sought from the Chief of Engineers, through the Division Engineer. Another difference is that normally only one public meeting is held, although normal coordination, including circulation of a draft environmental impact statement, is accomplished.

b. A different distinction can be made for specific improvements under still smaller authorities of limited purpose and cost, such as for snagging and clearing channels and for emergency streambank and shoreline protection of public works and nonprofit public services. These normally involve only a simple study and letter report in lieu of a

two-stage preliminary and detailed study and report. Also, a public meeting is not normally held, although normal coordination, including circulation of a draft environmental impact statement, is accomplished.

Step 4. Issuance of Report by Division Engineer. Upon completion of the detailed report or letter report of the District Engineer, the Division Engineer having jurisdiction reviews the report and transmits it with his comments and accompanying papers to the Chief of Engineers. This step is similar to Step 6 for a project requiring specific Congressional authorization.

PHASE III. STUDY REVIEW AND PROJECT AUTHORIZATION

Step 5. Review and Approval by the Chief of Engineers. The Chief of Engineers reviews the detailed or letter report and files the final environmental impact statement with the Council on Environmental Quality, except that the statement is filed by the Secretary of the Army for beach erosion control reports. Approval by the Chief of Engineers constitutes project authorization.

PHASE IV. ADVANCED PLANNING, DESIGN, AND CONSTRUCTION

Step 6. Request for Project Funds. In order to undertake the advanced planning, design, and construction of an approved project, funds must be requested from the Chief of Engineers. Funds for the small project programs are budgeted annually, and normally sufficient funds are available when needed. However, there may be occasions when funding is delayed pending further appropriations for these programs.

Step 7. Preparation of Detailed Plans. Before construction of a project can start, advanced planning and detailed design must be accomplished by the District Engineer, with such reviews and approval by the Division Engineer as is necessary. The end result is construction plans and specifications along with detailed cost estimates. Coordination with affected agencies and other interests is maintained during this period. At this time, the formal agreements and local cooperation required must be provided. This step is similar to Step 16 for a project requiring specific Congressional authorization.

Step 8. Award of Contract. Upon completion of detailed construction plans and specifications, qualified contractors are invited to bid on the construction of the proposed improvements. A contract is then awarded to the eligible low bidder for construction in accordance with the plans and specifications. This step is the same as Step 17 for a project requiring specific Congressional authorization.

Step 9. Construction of Project. After award of the contract, the successful bidder mobilizes his equipment and personnel and starts construction. The work is accomplished under the technical direction of Corps of Engineers personnel to insure that it conforms to the contract requirements. After completion of a project, a final sharing of the cost is determined, and the Corps of Engineers or local interests assume operation and maintenance of the project in accordance with the local cooperation requirements. The step is similar to Step 18 for a project requiring specific Congressional authorization.

Source: U.S. Department of the Army, Corps of Engineers, WATER RESOURCES DEVELOPMENT, Washington, D.C., July 1974.

APPENDIX IV

EXAMPLES OF COORDINATED PERMITTING PROCEDURES

URBAN LAND INSTITUTE

AMERICAN LAW INSTITUTE—MODEL LAND DEVELOPMENT CODE

The Model Land Development Code of the American Law Institute (ALI) would create a permit register and joint hearing procedure for developments requiring multiple permits. The permit register would bring together a listing of all permits required by governmental agencies in a state prior to the commencement of development activity. Those seeking to undertake development requiring more than a single permit would be authorized to institute a joint hearing procedure. The party would file applications for each permit required. Rather than an individual hearing on each permit application requiring it, however, a single hearing, in which all agencies issuing permits would participate, would be held.

At the close of the joint hearing, the panel of hearing officers would include representatives of the permit issuing agencies. They would certify the record and issue a recommended decision containing proposed findings of fact and conclusions of law, together with an explanation indicating whether the applicant had complied with provisions of applicable law and was entitled to receive each of the permits. Within a specified time after the issuance of this decision, each permit-issuing agency would be required to issue its own decision. The individual agencies would not be bound by the findings and recommendations of the hearing panel. However, each agency decision would be deemed to have incorporated the findings and conclusions of the recommended decision unless explicitly modified or rejected. If an agency failed to issue a decision within the specified time, it would be deemed to have adopted the recommended decision of the hearing panel.

WASHINGTON ENVIRONMENTAL COORDINATION PROCEDURES ACT

The Washington Environmental Coordination Procedures Act (ECPA), like the ALI model, incorporates a joint hearing procedure.[2] Under the act, a developer must have appropriate local zoning for a proposed project prior to filing a master application with the department of the environment. Copies of the application are circulated by the department to each relevant state agency. (Unlike the ALI model, local agencies are not participants in the joint hearing process.) The state agencies have 15 days in which to respond, advising the department whether they have an interest and whether a permit is required. An agency failing to indicate that a permit is required may not exercise permit jurisdiction later.

Next, the applicant files completed applications for each of the required permits and a joint hearing is held before a panel of representatives from each agency. At the conclusion, the panel determines a common deadline for decisions. Each agency may make its own decision without being bound by the decisions of the others. An agency failing to issue a decision by the agreed upon deadline is deemed to have approved a project.

Experience with the Washington ECPA has not been entirely encouraging, due apparently to the way the program is structured. The developer's participation is voluntary, and relatively few projects have utilized the process. Where working relationships have been built up over the years with agency officials, developers have tended to take advantage of those relationships by securing permits in the traditional manner rather than proceeding through the joint hearing process. Developers are also reluctant to expose some permits to public hearings, when the traditional process would allow their issuance without hear-

ings. There is evidence that agency decisionmakers who are not enthusiastic about the coordinated hearing procedure encourage developers to avoid it. Furthermore, the statute permits the hearing panel to establish a time limit for agency decisions, but time limits are not enforced.[3]

While Washington is the only state having significant experience with a formally adopted coordinated permit procedure, other states have recently adopted or shown interest in such procedures. Oregon, Minnesota, and Maryland have adopted similar legislation. Florida, in its reorganization of environmental agencies, has sought to simplify the permitting process by eliminating separate inspections of projects by different agencies and substituting reports from a single inspection. Short-form application procedures are also being investigated in Florida.

VERMONT MASTER LAND USE PERMIT

Vermont has established a limited form of "one-stop shopping" for developments subject to one or more of a certain category of regulations. A master application can be filed to meet the permit requirements of subdivision, public buildings, mobile home park, and tent and travel trailor regulatory programs, as well as of the commercial and industrial development and land subdivision regulations under the Vermont Environmental Control Law. This procedure contemplates the issuance of a single permit covering all applicable regulations. Master applications can, in most instances, be filed with a district coordinator who will assist an applicant in completing the application and meeting appropriate supporting schedules.

Although the master application procedure is designed to reduce the burden of making multiple applications, the state permit procedure guide notes that "until there is meaningful integration of existing environmental laws, difficulties will continue to occur for those who need permits and those who administer the various permit programs."[4] An interim report of an interagency permit committee set up to review the administration of state regulatory and permitting programs noted that confusion and unnecessary expenses may arise from overlapping that has not been explicitly sanctioned by the legislature. In addition, some of the redundancy "is clearly the result of failure to reconcile laws relating to the same subject matter as new statutes are enacted." Among other measures, the interagency permit committee recommended a comprehensive executive and legislative review of regulatory programs.[5]

SAN FRANCISCO DREDGING PERMIT EXPERIENCE

Following action by the California legislature, the San Francisco Bay Conservation and Development Commission (BCDC) conducted an experimental coordinated permit review procedure on certain permits required for dredging in the San Francisco Bay.

The BCDC served as the permit coordinator and received completed master applications designed to provide sufficient information to enable all agencies with jurisdicton to act appropriately. The experiment did not contemplate a joint hearing procedure, and many of the permitting agencies had no public hearing requirement. The agencies were requested to review applications and report their decisions or recommendations within a specified time.

The coordinator compiled all the agency decisions, recommendations, or comments and transmitted them to the applicant and to the U.S. Army Corps of Engineers. If any agency denied a permit, the project would be deemed not authorized. Agencies not re-

sponding within the required time were not precluded from exercising any applicable permitting authority.

In January 1976, the BCDC released a staff report analyzing experience under the experimental program and recommending procedures to implement a formalized dredging review.[6] At the time the study was prepared, only 22 applications for dredging authority had been filed, and only 11 had been completed. The study recognized that the small number of applications, dealing with projects of a rather limited nature, makes definitive evaluation of the benefits of the procedure difficult. The temporary procedure did not establish time limits for agency compliance, and there was substantial uncertainty about implementation procedures.

The report recommended that a coordinated review procedure be adopted to handle the regulation of dredging. It suggests that each responsible agency formalize its procedures for processing and commenting on applications. Criteria should be established for differentiating between those projects which might be handled administratively and those which require the attention of an agency policymaking body. Each agency should adopt formal substantive policies and standards as criteria for decisionmaking. Time limits should be established for the performance of various functions; if they are not met, an application should be deemed granted, or the opportunity for commenting on an application should be deemed lost.

The report observed that many major delays result from the cumbersome or excessive internal operating and review procedures of individual agencies; it recommended that some form of cooperative effort between agencies be instituted. Areas of cooperation should include: adoption of an application form acceptable to all agencies; joint public hearings among all federal and state agencies, where hearings are necessary and appropriate; designation of a "principal agency" to provide applicants with information and forms on all required state and federal authorizations.

Source: Urban Land Institute, THE PERMIT EXPLOSION, COORDINATION OF THE PROLIFERATION, Washington, D.C., 1976.

APPENDIX V:
RECOMMENDATIONS FOR STATE PERMITTING COORDINATION, URBAN LAND INSTITUTE

The following is quoted from pages 30 and 31 of The Permit Explosion, Coordination of the Proliferation by the Urban Land Institute, Washington, D.C., 1976.

A coordinated permitting process offers a viable approach to better environmental and land use decision-making. In particular, serious consideration should be given to the following elements.

PERMIT REGISTER

At some central location, a master list of all development-related permits required by relevant agencies should be compiled and made available. The register can cover state and local permits, abolishing the need for registers in each locality.

MASTER APPLICATION

Duplicative paperwork can be reduced by developing a master application that can be circulated to all agencies. Agencies having peculiar information needs can prepare appendices to the master application.

JOINT HEARING ADMINISTRATOR

One agency should be created or designated to administer the coordinated hearing process. While hearing panels would be made up of representatives of all agencies exercising permitting jurisdiction, one agency should be responsible for details of maintaining a permit register, processing master applications and sending them to appropriate permitting agencies, sending out notices, scheduling hearings, and the like.

OPTIONAL LOCAL AGENCY PARTICIPATION

Local governments having jurisdiction over a particular project should have the option of participating in the coordinated state hearings. If local officials find

the process too cumbersome, they can refrain from participating; however, if local agencies wish to draw on information developed in the state hearings, they should have the option of doing so. Federal agencies might also be encouraged to participate.

INFORMATION PREHEARING PUBLIC MEETINGS

Prior to formal hearings, informal meetings or conferences in the area of a proposed project can help to facilitate a better understanding of the proposal and of probable controversial issues. These meetings should be well publicized and made available to all interested parties, or little purpose will be served. If a project can be explained and issues identified prior to formal hearings, all parties will be able to use the formal hearings more effectively.

ENVIRONMENTAL IMPACT STATEMENT

When an EIS is required, a draft should be made available to all relevant public agencies and to the public, prior to the formal hearings. Agencies should make their comments before the hearings, so that the EIS can be analyzed and evaluated by all parties during the hearing process. A final EIS should reflect information and concerns brought out at the hearings. In this way, an EIS can become a part of the decision-making process rather than an after-the-fact justification of an already-made decision.

HEARING RECORD

A key element in any coordinated hearing procedure is the creation of a complete and common hearing record. Too often, parties seeking permits give different stories to different agencies. By having a single, complete hearing record made, all agencies will better understand the various ramifications of a proposal, and possible inconsistencies in the policies or programs of relevant agencies can be exposed and jointly resolved. All parties should be bound by the hearing record, to provide incentive and assure that they will produce all relevant evidence rather than hold some back for use at a more strategic moment. Adequate legal remedies do permit the subsequent submission of new information not available at the time of the hearings.

HEARING LOCATION

Hearings should be held in the area of a proposed development. Hearing locations may cause inconvenience to one party or another, regardless of where they are. Legislative bodies authorizing the coordinated procedures should provide for a budget that permits agency personnel to

conduct hearings on location. The strain of attending hearings at remote locations is likely to present more of a barrier to individual interests, local citizen groups, and small developers than it is to public agencies.

TIME LIMIT FOR DECISIONS

Under present control systems, too many agencies can make a decision by making no decision. An applicant for a public permit should have the right to a decision, one way or another. Public agencies should be required to respond to permit applications within a reasonable time, following completion of all hearings. The length of time will vary with area circumstances, the nature of the development, the work load of permitting agencies, and other factors. A fixed time limit, written into law, may not allow agencies sufficient flexibility, but some provision should be made for establishing a deadline. Agencies that, for legitimate reasons, cannot meet a particular deadline can be given the opportunity to justify provision of a reasonably extended period.

INDIVIDUAL AGENCY DECISIONS

Each agency should make its decision based on both the common record and the legislative policies, standards, regulations, and guidelines it normally applies. Agencies should not be bound by the decisions of other agencies on a joint hearing panel (except as otherwise provided by law). During the joint hearing process, however, agencies may, through increased awareness, find ways to accommodate their own decision-making responsibilities with those of other agencies, without sacrificing legitimate public policy goals.

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Social, economic, and environmental problems faced by people affected by the relocation or development of Maritime Services are examined. Methods to improve communication between developers and local populations, to increase citizen involvement in the planning process, and to accommodate those adversely affected are described.

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Public participation and mitigation/compensation aspects of Maritime-related projects are described and analyzed in 10 illustrative cases which include the Loop Deepwater Port; Cove Point, Maryland LNG Terminal; Barbours Cut/Houston Container Terminal; and the Sohio-Long Beach Alaska Oil Terminal. The report concludes with recommendations in three major topics: Perspectives on Maritime Development, Citizen Involvement and Public Participation, and Mitigation and Compensation. Recommendations include a requirement for a public participation audit before an application can be approved and designation of a lead agency at both the Federal and state/local levels.